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# Federal Aquatic Resources Delineation

## Humboldt Bay Offshore Wind Heavy Lift Marine Terminal

New Navy Base Road
Eureka, California

**Prepared for:**

Moffatt & Nichol

**December 2023**

**022054**

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QA/QC: JLS JLS
Reference: 022054

# Summary of Results

The purpose of this report is to document the presence and extent of waters of the U.S. within the study area of the Humboldt Bay Offshore Wind Heavy Lift Marine Terminal (project). Delineations were conducted in accordance with U.S. Army Corps of Engineers (USACE) methodology to determine potentially jurisdictional resources under the USACE for the purposes of Section 404 of the Clean Water Act.

The Humboldt Bay Offshore Wind Heavy Lift Marine Terminal is located on the western shore of Humboldt Bay on the Samoa Peninsula, west of the City of Eureka in Humboldt County, California. The Humboldt Bay Harbor, Recreation, and Conservation District and its partners proposes to redevelop an approximately 180-acre site on the Samoa Peninsula to provide a new multipurpose, heavy-lift marine terminal facility to support the offshore wind energy industry and other coastal-dependent industries.

For this project, 211.664 acres were surveyed; this area includes (1) the proposed 180-acre development footprint, (2) a potential mitigation area, and (3) a buffer area around the project for analysis of coastal resources and potential impact areas for ingress/egress and supporting infrastructure.

In summary, 6.561 acres of aquatic resources were documented in the study area; this includes 1.363 acres of wetlands, of which 0.991 acres is potentially jurisdictional (adjacent to a Traditional Navigable Waterway [TNW]) and 0.372 acres are potential non-jurisdictional wetlands (not adjacent to a TNW). The remaining 5.198 acres are non-wetland waters (intertidal waters below the Mean Higher High Water [MHHW]) that potentially meet the criteria of waters of the U.S. (Table 1 and Appendix 1).

**Table 1. Potentially Jurisdictional and Non-Jurisdictional Waters of the U.S. Summary**

| Aquatic Resource Type | Total Wetland Area (acres) | Potentially Jurisdictional Wetlands (acres) | Potentially Non-Jurisdictional Wetlands (acres) | Length (linear feet) |
|---|---|---|---|---|
| **Wetlands** | | | | |
| Palustrine Forested Wetland | 0.187 | 0.077 | 0.110 | N/A |
| Palustrine Scrub-Shrub Wetland | 0.297 | 0.048 | 0.249 | N/A |
| Palustrine Emergent Wetland | 0.066 | 0.052 | 0.013 | N/A |
| Estuarine Wetland | 0.813 | 0.813 | 0 | N/A |
| **Wetlands Subtotal** | **1.363** | **0.991[a]** | **0.372** | **N/A** |
| **Non-Wetland Waters** | | | | |
| Estuarine Intertidal | 5.198 | 5.198 | 0 | 12,272 |
| **Total Aquatic Resources** | **6.561** | **6.189[a]** | **0.372** | **12,272** |

[a] Acreage calculations are based on square footage of each feature and may not add up due to rounding error.

In addition to the aquatic resource features summarized in the above table, there are other aquatic features that are also likely non-jurisdictional that are mapped within the study area. These features are human-induced with three wetland parameters that have formed within abandoned concrete foundations and stormwater conveyance infrastructure that was constructed to capture or convey stormwater from industrial infrastructure. These artificial human-induced features account for 0.552 acres of the study area, and are not included in the acreages shown in Table 1.

Roadside ditches, culverts, and culvert outfalls not having three wetland parameters were not mapped or given an area calculation.

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# Abbreviations and Acronyms

## Terms of Measurement

| Term | Definition |
|---|---|
| °C | Celsius |
| °F | Fahrenheit |
| in/hr | inches per hour |
| mmhos/cm | millimhos per centimeter |
| sq ft | square feet |

## Additional Terms

| Term | Definition |
|---|---|
| AAD | Alpha-alpha dipyridyl |
| CFR | Code of Federal Regulations |
| CWA | Clean Water Act |
| DBH | Diameter at breast height |
| DI | Drainage inlet |
| EPA | U.S. Environmental Protection Agency |
| FAC | facultative plant species |
| FACU | facultative-upland plant species |
| FACW | facultative-wetland plant species |
| GPS | Global positioning System |
| Ksat | most limiting layer to transmit water |
| MF | Manufacturing/Fabrication |
| MHHW | Mean Higher High Water |
| MLLW | Mean Lower Low Water |
| NADM | North American Drought Monitor |
| NDMC | National Drought Mitigation Center |
| NHD | National Hydrography Dataset |
| NHD | National Hydrography Dataset |
| NOAA | National Oceanic and Atmospheric Administration |
| NRCS | Natural Resources Conservation Service |
| NWI | National Wetlands Inventory |
| O&M | Operation and Maintenance |
| OBL | obligate-wetland plant species |
| OHWM | ordinary high water mark |
| RPW | Relatively Permanent Waters |
| S&I | Staging and Integration |
| TNW | Traditional Navigable Waterway |
| TP | test pit |
| UPL | upland plant species |
| USACE | U.S. Army Corps of Engineers |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| WETS | Climate Analysis for Wetlands Tables |
| WMVC | Western Mountains, Valley, and Coast |
| WTD | Wind Turbine Device |

# 1.0 Introduction

SHN has prepared this Federal Aquatic Resources Delineation for the Humboldt Bay Harbor, Recreation, and Conservation District to document the presence and extent of potentially jurisdictional waters of the U.S. within the study area of the Humboldt Bay Offshore Wind Heavy Lift Marine Terminal (Project) in Eureka, California (Figure 1; Appendix 2). Fieldwork and reporting were performed by both an SHN senior soil scientist and an SHN senior wetland ecologist.

## 1.1 Project Location

The Project is located on the Samoa Peninsula, a narrow peninsula that separates Humboldt Bay from the Pacific Ocean (Figure 1 in Appendix 2). It is less than one mile west of the City of Eureka and is located on the west shore of Humboldt Bay, facing the City.

The project is in the Eureka Geological Survey (USGS) 7.5-minute quadrangle Sections 15, 16, and 21 Township 5 North, and Range 01 West (USGS, 2022a; Appendix 2). The project extends from approximately 40.804109°, -124.190579° in the south to 40.824341°, -124.173410° in the north. The project area is accessed via multiple entry points off New Navy Base Road, which is accessed via CA 255 from U.S. Highway 101 in Eureka from the south or Arcata from the north.

## 1.2 Study Area

The study area encompasses 211.664 acres of land located on the Samoa peninsula and the western shore of Humboldt Bay. The majority of the study area has a long industrial history of forest product manufacturing that has resulted in significant grading, infilling, and expansion over previous intertidal and dune lands along the Humboldt Bay shoreline. Most of the study area has been previously developed with paved surfaces, foundations, drainageways and compacted soils remaining, following demolitions of structures and industrial facilities. Consequently, much of the site is dominated by non-native, ruderal species or is unvegetated, where concrete and asphalt remain. Natural vegetation still occurs within the study area, but it is sparse and intermittent, separated by large, formerly developed areas. Intact native vegetation occurs along the periphery of the study area, especially along Humboldt Bay in the northern portion of the study area and along Vance Avenue in the southwestern portion of the study area. A 25.879-acre portion of the study area was not delineated due to a lack of permission to access. This area is shown on figures as not surveyed.

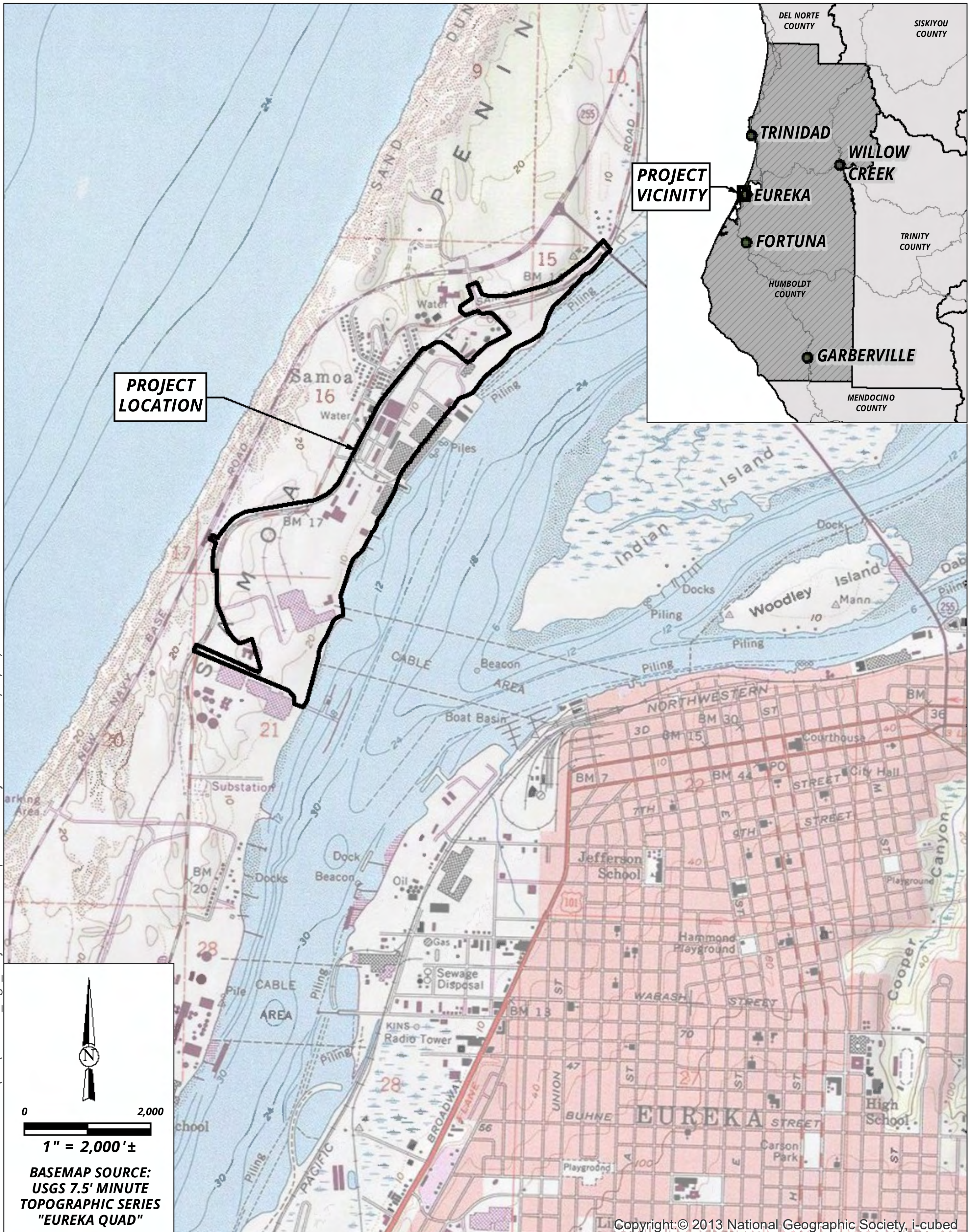
# 2.0 Project Description

The proposed project will include the redevelopment of the approximate 180-acre site on the Samoa Peninsula, which will provide a new multipurpose, heavy-lift marine terminal facility to support the offshore wind energy industry and other coastal-dependent industries.

The Project will include the facilities required to service the offshore wind industry, including:

a. Onsite manufacturing/fabrication (MF) facilities that

   i. Receive deliveries of raw materials and large offshore wind components primarily via waterborne transport.




Humboldt Bay Harbor, Rec., & Cons. District
Hum. Bay Offshore Wind Hvy. Lift Marine Terminal
Eureka, California

**Project Location Map**
**Fed. Aquatic Resources Delineation**
November 2023 - 022054.400

**Figure**
**1**

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ii. Create larger components in the offshore wind supply chain, such as blades, towers, nacelles (turbine hubs), mooring lines, anchors, transmission cables, and/or floating foundations.

iii. Include a range of buildings, including manufacturing facilities, transit sheds, offices, and/or warehouse buildings.

iv. Provide space for storage of completed components.

b. Staging and integration (S&I) facilities that include:

i. Wharf/terminal/yard facilities designed to receive, stage, and store offshore wind components, including ship-to-shore unloading capability, fixed position ring crane unloading capability, crawler crane unloading capability, and/or roll-on / roll-off capability.

ii. Heavy-lift wharfs with high-bearing capacities that can support large cranes capable of:

1. Conducting the final assembly of floating foundations.

2. Vertically integrating the various offshore wind components into deployment-ready fully-constructed floating offshore Wind Turbine Devices (WTDs).

3. Performing major maintenance on previously-deployed WTDs that must be towed back to port for repairs that cannot otherwise be performed in the offshore wind area, such as replacement of a nacelle or blade.

4. Decommissioning, disassembling, recycling, and disposing of WTDs that are at end of life.

iii. Berths adjacent to the heavy-lift wharfs within which:

1. Floating foundations can be launched, potentially with a sinking basin.

2. All components can be vertically integrated together on top of a floating foundation.

3. WTDs can be repaired, maintained, and/or decommissioned.

4. WTDs can be towed out of the bay and into the ocean.

c. Operation and Maintenance (O&M) facilities that can serve as a base of wind farm operations with warehouses/offices, spare part storage, and marine facility to support vessel provisioning and refueling/charging for O&M vessels during the operational period of the offshore wind farm.

d. Wet storage space in which floating foundations or WTDs can be temporarily moored to mitigate the risk of weather downtime, vessel traffic, entrance channel congestion, and other transportation risks. These will take two forms:

i. On-terminal wet storage occurs immediately offshore of the site and is accessed via small piers and gangways in which workers and small wheeled equipment can access floating turbines, typically fully-integrated WTDs that are near-ready to deploy to the ocean.

ii. Off-terminal wet storage occurs away from the immediate site, but also outside of the Federal navigation channels.

In order to accomplish the above, the Project includes demolition of existing structures, site preparation, marine terminal construction, dredging, establishment of wet storage sites, and habitat restoration. Project activities that may impact wetlands documented in this report are described below:

**Demolition and Construction Upland Development Subarea**

The following activities may occur within the Upland Development Subarea, which is the 180-acre project area analyzed in this report.

1. Vegetation clearing and grubbing.
2. Demolition.
    a. Demolish and remove existing buildings and structures.
    b. Demolish existing asphalt, concrete, and remnant foundations of previously demolished buildings/structures. Some of these materials may be ground onsite and re-used as fill material. Unused material will be disposed of at an appropriately permitted location.
3. Remove, reuse, relocate, update, and/or modernize existing utilities including:
    a. Water storage tanks.
    b. Power poles and lines.
    c. Underground industrial water lines.
    d. Underground domestic water lines.
    e. Underground baywater water lines.
    f. Telecommunication lines.
    g. Gas lines.
    h. Sanitary sewer.
    i. Stormwater systems.
4. Cut, fill, and site regrading in anticipation of sea level rise to obtain final ground elevations between +13 to +17 feet NAVD88 (such as: +12.66 to +16.66 MLLW). Dredge material and/or upland sources may be used as imported fill.
5. Import and install compacted gravel throughout the site for a finished wear surface.
6. Asphalt roads and parking areas in certain discrete areas (for example, a 200-space parking lot and areas near buildings).
7. Construct approximately 650,000 square feet (sq ft) of building space for manufacturing, repairs, offices, restrooms, and storage.
8. Construct internal transportation network of paved and/or compacted gravel roads.
9. If needed, improve up to two intersections on New Navy Base Road and the intersection of Cookhouse Road and Vance Avenue (See Figures 2-14).
10. Install high mast terminal lighting (approximately 150’ high) around the perimeter of the site and other, shorter lighting as needed.

11. Make drainage improvements for stormwater, which may include retention ponds, detention ponds, bioswales, and subsurface detention.
12. Install charging infrastructure for electric vehicles and electrified construction equipment such as forklifts.
13. Install fueling stations for land-based vehicles.
14. Install connection to electricity substation currently located directly south of the Project site.
15. Install solar panels on ash landfill and connect to substation.

**Marine Development Subarea**
The following activities may occur within the Marine Development Subarea.

1. Demolish an existing approximate 6-acre wooden dock at Terminal I and No Name Dock.
2. Construct up to three wharfs totaling a maximum of approximately 2,500' along the shoreline. The wharfs will consist of pile supported, vessel berth structures. This will include installation of steel and/or concrete piles. These wharfs could be discontinuous from one another or cojoined to one another.
3. Dredge berths between the newly constructed wharfs and the federal navigation channel to approximately - 40' Mean Low Lower Water (MLLW) for deep draft cargo vessel access and WTD construction activities.
4. Dredge a sinking basin to approximately -60' MLLW to accommodate semi-submersible vessel operations for device float off.

Construct a pier and associated gangways to an on-terminal wet storage facility. An on-terminal wet storage berth will be dredged between the pier/gangways and the federal navigation channel to a depth of up to -40' MLLW. The pier and gangways will allow land-based access of workers and small wheeled equipment to these temporarily stored units.

# 3.0 Methods

## 3.1 Delineation Methods

The methods used to delineate potentially jurisdictional waters and wetlands in the study area were based on the following guidance documents:

- Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987)
- A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States (USACE, 2014)
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast (WMVC) Region (USACE, 2010)
- U.S. Army Corps of Engineers Regulatory Guidance Letter No. 05-05 (USACE, 2005)
- The National Wetland Plant List: 2020 Wetland Ratings (USACE, 2020)
- Updated Map and Drawing Standards for the South Pacific Regulatory Program (USACE, 2016)

## 3.2 Data Sources

The following spatial data and literature were reviewed to determine the presence of potentially jurisdictional aquatic resources:

- Google Earth aerial imagery (Google Earth, 2022)
- National Hydrography Dataset (NHD) data from USGS (USGS, 2022b; Appendix 3)
- National Wetlands Inventory (NWI) data from the U.S. Fish and Wildlife Service (USFWS, 2022; Appendix 3)
- Natural Resources Conservation Service (NRCS) soil survey (USDA-NRCS, 2022a; Appendix 3)
- USGS 7.5-minute topographic quadrangle maps (Eureka; USGS, 2022a)

## 3.3 Definitions

Certain terms used throughout this report have specific meanings that relate to the wetland delineation process, as specified by case law, including the revised definition of waters under the conformity rule following the U.S. Supreme Court decision Sackett v. Environmental Protection Agency (2023), the 1987 Manual (Environmental Laboratory, 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: WMVC Region* (Version 2.0; USACE, 2010). These terms are described briefly below.

### 3.3.1 Waters of the U.S.

(a) ***Waters of the United States*** means (as defined in 33 Code of Federal Regulations (CFR) Chapter II § 328.3):

(1) Waters which are:

(i) 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;

(ii) The territorial seas; or

(iii) 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 (a)(5) of this section;

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

(4) Wetlands adjacent to the following waters:

(i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing, or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(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 (a)(1) or (a)(3) of this section.

(b) The following are not “waters of the United States” even where they otherwise meet the terms of paragraphs (a)(2) through (5) of this section:

(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 the U.S. Environmental Protection Agency (EPA);

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

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

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

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

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

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

(c) In this section, the following definitions apply:

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

(2) ***Adjacent*** means having a continuous surface connection.

(3) ***High tide line*** means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

(4) ***Ordinary high water mark*** means 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 character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(5) ***Tidal waters*** means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.

#### 3.3.1.1 Wetlands

In summary, for regulatory purposes, wetlands are defined as:

> "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 (33 CFR Chapter II § 328.3)."

In order to qualify as jurisdictional waters of the U.S., a wetland must be "adjacent". The regulations define "adjacent" as follows:

> "The term adjacent means "having a continuous surface connection" (33 CFR § 328.3(c) and 40 CFR §120.2)."

In addition to being adjacent, wetlands under USACE jurisdiction must contain all three wetland parameters—hydrophytic vegetation, hydric soils, and wetland hydrology. Wetlands with all three parameters are referred to as three-parameter wetlands. These wetlands must exhibit the following field indicators:

- A prevalence of hydrophytic vegetation (such as, "water loving" species with "obligate," "facultative wetland," or "facultative" wetland indicator status [USACE, 2020]);

  Plant wetland indicator statuses from The National Wetland Plant List: 2020 Update of Wetland Ratings (USACE, 2020) are abbreviated as follows:

  - OBL = Obligate wetland plants. Almost always occur in wetlands.
  - FACW = Facultative wetland plants. Usually occur in wetlands but may occur in non-wetlands.
  - FAC = Facultative plants. Occur in wetlands and non-wetlands.
  - FACU = Facultative upland plants. Usually occur in non-wetlands but may occur in wetlands.
  - UPL = Obligate upland plants. Almost never occur in wetlands.

  For species not listed in the National Wetland Plant List, two dashes (--) are used in the text and tables of the report to indicate their absence in the list. These species can be assumed to be upland species. In order to complete calculations, the wetland determination data forms use UPL for these species.

- Hydric soils (such as, hydric soils listed by the NRCS and unclassified soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part; USDA-NRCS, 2018); and

- Wetland hydrology (evidence that episodes of inundation or soil saturation lasting more than a few days during the growing season have occurred repeatedly over a period of years and that the timing, duration, and frequency of wet conditions have been sufficient to produce a characteristic wetland plant community and hydric soil morphology).

In the WMVC Region, growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) aboveground growth and development of vascular plants, and/or (2) soil temperatures. Season dates may be approximated by using tables available from NRCS National Water and Climate Center (National Oceanic and Atmospheric Administration [NOAA], 2022) to determine the median dates of 28 degrees Fahrenheit (°F; -2.2 degree Celsius [°C]) air temperatures in spring and fall based on long-term records gathered at the nearest appropriate National Weather Service meteorological station (USDA-NRCS, 2022b). In coastal northern California, the growing season is year-round as a result of the maritime moderation of temperature.

#### 3.3.1.2 Non-Wetland Waters of the U.S.

Non-wetland waters of the U.S., as described in this report, refer to ephemeral, intermittent, or perennial waterways and other waterbodies (lakes, ponds, and impoundments of jurisdictional waters) with a defined bed and bank, such as drainages, ditches, creeks, rivers, and lakes. This approximately translates to the bank-to-bank portion of waterbodies, up to the OHWM.

In 33 CFR Section 328.3 and 40 CFR Section 120.2, the OHWM for non-tidal rivers is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. The OHWM for a stream is usually determined through an examination of the recent physical evidence of surface flow in the stream channel. In dry land fluvial systems typical of desert areas, the most common physical characteristics indicating the OHWM for a channel usually include, but are not limited to, a clear, natural scour line impressed on the bank, recent bank erosion, destruction of native terrestrial vegetation, and the presence of litter and debris (USACE, 2014).

Non-wetland waters as described in this report also refer to intertidal areas including estuarine intertidal areas influenced by the ebb and flow of tidal waters. This approximately translates to the portion of intertidal areas below the MHHW.

In 33 CFR Section 328.3 and 40 CFR Section 120.2, tidal waters is defined as waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects. The high tide line is the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide.

Non-wetland waters of the U.S. may lack hydrophytic vegetation or evidence of hydric soils.

### 3.3.2 Relatively Permanent Waters

Relatively permanent waters (RPWs) are standing or continuously flowing year-round or continuously during a certain time of the year bodies of water "forming geographic features" that are described as "streams, oceans, rivers, or lakes" and "wetlands with a continuous surface connection" to a relatively permanent body of water connected to a TNW (USEPA, 2021b).

## 3.4 Delineation Field Work

The following subsections discuss the methods and equipment used to perform the wetland delineation fieldwork, wetland delineation personnel and dates, and delineation fieldwork limitations.

### 3.4.1 Delineation Field work Methods

Surveyors conducted aquatic resources delineation field surveys according to current federal guidelines to identify and map potential wetlands and waters of the U.S. and determine the extent of regulatory jurisdiction for USACE.

Surveyors conducted pre-delineation investigations by walking transects across the entire study area, where accessible. Areas with hydrophytic vegetation dominance or suspected hydrology were noted and recorded using a resource-grade global positioning system (GPS) Trimble R1 antennae, with a Samsung tablet interface with sub-meter accuracy. Locations with potential wetland conditions documented during the pre-delineation surveys were revisited and delineated using current federal guidelines to identify and map potential wetlands and waters of the U.S. and determine the extent of regulatory jurisdiction for USACE.

Paired datapoints were taken in all potential wetland areas with one point documenting wetland conditions and another documenting surrounding upland conditions to establish the edge of wetlands and conditions at the wetland edge. Data was collected to complete wetland determination data forms, documenting the presence or absence of the three wetland parameters: hydrophytic vegetation, hydric soil, and wetland hydrology. These forms provide the data and interpretation rationale that was used in determining the boundaries of agency jurisdiction and can be found in Appendix 4. Delineators took photographs of all features mapped (aquatic resources and soil pits). Representative photographs of aquatic resources in the study area are included in Appendix 5. Where accessible and when GPS accuracy allowed, aquatic features, wetland boundaries, sampling points, and culvert locations were mapped using a sub-meter GPS unit. Wetlands were not mapped below the Mean Higher High Water (MHHW), and these areas were mapped as Estuarine Intertidal non-wetland waters. All potential waters of the U.S. were classified using the Cowardin classification system (Federal Geographic Data Committee, 2013).

### 3.4.2 MHHW Delineation Field Methods

The MHHW contour for this site calculated in NAD83 (NAVD88; 2011) as 6.65', as available from the Datums for 9418817, Samoa, Humboldt Bay CA (NOAA, 2023) within the vicinity of the project location. A contour for this elevation was generated from LiDAR elevation data (2019 survey, City of Eureka), and then edited to clean up extraneous line artifacts. Manual correction of the errors in the vicinity of the two piers was also performed. The location of the MHHW was verified in the field using a submeter GPS unit to compare the mapped MHHW with MHHW indicators within the study area.

### 3.4.3 Drought Conditions Wetland Hydrology

The NOAA and U.S. Department of Agriculture (USDA) National Drought Mitigation Center (NDMC) was reviewed prior to conducting fieldwork. The 2020 field work was conducted during a moderate drought, and the 2022 fieldwork was conducted during a severe drought (NDMC, 2022). Long-term drought conditions necessitate addition considerations for wetland hydrology indicators. If the wetland delineation is conducted within a region that is experiencing a prolonged extreme drought, the USACE manual (USACE, 2010) describes the follow change in methods for determining hydrology:

> “c. Drought years. Determine whether the area has been subject to short or long-term drought. Droughts lasting two to several years in a row are common in the region, particularly in interior portions away from the Pacific coast. Drought periods can be identified by comparing annual rainfall totals with the normal range of annual rainfall given in WETS tables or by examining trends in drought indices, such as the Palmer Drought Severity Index (PDSI; Sprecher and Warne 2000). If wetland hydrology indicators appear to be absent on a site that has hydrophytic vegetation and hydric soils, no significant hydrologic manipulation (for example, no dams, levees, water diversions, land grading, etc., and the site is not within the zone of influence of any drainage ditches or subsurface drains), and the region has been affected by drought, then the area should be identified as a wetland.” (USACE, 2010)

Because the study area was located within a region that was experiencing a persistent, extreme drought during the 2022 fieldwork effort and in a “drier than normal” rainfall period during the April 2020 and August 2020 portion of the wetland delineation (see Section 4.2; Climate, and Table 3; Climate Analysis for Wetlands Tables (WETS) rainfall data), every test pit (TP) with hydric soil indicators and hydrophytic vegetation was assumed to have wetland hydrology normally, even if it was not observed during the wetland delineation fieldwork. In addition, all TPs were excavated to at least 24 inches if no other hydrology indicators were met, to determine if the USACE hydrology “Dry-Season” Water Table (C2) indicator was present.

### 3.4.4 Delineation Personnel and Dates

SHN senior botanist/wetland ecologist Joseph Saler (MS biology, focus in wetland ecology), Senior soil scientist Cindy Wilcox (MS Soil Science), and SHN senior soil scientist Sam Polly (MS Soil Science) conducted four rounds of surveys in the study area between April 2020 and August 2022. Table 2 provides a summary of the survey dates and the personnel who conducted the surveys.

**Table 2. Survey Personnel and Dates**

| Survey Dates | Personnel |
|---|---|
| April 28-June 4, 2020 | Joseph Saler and Sam Polly |
| August 5-13, 2020 | Joseph Saler and Sam Polly |
| April 29-May 20, 2022 | Joseph Saler and Cindy Wilcox |
| July 29-August 2, 2022 | Joseph Saler and Cindy Wilcox |

### 3.4.5 Delineation Field work Limitations

Wetland delineation fieldwork was conducted within a normal rainfall period during an extended period of drought for the 2022 delineation period, and during drier than normal conditions during the 2020 wetland delineation fieldwork, requiring additional scrutiny for hydrology. Additional methods to address the drought conditions are described in Section 3.4.2. The study area has a history of extensive industrial development, which has resulted in abnormal conditions throughout, including disturbed conditions, impenetrable soils, manipulated drainage and stormwater capture, and other artificial conditions.

# 4.0 Environmental Setting

This section describes the land use, climate, topography, hydrology, soils, and vegetation observed in the study area.

## 4.1 Land Use

The study area has a long history of industrial lumber production that has resulted in significant grading, infilling, and development of previous intertidal and dune lands along the Humboldt Bay shoreline. This included multiple lumber mill facilities operating concurrently and at different times across the study area. Portions of the study area were used for log storage, milling, lumber drying, and chip storage for pulp. Additionally, a wood-fired power plant supporting one of the mills existed in the northern portion of the study area. Railroad infrastructure including spur tracks, sidings, and mainlines occurred throughout the study area, as did a network of paved access roads, pipelines, overhead powerlines, and other supporting infrastructure. In addition, drains, culverts and other stormwater capture and conveyance infrastructure occurred throughout the site, reflecting the large expanses of pavement and other impermeable surfaces. Multiple dock facilities were constructed along the Humboldt Bay waterfront for shipping finished products and receiving raw materials, as well as for water intake structures. The history of development and use has greatly influenced the number of wetlands and types of wetlands occurring within the study area.

Currently, the majority of the study area is comprised of vacant industrial land. Most of the lumber mill infrastructure has been demolished and removed, with large expanses of asphalt, concrete, foundations, drainageways, compacted soils, and remnants of supporting infrastructure remaining following demolitions of structures and industrial facilities. Some industrial log storage and sorting activity continues to occur within a portion of the study area, and mariculture activities occur at two of the remaining dock facilities. The other portions of the study area are minimally used with occasional limited light industrial activity and storage of equipment. The remaining vacant industrial buildings or structures located within the study area are in severe disrepair and several are slated for demolition in the near future.

## 4.2 Climate

The region along the north coast of California generally experiences wet, cool winters and moist, mild, foggy summers. Long-term climate data for the Eureka station, approximately 1.3 miles east of the study area, was reviewed for the climate averages of the study area (NOAA, 2022). The climate in the study area is characterized by mild year-round temperatures and long wet winters. The mean maximum temperature is 59.2°F (15.1°C), ranging from 64.0°F (17.8°C) in August to 54.7°F (12.6°C) in December; the mean average low temperature is 46.0°F (7.8°C), ranging from 40.0°F (4.4°C) in December to 53°F (11.7°C) in August. The average annual precipitation is 40.4 inches, with precipitation falling entirely as rain, mostly between October and May, but with an average of at least 1 inch of rain every month except June (0.70 inch), July (0.18 inch), August (0.18 inch), and September (0.68 inch).

A method to evaluate current hydrologic conditions is to review precipitation for the three months prior to the wetland delineation field work and compare it to 30-year averages. The NRCS developed WETS, which compares the current 3-month precipitation data with the most recent 30-year precipitation average, collected at a nearby weather station (Woodley Island 1991-2020). If the current rainfall of each month is between 30 percent and 70 percent of the 30-year precipitation average, it is "normal" rainfall;

if above 70 percent, it is ranked “wetter than normal” rainfall; if below 30%, it is ranked “drier than normal” rainfall. The procedure is explained in the NRCS Engineering Field Handbook starting at Step 6, using Option #1, with Figure 19-100 used for the calculation template (USDA-NRCS, 2021).

The procedure for weighting by time and wetness condition takes the monthly rainfall total and compares it to the values for the lower- and upper-30 percent boundaries for the month. Each month is assigned a description of wet, normal, or dry, and a corresponding numerical weight value. Wet is assigned a value of 3, normal a value of 2, and dry a value of 1. The most recent preceding month is also assigned a weight of 3, with the next preceding months assigned a weight of 2 and 1, reflecting the influence of each month's precipitation on hydrologic conditions at the time of the wetland delineation.

According to the WETS data, drier than normal precipitation conditions were present in the study area during the April 28–May 15, 2020 and August 5-13, 2020 survey periods. Normal precipitation conditions were present during the May 16-June 4, 2020, April 29-May 15, 2022, and May 16-20, 2022 survey periods, and above normal precipitation conditions were present during the July 29–August 2, 2022 survey period (USDA-NRCS, 2022b). A summary of the WETS data can be found in Table 3.

**Table 3. WETS Rainfall Data, 2020 and 2022, Hydrological Analysis Eureka, Humboldt County, California**

| Month | WETS Condition | <30% | > 70% | Rainfall received (in.) | Condition Value | Weight | Product Value |
|---|---|---|---|---|---|---|---|
| **April 28–May 15, 2020 Test Pit Excavation** | | | | | | | |
| April 2020 | Dry | 2.45 | 4.35 | 2.05 | 1 | 3 | 3 |
| March 2020 | Dry | 3.92 | 6.86 | 3.69 | 1 | 2 | 2 |
| February 2020 | Dry | 3.34 | 6.84 | 0.60 | 1 | 1 | 1 |
| **Total** | | | | | | **Drier than Normal[a]** | **6** |
| **May 16–June 4, 2020 Test Pit Excavation** | | | | | | | |
| May 2020 | Wet | 0.72 | 2.02 | 4.73 | 3 | 3 | 9 |
| April 2020 | Dry | 2.45 | 4.35 | 2.05 | 1 | 2 | 2 |
| March 2020 | Dry | 3.92 | 6.86 | 3.69 | 1 | 1 | 1 |
| **Total** | | | | | | **Normal[a]** | **12** |
| **August 5–13, 2020 Test Pit Excavation** | | | | | | | |
| July 2020 | Dry | 0.05 | 0.18 | 0.03 | 1 | 3 | 3 |
| June 2020 | Dry | 0.22 | 0.81 | 0.20 | 1 | 2 | 2 |
| May 2020 | Wet | 0.72 | 2.02 | 4.73 | 3 | 1 | 3 |
| **Total** | | | | | | **Drier than Normal[a]** | **8** |
| **April 29–May 15, 2022 Test Pit Excavation** | | | | | | | |
| April 2022 | Wet | 2.45 | 4.35 | 4.57 | 3 | 3 | 9 |
| March 2022 | Dry | 3.92 | 6.86 | 1.49 | 1 | 2 | 2 |
| February 2022 | Dry | 3.34 | 6.84 | 0.51 | 1 | 1 | 1 |
| **Total** | | | | | | **Normal[a]** | **12** |
| **May 16–May 20, 2022 Test Pit Excavation** | | | | | | | |
| May 2022 | Normal | 0.72 | 2.02 | 1.36 | 2 | 3 | 6 |
| April 2022 | Wet | 2.45 | 4.35 | 4.57 | 3 | 2 | 6 |
| March 2022 | Dry | 3.92 | 6.86 | 1.49 | 1 | 1 | 1 |
| **Total** | | | | | | **Normal[a]** | **13** |

**Table 3. WETS Rainfall Data, 2020 and 2022, Hydrological Analysis Eureka, Humboldt County, California**

| Month | WETS Condition | <30% | > 70% | Rainfall received (in.) | Condition Value | Weight | Product Value |
|---|---|---|---|---|---|---|---|
| **July 29–August 2, 2022 Test Pit Excavation** | | | | | | | |
| July 2022 | Wet | 0.05 | 0.18 | 0.76 | 3 | 3 | 9 |
| June 2022 | Wet | 0.22 | 0.81 | 1.53 | 3 | 2 | 6 |
| May 2022 | Normal | 0.72 | 2.02 | 1.36 | 2 | 1 | 2 |
| **Total** | | | | | | **Above Normal[a]** | **17** |

[a] A sum of 6-9 prior to site investigation is considered a drier than normal rainfall.
10-14 prior to site investigation is considered a normal rainfall.
15-18 prior to site investigation is considered a wetter than normal rainfall.
Sources: USDA-NRCS, 2022b; NOAA, 2022

In addition to reviewing the WETS table, there is also the consideration of normal hydrological conditions over an extended period of time. California has until recently experienced two years of drought. The NOAA and USDA have a North American Drought Monitor (NADM) that monitors drought. The north coast of California, including the study area, was in a moderate drought during the 2020 delineation field effort, and a severe drought during the 2022 delineation field effort (NADM, 2022; Appendix 3). Drought conditions necessitated additional investigative efforts as described in Section 3.4.2.

## 4.3 Topography

Undeveloped lands on the Samoa peninsula are typically undulating, reflecting the aeolian sand deposits (coastal dunes) that characterize the area. Within the study area and adjacent developed land, the surface has been leveled for industrial use and large areas are flat and capped by asphalt with slight slopes to facilitate drainage. Some remnant dune habitat exists in the northwest portion of the study area, and the southern portion of the study area has the highest average elevation. The elevation in the study area ranges from 0 to approximately 50.5 feet above mean sea level on top of a remnant dune in the northwestern portion of the study area.

## 4.4 Site Hydrology

The primary sources of wetland hydrology in the study area are direct precipitation and runoff, surface water, tidal, and coastal fog. The study area is located with the Humboldt Bay/Eureka plain watershed (hydrologic unit code 18010102602; USGS, 2022b). During the delineation field work, marine intertidal waters of Humboldt Bay were observed in the study area. No streams occur within the study area, as the study area occurs on a peninsula of land less than a mile wide and is composed of well-drained aeolian soil.

Naturally occurring wetlands within the study area are typically salt marsh or deflation plain wetlands that exist on the leeward side of dunes as a result of wind driven sand movement. A combination of topography, high water table, chemical bonding of sandy soils in deflation plains, and low evapotranspiration rates allow for the development of wetland conditions in these topographic low points. The majority of the deflation plain wetlands are isolated and do not have a continuous surface connection to Traditional Navigable Waterways (TNW). Additionally, anthropogenic disturbance has led to the establishment of additional wetlands through soil compaction, grading, asphalt, imported soil and concrete placement, and other means, which has resulted in artificial wetlands and artificially induced wetlands. These features are discussed in detail in the following chapter.

## 4.5 National Hydrography Dataset

The NHD provides the water drainage network of the U.S. including rivers, streams, canals, lakes, ponds, coastline, dams, and stream gages (USGS, 2022b). It is the most comprehensive dataset for the nation; however, the data is designed to be used for general mapping because positional accuracy of aquatic features may vary due to the mapping scale.

The NHD shows the flow line for Humboldt Bay within the eastern portion of the study area and an isolated waterbody in the far eastern portion of the study area. It does not show any streams or additional features in the study area (Appendix 3).

NHD data is useful for pre-field reviews and assessing potential resources in the project area. However, field reviews are needed to determine the presence and extent of aquatic features within the study area, which may differ from the information provided by the NHD.

## 4.6 National Wetlands Inventory

The NWI provides geospatial data on wetlands and deepwater habitats in the U.S. with the Wetlands Mapper tool (USFWS, 2022). The maps are prepared from the analysis of aerial imagery, with wetlands identified based on vegetation, visible hydrology, and geography. A margin of error is inherent in the use of imagery. It cannot be used to delineate wetlands or non-wetland waters but can provide useful background information on features potentially within the vicinity.

Wetland habitats identified by the NWI are depicted in Appendix 3 and include approximately 0.0004 acre of Estuarine Subtidal Unconsolidated Bottom Sand Subtidal habitat, 2.420 acres of Estuarine Intertidal Aquatic Bed Rooted Vascular Irregularly Exposed habitat, 0.277 acre of Estuarine Intertidal Emergent Persistent Regularly Flooded habitat, 2.464 acres of Estuarine Intertidal Unconsolidated Shore Sand Regularly Flooded habitat, 0.155 acre of Palustrine Emergent Persistent Seasonally Flooded habitat, and 5.502 acres of Palustrine Scrub-Shrub Broadleaved Deciduous Temporarily Flooded habitat, for a total of approximately 10.818 acres (Table 4).

**Table 4. National Wetland Inventory Habitat Present in the Study Area**

| NWI Habitat Classification | Acreage |
|---|---|
| E1UB2L: Estuarine Subtidal Unconsolidated Bottom Sand Subtidal | 0.0004 |
| E2AB3M: Estuarine Intertidal Aquatic Bed Rooted Vascular, Irregularly Exposed | 2.420 |
| E2EM1N: Estuarine Intertidal Emergent Persistent Regularly Flooded | 0.277 |
| E2US2N: Estuarine Intertidal Unconsolidated Shore Sand Regularly Flooded | 2.464 |
| PEM1C: Palustrine Emergent Persistent Seasonally Flooded | 0.155 |
| PSS1A: Palustrine Scrub-Shrub Broadleaved Deciduous Temporarily Flooded | 5.502 |
| **Total** | **10.8184** |

## 4.7 Soils Data

The NRCS web soil survey identifies six soil map units in the study area (USDA-NRCS, 2022a; Appendix 3). A summary of the characteristics of each soil map unit is provided in Table 5.

**Table 5. Soil Map Units in the Study Area**

| Soil Map Unit | Map Symbol | Textural Class | Drainage Class | Landform | Minor Components | Hydric Criteria | % of Study Area |
|---|---|---|---|---|---|---|---|
| 155 | Samoa-Clambeach complex, 0-50 percent slopes | Sand | Samoa: Somewhat excessively drained<br>Clambeach: very poorly drained | Dunes | Oxyaquic udipsamments, unvegetated | Samoa: No<br>Clambeach: Yes | 1.5 |
| 1008 | Hydraquents mucky silt loam, strongly saline, 0-1 percent slopes, very frequently flooded | Mucky silt loam to mucky silty clay loam | Very poorly drained | Tidal marshes | Hydraquents, low tidal, water, marine | Yes | 0.2 |
| 1009 | Hydraquents-Wassents mucky silt loam, strongly saline, 0-3 percent slopes, very frequently flooded | Mucky silty clay loam | Very poorly drained | Tidal flats | Hydraquents, high tidal, water, marine | Yes | 1.5 |
| 1014 | Urban land-Anthraltic Xerorthents association, 0-2 percent slopes | Gravelly loamy fine sand, sandy loam to sand | Moderately well drained | Fluviomarine terraces | Not Defined | No | 94.4 |
| DWM | Water, marine | N/A | N/A | Tidal inlets | Wassents | Yes | 2.4 |

Source: USDA-NRCS, 2022b

## 4.8 Vegetation

The study area has a long industrial history which greatly influences the vegetation communities and species composition. Most of the study area has been previously developed with paved surfaces, foundations, drainageways, concrete rubble, and compacted soils remaining following demolitions of structures and industrial facilities. Because of this, much of the study area is dominated by large expanses of unvegetated pavement, ruderal vegetation, and other areas with a mix of non-native and native vegetation. Several natural and sensitive vegetation communities occur within highly manipulated situations on compacted gravels or other formerly developed areas; while others occur as remnants of habitat that existed prior to development. These include areas along the periphery of the study area including salt marsh (low to high elevation), beach pine forest remnants, and sand dune remnants, among others. Landcover composition including acreages and the percent cover of the study area occupied by each is listed below. Note the while the study area included 211.664 acres, a 25.879-acre area was not accessible; therefore, the percentages are out of a 185.785-acre area.

- Asphalt and pavement (mostly unvegetated): 109.59 acres (59.0%)
- Ruderal/non-native dominated: 48.99 acres (26.4%)
- Non-native grassland: 12.18 acres (6.6%)
- Coastal dune willow-Sitka willow thickets: 5.30 acres (2.9%)
- Intertidal (unvegetated): 4.52 acres (2.4%)
- Wax myrtle scrub: 1.81 acres (1%)
- Mid-high elevation salt marsh: 1.26 acres (0.7%)
- Beach pine forest: 0.62 acres (0.3%)
- Pacific willow groves: 0.55 acres (0.3%)
- Dune mat: 0.44 acres (0.2%)
- Low elevation salt marsh: 0.37 acres (0.2%)
- Pickleweed mats: 0.12 acres (<0.1%)
- Sand dune sedge marsh: 0.02 acres (<0.1%)
- Pacific silverweed marsh: 0.01 acres (<0.1%)

These vegetation communities are described in depth in the Terrestrial Biological Report (SHN, 2023). A complete list of plants observed in the study area can be found in Appendix 6.

### 4.8.1 Asphalt and Pavement (mostly unvegetated)

Unvegetated asphalt and concrete characterizes 109.59 acres of the study area. These areas represent former industrial development, including slab foundations, parking areas, log decks, wood chip storage, access roads, unvegetated concrete rubble along the shoreline, and other large expanses of asphalt. Vegetation cover is minimal and is restricted to cracks in the asphalt/concrete, in places where the asphalt/concrete has been removed or broken during the demolition process, or areas where soil has more recently been placed over the asphalt/concrete. Some of the more common non-native and invasive species include silver hairgrass (*Aira caryophyllea*), large quaking grass (*Briza maxima*), jubata grass (*Cortaderia jubata*), smooth cat's ear (*Hypochaeris glabra*), buck-horn plantain (*Plantago coronopus*), four-leaved allseed (*Polycarpon tetraphyllum* var. *tetraphyllum*), and Jersey cudweed (*Pseudognaphalium luteoalbum*), among others. These areas are upland and are designed to shed water, although there are some places where highly altered, artificially induced wetlands have developed.

### 4.8.2 Ruderal/Nonnative Species-Dominated

Ruderal/nonnative-dominated species-dominated areas characterize 48.99 acres of the study area. These areas represent former industrial development where impervious surfaces have been removed or buried during demolition, or locations where impervious surfaces were not installed for past development. Ruderal/nonnative-dominated areas are generally characterized by the dominance of a diverse flora of non-native and invasive species. Some of the more common non-native and invasive species in the study area include Himalayan blackberry (*Rubus armeniacus*), hairy vetch (*Vicia villosa* ssp. *villosa*), subterranean clover (*Trifolium subterraneum*), large quaking grass, yellow glandweed (*Parentucellia viscosa*), yellow bush lupine (*Lupinus arboreus*), iceplant (*Carprobrotus edulis* and *chilensis*), English plantain (*Plantago lanceolata*), buck-horn plantain, curly dock (*Rumex crispus*), dogtail grass

(*Cynosurus echinatus*), English ivy (*Hedera helix*), soft chess (*Bromus hordeaceus*), and French broom (*Genista monspessulana*). Native species typically present in ruderal vegetation include coyote brush (*Baccharis pilularis* ssp. *consanguinea)*, bee plant (*Scrophularia californica*), willow leaf dock (*Rumex salicifolius*), and California blackberry (*Rubus ursinus*). These areas are typically upland and well-drained, however locations with depressions and compacted soils have developed artificially induced wetland conditions, often with some level of coast willow or Sitka willow growth.

### 4.8.3 Non-native Grassland

Nonnative grassland occupies 12.18 acres of the study area. These areas represent former industrial development where impervious surfaces have been removed or buried during demolition, or locations where impervious surfaces were not installed for past development. Nonnative grassland within the study area is regularly mowed, which prevents the establishment of the herbaceous and woody species more common in the ruderal/nonnative-dominated portions of the study area. Some of the more common non-native and invasive species in the non-native grassland portions of the study area include sweet vernal grass (*Anthoxanthum odoratum*), velvet grass (*Holcus lanatus*), silver hair grass, large quaking grass, six weeks grass (*Festuca myuros*), wild oat (*Avena barbata*), dogtail grass, subterranean clover, sheep sorrel (*Rumex acetosella*), hairy cat's ear (*Hypochaeris radicata*), common catchfly (*Silene gallica*), soft chess, and rabbit foot clover (*Trifolium arvense*). Native species typically present in the non-native grassland within the study area include annual lupine (*Lupinus bicolor*), butter 'n' eggs (*Triphysaria eriantha* ssp. *eriantha*), beach strawberry (*Fragaria chiloensis*), and narrowleaf owl's clover (*Castilleja attenuata*), all with very low cover. Non-native grasslands are upland and well-drained; however, some discrete locations with depressions and compacted soils have developed artificially induced wetland conditions.

### 4.8.4 Coastal Dune Willow-Sitka Willow Thickets

Coastal dune willow-Sitka willow thickets are the most abundant natural community within the study area (5.30 acres). This vegetation is dominated by either willow species singly or by a mix of these two willow species, with lesser dominance by wax myrtle. The coastal dune willow-Sitka willow thickets occupy both wetland and upland areas. Some of the common species within the understory of upland willow thickets include Himalayan blackberry, California blackberry, sweet vernal grass, English ivy, jubata grass, and yellow bush lupine, among others. In wetland locations, water parsley (*Oenanthe sarmentosa*), slough sedge (*Carex obnupta*), Himalayan blackberry, and velvet grass were common species, among others. This vegetation community was observed frequently in formerly developed areas such as cracks in asphalt, former foundations or former drainage features and most occurrences of the vegetation community date back to the cessation of industrial activity and demolition of infrastructure.

### 4.8.5 Wax Myrtle Scrub

Wax myrtle scrub occupies 1.81 acres of the study area. This vegetation community is dominated by wax myrtle with lesser dominance by willow species or shrubby species. The Wax myrtle scrub vegetation community occupies both wetland and upland areas. Understory conditions vary widely from bare and unvegetated to Himalayan blackberry or other non-native invasive species dominance. Dominant species observed within Wax myrtle scrub within the study area included wax myrtle, Himalayan blackberry, California blackberry, beach pine (*Pinus contorta* ssp. *contorta*), large quaking grass, and coyote brush, among others. This vegetation community was observed frequently in formerly developed areas, such as cracks in asphalt, former foundations, or former drainage features, and most occurrences of the vegetation community date back to the cessation of industrial activity and demolition of infrastructure.

### 4.8.6 Mid-High Elevation Salt Marsh

Mid-high elevation salt marsh occupies 1.26 acres of the study area. Mid-high salt marsh occupies brackish wetland areas below the MHHW of 6.65 feet, Estuarine Wetlands above the MHHW and upland areas immediately above the Estuarine Wetlands where it transitions into upland vegetation dominance. This vegetation community is characterized primarily by native brackish marsh-dependent herbaceous species, however there is a non-native species component that becomes more prominent with increasing elevation. Some of the more common non-native and invasive species in the mid-high elevation salt marsh include marsh jaumea (*Jaumea carnosa*), annual pickleweed (*Salicornia depressa*), arrow grass (*Triglochin maritima*), perennial pickleweed (*Salicornia pacifica*), Brewer's rush (*Juncus breweri*), sweet vernal grass, dense-flowered cordgrass (*Spartina densiflora*), and salt grass (*Distichlis spicata*), among others. This vegetation community was observed in the northern portion of the study area along Humboldt Bay and likely represents relictual habitat that has been minimally disturbed over the years, or areas where conditions have been less manipulated, allowing for the reestablishment of salt marsh habitat. The mid-to high elevation salt marsh is extensive along the shores of Humboldt Bay, although invasive species and historical development have greatly impacted this vegetation community. It is estimated that diking and other development has reduced the extent of the mid-high elevation salt marsh by up to 90 percent.

### 4.8.7 Beach Pine Forest

Beach pine forest occupies 0.62 acres of the study area. This vegetation community is dominated by beach pine, with lesser dominance by wax myrtle and shrubby species, such as evergreen huckleberry (*Vaccinium ovatum*) and silk tassel (*Garrya elliptica*). The beach pine forest vegetation community occupies upland areas and is primarily remnant populations along the periphery of the study area, however there is minor recruitment of beach pine in the northern portion of the study area. Understory conditions vary, but primarily have abundant shrubby cover or herbaceous cover, except where the canopy is more dense. Dominant species include beach pine, evergreen huckleberry, silk tassel, Monterey pine (*Pinus radiata*), wax myrtle, and sweet vernal grass, among others. This vegetation community was observed primarily in the northwestern portion of the study area on remnant dune features or in well-drained formerly developed areas. Large intact stands occur outside of the study area.

### 4.8.8 Pacific Willow Groves

Pacific willow groves occupy 0.55 acres of the study area. This vegetation community is dominated by Pacific willow, with lesser dominance by wax myrtle, coast willow, Sitka willow, and shrubby species. The Pacific willow groves occupy stormwater detention features and other former industrial features. Understory vegetation is sparse; however, the Pacific willow grove edges are characterized by dense shrubby growth. Dominant species along the edges of this vegetation community included Himalayan blackberry, California blackberry, and jubata grass, among others.

### 4.8.9 Dune Mat

The dune mat vegetation community occupies 0.44 acres of the study area. The dune mat vegetation community occupies well-drained sandy upland areas. This vegetation community is characterized primarily by native dune-dependent herbaceous species, however there is a sizeable non-native species component. Dominant species within the dune mat vegetation community include beach buckwheat (*Eriogonum latifolium*), large quaking grass, Idaho fescue (*Festuca idahoensis*), and sheep sorrel, among others. This vegetation community was observed in the western and northern portion of the study area on remnant dune features or other sandy areas in the periphery of the study area, and likely represent relict habitat. The dune mat vegetation community is extensive on the Samoa peninsula, and large areas surrounding the study area support this vegetation community.

### 4.8.10 Low Elevation Salt Marsh

Low elevation salt marsh occupies 0.37 acres of the study area. Low salt marsh occupies tidal brackish wetland areas below the mid-high elevation salt marsh and the MHHW of 6.65 feet. The low elevation salt marsh is subject to regular tidal inundation and wave action, and represents a transitional area between the more diverse mid-high elevation salt marsh and extensive unvegetated mud flats. This vegetation community is characterized primarily by invasive dense-flowered cordgrass and native saltwater tolerant salt grass, and to a lesser extent pickleweed species. There is evidence that this vegetation community is expanding around Humboldt Bay with the increasing cover by dense-flowered cordgrass, which is more tolerant of inundation by brackish water, resulting in its colonization of mud flats adjacent to mid-elevation salt marsh.

### 4.8.11 Pickleweed Mat

The pickleweed mat vegetation community occupies 0.12 acres of the study area. The pickleweed mat vegetation community occupies mid-upper salt marsh in areas where the substrate is too altered to support the development of salt marsh. Consequently, it occurs in isolated locations throughout the concrete rubble-lined shoreline along Humboldt Bay. This vegetation community is characterized primarily by native pickleweed species, with low cover by invasive dense-flowered cordgrass. This vegetation community occurs at or below the MHHW in brackish wetlands.

### 4.8.12 Sand Dune Sedge Marsh

The sand dune sedge marsh community occupies 0.02 acres of the study area. The sand dune sedge marsh occurs in deflation plain wetlands west of the study area, and the portion of sand dune sedge marsh within the study area represents a small piece of the sand dune sedge marsh that occurs outside of the study area. Some of the more common non-native and invasive species in the sand dune sedge marsh community include sand dune sedge (*Carex pansa*), California blackberry, large quaking grass, creeping bentgrass (*Agrostis stolonifera*), and beach strawberry, among others. This vegetation community was observed in the far southwestern portion of the study area and it occurs in freshwater deflation plain wetlands.

### 4.8.13 Pacific Silverweed Marsh

The Pacific silverweed marsh community occupies 0.01 acres of the study area. It occurs in small isolated freshwater wetlands in the central portion of the study area. Some of the more common non-native and invasive species in the Pacific silverweed marsh community include bird's foot trefoil (*Lotus corniculatus*) and creeping bentgrass, among others. Native species typically present in the Pacific silverweed marsh within the study area include Pacific silverweed (*Potentilla anserina* ssp. *pacifica*), common horsetail (*Equisetum arvense*), spikerush (*Eleocharis macrostachya*), and coast willow, among others.

# 5.0 Results

This section describes potential jurisdictional and non-jurisdictional aquatic resources as defined in section 404 of the Clean Water Act (CWA) that were delineated within the study area. Potential waters of the U.S. and potentially non-jurisdictional features are summarized in Appendix 1. Figures of these resources are depicted in Appendix 2. Wetland determination data forms are contained in Appendix 4. Representative photographs for these features and riparian habitat areas are in Appendix 5. A wetland datapoint index table that categorizes upland or wetland status and associated features for each test pit with their location is in Appendix 7.

The following discussion provides a description of the wetlands and other waters delineated within the study area, as well as a description of aquatic potentially non-jurisdictional features and non-aquatic features occurring in the study area. These aquatic results and the mapped extent of delineated features depicted on the figures in Appendices 1 and 2 are subject to verification by the USACE San Francisco District.

## 5.1 Wetlands

A total of 59,383 sq ft (1.363 acres) of three-parameter wetlands occur in the study area (Appendices 1 and 2), of which 43,163 sq ft (0.991 acres) are adjacent to a TNW and are potentially jurisdictional waters. An additional 16,220 sq ft (0.372 acres) are not adjacent to a TNW and are potentially non-jurisdictional waters. Three Palustrine Wetland types occur in the study area: Palustrine Forested Wetlands, Palustrine Scrub-shrub Wetlands, and Palustrine Emergent Wetlands. In addition, Estuarine Wetlands occur within the study area associated with Humboldt Bay. A total of 24 wetlands occur in the study area. Of these, four are Palustrine Forested Wetlands, 12 are Palustrine Scrub-shrub Wetlands, three are Palustrine Emergent Wetlands, and five are Estuarine Wetlands (Appendix 1).

Palustrine Forested Wetlands are characterized by a forest overstory with greater than 30-percent cover and over 20-feet tall. Shrub and herbaceous stratums may or may not be prominent. In the study area, Palustrine Forested Wetlands have varied hydrologic conditions, a wide range of soil conditions and vegetation composition, and all have a history of human disturbance. A total of 8,150 square feet (0.187 acres) of Palustrine Forested Wetlands occur in the study area, of which 3,350 square feet (0.077 acres) are potentially jurisdictional waters adjacent to a TNW, and 4,800 sq ft (0.110 acres) are potentially non-jurisdictional waters and are not adjacent to a TNW (Appendices 1 and 2). Palustrine Forested Wetland conditions throughout the study area are summarized below under *Palustrine Forested Wetlands*, including the vegetation composition, soil conditions, and hydrology indicators. Palustrine Forested Wetlands with unusual conditions are further described individually.

Palustrine Scrub-shrub Wetlands are characterized by an overstory less than 20-feet tall without appreciable tree cover. The shrub stratum is generally very dense, and the herbaceous stratum may or may not be prominent. In the study area, Palustrine Scrub-shrub Wetlands have varied hydrologic conditions and wide-ranging vegetation composition, and all but one have a history of human disturbance. A total of 12,934 square feet (0.297 acres) of Palustrine Scrub-shrub Wetlands occur in the study area, of which 2,097 square feet (0.048 acres) are potentially jurisdictional waters adjacent to a

TNW and 2,097 sq ft (0.048 acres) are potentially non-jurisdictional waters and are not adjacent to a TNW (Appendices 1 and 2). Palustrine Scrub-shrub wetland conditions throughout the study area are summarized below under *Palustrine Scrub-shrub Wetlands*, including the vegetation composition, soil conditions, and hydrology indicators. Palustrine Scrub-shrub Wetlands with unusual conditions are further described individually.

Palustrine Emergent Wetlands are characterized by a stable well-developed herbaceous stratum and minimal tree or shrub cover. In the study area, all Palustrine Emergent Wetlands have a history of human disturbance and are artificially induced. Palustrine Emergent Wetlands have varied hydrologic conditions and wide-ranging vegetation composition. A total of 2,867 square feet (0.066 acres) of Palustrine Emergent Wetlands occur in the study area, of which 2,284 square feet (0.052 acres) are potentially jurisdictional waters adjacent to a TNW, and 2,284 sq ft (0.0.052 acres) are potentially non-jurisdictional waters are not adjacent to a TNW (Appendices 1 and 2). Palustrine emergent wetland conditions throughout the study area are summarized below under *Palustrine Emergent Wetlands*, including the vegetation composition, soil conditions, and hydrology indicators. Palustrine Emergent Wetlands with unusual conditions are further described individually.

Estuarine Wetlands are characterized by tidal influence and brackish water incursion. In the study area, Estuarine Wetlands have a varied history of human disturbance and different levels of manipulation. All are associated with Humboldt Bay and have a range of vegetation composition reflecting elevation, past disturbances, and other factors. A total of 35,432 square feet (0.813 acre; Appendices 1 and 2) of Estuarine Wetlands occur in the study area and all are potentially jurisdictional waters adjacent to a TNW. Estuarine Wetland conditions throughout the study area are summarized below under *Estuarine Wetlands*, including the vegetation composition, soil conditions, and hydrology indicators. Estuarine Wetlands with unusual conditions are further described individually.

### 5.1.1 Palustrine Forested Wetlands

There are four Palustrine Forested Wetlands in the study area (Wetlands 05, 06, 09, and 19; Appendices 1 and 2). These wetlands vary in size from 973 square feet to 3,314 square feet and have a wide range of hydrologic conditions and connectivity. All of the Palustrine Forested Wetlands within the study area have been significantly altered by human activities. Photographs 1 through 3 in Appendix 5 are representative of the Palustrine Forested Wetlands observed in the study area. All field data with details for each Palustrine Forested Wetland are included in Appendix 4. This section provides a summary of the conditions present within the Palustrine Forested Wetlands in the study area.

All Palustrine Forested Wetlands within the study area displayed hydrophytic vegetation dominance across the majority of the wetland; however, several of the Palustrine Forested Wetlands did have sparsely vegetated surfaces toward the center of the wetland where hydrology was more pronounced. The most common dominants within the Palustrine Forested Wetlands within the study area included California wax myrtle, coast willow, red alder, and Pacific willow in the tree stratum, Himalayan blackberry, California blackberry, and marsh baccharis (*Baccharis glutinosa*) in the shrub stratum, and slough sedge in the herb stratum. The average tree canopy was dense with approximately 103 percent cover, primarily California wax myrtle and coast willow. The shrub stratum was typically moderately dense and was absent in several wetlands to extremely dense in others; however, impenetrable Rubus-dominated thickets often surrounded forested wetland areas. Average shrub stratum cover in the Palustrine Forested Wetlands within the study area was approximately 33 percent. Herbaceous cover was low within the Palustrine Forested Wetlands as a result of the dense shade. Herbaceous cover within Palustrine Forested Wetlands averaged 11-percent cover; conversely, average bare soil (including litter) within Palustrine Forested Wetlands was 89 percent. Vegetation composition typically reflected wetland hydrologic conditions, forest and shaded conditions, and proximity to or history of disturbance.

The majority of Palustrine Forested Wetlands within the study area displayed prominent hydric soil indicators. The most common hydric soil indicators included Black Histic (A3) and a positive Alpha alpha-dipyridyl (AAD) reaction. Other hydric soil indicators included Sandy Redox (S5), 2cm Muck (A10), Depleted Below Dark Surface (A11), Histic Epipedon (A2), and Hydrogen Sulfide (A4). Prominent hydric soil indicators indicate stable wetland conditions, with the development of muck observed in three of the four Palustrine Forested Wetlands, indicating long-term stability, consistent saturation, and a high input of organic material from hydrophytic vegetation and canopy cover. All soils within the Palustrine Forested Wetlands were disturbed, typically fill soils from past development. Primary soil types encountered within the Palustrine Forested Wetlands under organic soils included loamy sand, silty loam, silty clay loam, and sand, among others, and many had woody debris, concrete, and brick remnants present.

Palustrine Forested Wetlands within the study area are supported by a wide range of hydrologic conditions. Three of the four Palustrine Forested Wetlands are seasonally flooded and continuously saturated, with one permanently flooded (Wetland 09). All four Palustrine Forested Wetlands in the study area had Saturation (A3) within 12 inches of the soil surface, which was the most common wetland hydrology indicator. Other common wetland hydrology indicators are High-Water Table (A2), Water-Stained Leaves (B9), Geomorphic Position (D2), and a vegetation community meeting the FAC-Neutral Test (D5). The persistent saturation is likely a primary driver of the development of organic wetland soils and hydrophytic vegetation dominance. A large portion of the wetland hydrology is driven by stormwater capture in geomorphic low points, as well as a high-water table due to proximity to tidal lands.

Two of the four Palustrine Forested Wetlands within the study area are considered potentially non-jurisdictional isolated features, and two are potentially jurisdictional wetlands with a continuous surface connection to Humboldt Bay, a TNW.

All Palustrine Forested Wetlands that have unusual or manipulated conditions are further described below as well as in the wetland data forms included in Appendix 4.

Wetland 05 is approximately 2,377 square feet and occurs within the northern portion of the study area in a swale trending west to east. This wetland is potentially jurisdictional as it has a continuous surface connection Humboldt Bay, a TNW, and appears to be a result of a stormwater capture from the surrounding area, coupled with a high-water table associated with tidelands of Humboldt Bay. It is likely that exceptionally high-tide events introduce brackish water into the easternmost portions of the wetland, but this is probably infrequent. The surrounding area is elevated and well drained, and wetland conditions are restricted to the lowest elevations of the swale. This wetland occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions with semi-natural wetland characteristics have since become established, as such, this wetland is considered a naturally occurring but human-altered wetland. See Appendix 4 data forms for TPs 31 and 32 for wetland conditions and TPs 2, 33 and 34 for surrounding upland conditions.

Wetland 06 is approximately 1,486 square feet and occurs within the northern portion of the study area in a steep banked hollow. This wetland is potentially non-jurisdictional because it has no direct aboveground connectivity to any wetlands or other waters and is a hollow that intercepts the groundwater table, creating wetland conditions. The surrounding area is elevated and well drained, and wetland conditions are restricted to the lowest elevations of the hollow. This wetland occurs within a human-altered hollow. Normal conditions with natural wetland characteristics continue to persist despite historical disturbance and manipulation. See Appendix 4 data forms for TP37 for wetland conditions and TP38 for surrounding upland conditions.

Wetland 09 is approximately 973 square feet and occurs within the northern portion of the study area in an excavated swale/drainageway. This wetland is potentially jurisdictional and has a continuous surface connection to Humboldt Bay, a TNW. Wetland hydrology appears to be a result of a stormwater capture from the surrounding area, coupled with a high-water table associated with tidelands of Humboldt Bay. Wetlands 07 and 08 flow into Wetland 09 through culverts and likely represent a former stormwater capture and conveyance system. A decayed weir made of wood and soil separate Wetland 09 from Humboldt Bay, preventing tidal incursion; however, a culvert through the weir allows high flows from Wetlands 07-09 to enter Humboldt Bay, and water is permanently pooled within Wetland 09 behind the weir when water levels drop below the elevation of the culvert. Permanently pooled water creates an unvegetated area that occupies most of the wetland. The surrounding area is elevated and well drained, and wetland conditions are restricted to the lower elevations of the swale/drainageway. This wetland occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions occur within the wetland and conditions have naturalized, however the existing wetland conditions within Wetland 09 are a direct result of human activities, including excavation of the wetland feature and construction for stormwater capture and conveyance; therefore, Wetland 09 is considered human-induced. See Appendix 4 data forms for TP43 for wetland conditions and TPs 4 and 44 for surrounding upland conditions.

Wetland 19 is approximately 3,314 square feet and occurs within the central portion of the study area in a shallow hollow. This wetland is potentially non-jurisdictional because it has no direct aboveground connectivity to any wetlands or other waters and is located within the foundation of a former warehouse. Hydrology is provided by stormwater, which collects in the depression from surrounding impervious surfaces and a high groundwater table influenced by nearby tidelands. The surrounding area is elevated, and large portions are impervious asphalt and concrete from previous industrial development, with wetland conditions restricted to the lowest elevations of the hollow. Normal conditions occur within the wetland and conditions have naturalized; however, the existing wetland conditions within Wetland 19 are a direct result of human activities, including excavation of the area for industrial infrastructure and placement of impervious surfaces in the surrounding area; therefore, Wetland 19 is considered human-induced. See Appendix 4 data forms for TP15 for wetland conditions and TP74 for surrounding upland conditions.

### 5.1.2 Palustrine Scrub-shrub Wetlands

There are 12 Palustrine Scrub-shrub Wetlands in the study area (Wetlands 02, 04, 07, 08, 10, 11, 14, 16, 20, 21, 22, and 24; Appendices 1 and 2). These wetlands vary in size from 71 square feet to 3,951 square feet and have a wide range of hydrologic conditions and connectivity. Eleven of the 12 Scrub-shrub Wetlands are human-induced wetlands, and one is naturally occurring. All field data with details for each Palustrine Scrub-shrub Wetland is included in Appendix 4. Photographs 4 through 8 in Appendix 5 are representative of the Palustrine Scrub-shrub Wetlands observed in the study area. This section provides a summary of the conditions present in each of the Palustrine Scrub-shrub Wetlands occurring in the study area.

All Palustrine Scrub-shrub Wetlands within the study area displayed hydrophytic vegetation dominance across the majority of the wetland; however, several of the Palustrine Scrub-shrub Wetlands did have sparsely vegetated surfaces toward the center of the wetland where hydrology was more pronounced. The most common dominants within the Palustrine Scrub-shrub Wetlands within the study area included coast willow, California wax myrtle, Sitka willow, and Himalayan blackberry in the tree/shrub stratum, and velvet grass and bird's foot trefoil in the herb stratum. The average tree stratum displayed approximately 59 percent, primarily California wax myrtle and coast willow. Note "tree" is defined in the USACE wetlands delineation manual (Environmental Laboratory, 1987) as any woody species greater than 3 inches diameter at breast height (DBH) regardless of height; therefore, trees recorded on data forms are mapped as shrubs for Cowardin classification determination if less than 20 feet tall, as was the case for the majority of the vegetation in the Scrub-shrub Wetlands. The shrub stratum was typically moderately dense and was absent in several wetlands to extremely dense in others; however, impenetrable Rubus-dominated thickets often surrounded the scrub-shrub wetland areas. Average shrub stratum cover in the Palustrine Scrub-shrub Wetlands within the study area was approximately 30 percent. Herbaceous cover and diversity were much higher in the Scrub-shrub Palustrine Wetlands and average herbaceous cover averaged 51.5-percent cover. Conversely, average bare soil within Palustrine Scrub-shrub Wetlands was 46 percent. Vegetation composition typically reflected wetland hydrologic conditions, shaded conditions, and proximity to or history of disturbance.

The majority of the Palustrine Scrub-shrub Wetlands within the study area displayed prominent hydric soil indicators. The most common hydric soil indicators included Sandy Mucky mineral (S1), Depleted Below Dark Surface (A11), and a positive AAD reaction. Prominent hydric soil indicators within the Palustrine Scrub-shrub Wetlands indicate stable wetland conditions; however, muck development was less pronounced in the Scrub-shrub Wetlands, with 50 percent (6 of the 12) displaying some amount of muck development. Most muck layers were thin, reflecting the relatively recent development of wetland conditions after the demolition of industrial infrastructure. Primary soil types encountered within the Palustrine Scrub-shrub Wetlands under organic soils were similar to those observed in the Forested Wetlands, including loamy sand and sand with varying degrees of organic material or gravel and woody debris, and concrete.

Palustrine Scrub-shrub Wetlands within the study area are supported by a wide range of hydrologic conditions. The most common wetland hydrology indicators within Palustrine Scrub-shrub Wetlands in the study area were Saturation (A3) within 12 inches of the soil surface, a vegetation community that meets the FAC-Neutral Test (D5), and a Geomorphic Position (D2). Other common wetland hydrology indicators included a High-Water Table (A2), Water-Stained Leaves (B9), and a Sparsely Vegetated Concave Surface (B8). Geomorphic positions allowing for water to collect and pool, and the persistent saturation is likely a primary driver of the development of hydric soils and strong hydrophytic vegetation dominance. Similar to the Forested Wetlands, a large portion of the wetland hydrology is driven by stormwater capture in geomorphic low points, as well as a high-water table due to proximity to tidal lands.

Eight of the 12 Palustrine Scrub-shrub Wetlands within the study area are considered potentially non-jurisdictional isolated features, while the remaining four Palustrine Scrub-shrub Wetlands are potentially jurisdictional with a continuous surface connection to Humboldt Bay, a TNW.

All Palustrine Scrub-shrub Wetlands are human-induced or manipulated and are further described below, as well as in the wetland data forms included in Appendix 4.

Wetland 02 is approximately 71 square feet and occurs within an excavated swale in the northern portion of the study area immediately south of the CA 255 bridge abutment. Wetland conditions extend west of the study area, and only a small portion of the wetland occurs within the study area. Wetland 02 is potentially jurisdictional and has direct connectivity to Humboldt Bay, a TNW, through a culvert under Vance Avenue, which flows into Wetland 03, which is connected to Humboldt Bay via a culvert under the Railroad fill prism. The culvert under Vance Avenue has a duck bill-style tide gate, which prevents tidal influence and brackish water incursion into Wetland 02. Wetland hydrology is provided by rainwater capture from the surrounding area, coupled with a high-water table associated with tidelands of Humboldt Bay. The surrounding area is elevated and well drained, with the CA255 bridge abutment sloping steeply immediately north of the wetland. Wetland conditions are restricted to the lower elevations of the excavated swale. Normal conditions occur within the wetland and conditions have naturalized; however, the existing wetland conditions within Wetland 02 in the study area are a direct result of human activities, including excavation of the wetland feature and construction for stormwater capture and conveyance. Natural wetland conditions exist outside of the study area; therefore, the wetland is considered a naturally occurring, human-altered wetland. See Appendix 4 data forms for TP26 for wetland conditions and TP27 for surrounding upland conditions.

Wetland 04 is approximately 341 square feet and occurs within an excavated swale in the northern portion of the study area, west of the railroad fill prism and immediately south of Wetland 03. Wetland 04 is potentially jurisdictional and has direct connectivity to Humboldt Bay, a TNW, through a culvert under the Railroad fill prism; however, the wetland elevation is above the elevation of tidal influence. Wetland hydrology is provided by a culvert draining the dredge dewatering basins, coupled with a high-water table associated with Wetland 03 and tidelands of Humboldt Bay. A berm separates Wetland 04 from Wetland 03; however, Wetland 04 appears to have been excavated. Wetland conditions are restricted to the lower elevations of the swale, which corresponds roughly to the elevation of wetland conditions in the southern end of Wetland 03. The surrounding area is elevated and well-drained sandy soils. Normal conditions occur within the wetland and conditions have naturalized; however, the existing wetland conditions within Wetland 04 in the study area are a direct result of human activities, including excavation of the wetland feature and installation of culverts; therefore, Wetland 04 is considered to be human-induced. Exploratory test pits were excavated within this wetland to confirm wetland conditions, which were determined to be similar to those recorded at TPs 23 and 26. See Appendix 4 data forms TPs 23 and 26 for representative wetland conditions and TPs 24 and 27 for representative surrounding upland conditions.

Wetland 07 is approximately 702 square feet and occurs within the northern portion of the study area in a shallow depression, which drains into a drainage inlet (DI) during storm events. This wetland is potentially jurisdictional and has a continuous surface connection to Humboldt Bay, a TNW, through a series of wetlands and culverts initially constructed for stormwater capture and conveyance. Wetland 07 drains through a culvert into Wetland 08, which in turn flows through a culvert into Wetland 09, which flows through a culvert into Humboldt Bay. Wetland hydrology appears to be the result of a stormwater capture from the surrounding area, coupled with extremely compacted soils that prevent infiltration. The slight depression and an elevated DI allow water to pool before it drains into the DI. The surrounding area is elevated, level, and well drained, and wetland conditions are restricted to the lowest elevations of the depression adjacent to the DI. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland was constructed for stormwater capture and conveyance, as such, this wetland is considered a naturalized human-induced wetland. See Appendix 4 data forms for TP39 for wetland conditions and TP40 for surrounding upland conditions.

Wetland 08 is approximately 983 square feet and occurs within the northern portion of the study area in a mostly linear excavated swale/channel. This wetland is potentially jurisdictional and has a continuous surface connection to Humboldt Bay, a TNW, through a series of wetlands and culverts initially constructed for stormwater capture and conveyance. Wetland 08 flows through a culvert into Wetland 09, which flows through a culvert into Humboldt Bay. Wetland hydrology appears to be the result of a stormwater capture from the surrounding area, coupled with a high-water table associated with tidelands of Humboldt Bay. Pooled water from Wetland 09 backs into Wetland 08, which results in some perennially pooled water, but is mostly perennially saturated with the groundwater table just below the surface. The surrounding area is elevated, level, and well drained, and wetland conditions are restricted to the excavated swale/channel. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland was constructed for stormwater capture and conveyance, as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP41 for wetland conditions and TP42 for surrounding upland conditions.

Wetland 10 is approximately 3,212 square feet and occurs within the northern portion of the study area in a shallow depression. This wetland is potentially non-jurisdictional and has no direct aboveground connectivity to any wetlands or other waters. Wetland hydrology appears to be the result of a stormwater capture from the surrounding area, coupled with extremely compacted soils that prevent infiltration. The surrounding area is elevated, level, and well drained, and wetland conditions are restricted to the shallow depression. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland is a result of grading and compaction of the area in the past, as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP60 for wetland conditions and TP61 for surrounding upland conditions.

Wetland 11 is approximately 204 square feet and occurs within the northern portion of the study area in a shallow depression. This wetland is potentially non-jurisdictional with no direct aboveground connectivity to any wetlands or other waters and is elevated over three feet above the MHHW of adjacent Humboldt Bay. Wetland hydrology appears to be the result of a stormwater capture from the adjacent access road, coupled with extremely compacted soils that prevent infiltration. The surrounding upland area is elevated and well drained, and wetland conditions are restricted to the shallow depression. This wetland occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland is a result of grading and compaction of the area in the past, as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP45 for wetland conditions and TP46 for surrounding upland conditions.

Wetland 14 is approximately 434 square feet and occurs within the northern portion of the study area in a shallow depression. This wetland is potentially non-jurisdictional and has no direct aboveground connectivity to any wetlands or other waters. Wetland hydrology appears to be the result of a stormwater capture from the adjacent impervious surfaces, coupled with extremely compacted soils that prevent infiltration. The surrounding upland area is elevated and well drained. Wetland conditions are restricted to the shallow depression, although some areas with hydrophytic vegetation dominance do extend beyond the depression. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland is a result of grading and compaction of the area in the past, as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TPs 5 and 53 for wetland conditions and TPs 54, 55, and 56 for surrounding upland conditions.

Wetland 16 is approximately 3,951 square feet and occurs within the northwestern portion of the study area in an excavated channel and swale. This wetland was created for stormwater capture and retention along the western boundary of the study area and is potentially non-jurisdictional with no direct aboveground connectivity to any wetlands or other waters. Wetland hydrology appears to be the result of a stormwater capture from the adjacent impervious surfaces and roadways. The surrounding upland area is elevated with well-drained sandy soils and large expanses of asphalt, and wetland conditions are restricted to the excavated channel and swale. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland is a result of excavation for stormwater capture and retention purposes, as such this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP7 for wetland conditions and TP66 for surrounding upland conditions.

Wetlands 20, 21, and 22 are all comparable and are described together on account of the similar conditions and proximity of the wetlands to each other within the central portion of the study area. Wetland 20 is approximately 169 square feet; Wetland 21 is approximately 2,504 square feet; and Wetland 22 is approximately 105 square feet. All three wetlands occur in shallow depressions resulting from previous industrial activity and subsequent demolition of the industrial infrastructure. Additional depressions occur within the vicinity of these wetlands but have not developed all three wetland parameters. Wetlands 20, 21, and 22 are all potentially non-jurisdictional and do not have direct aboveground connectivity to any wetlands or other waters and are isolated from each other. Wetland hydrology appears to be the result of a stormwater capture from the adjacent impervious surfaces, coupled with extremely compacted soils that prevent infiltration. The surrounding upland area is elevated with large areas of impervious surfaces, and wetland conditions are restricted to shallow depressions. Some areas with hydrophytic vegetation dominance do extend beyond the depressions as described in TPs 75, 76, and 77 in Appendix 4. Normal conditions with semi-natural wetland characteristics have become established in all three wetlands; however, these wetlands are a result of past industrial activity and compaction of the area in the past, as such, they are considered human-induced wetlands. See Appendix 4 data forms for TP17 for Wetland 20 conditions, TP18 for Wetland 21 conditions, TP79 for Wetland 22 conditions, and TPs 75, 78, and 80 for surrounding upland conditions.

Wetland 24 has approximately 258 square feet within the study area and occurs within a deflation plain basin between New Navy Base Road to the west, the railroad fill prism to the east and LP Drive to the north. Extensive wetland conditions extend west of the study area, and only a small portion of the wetland occurs within the study area. Despite the surrounding road development, natural conditions within the wetland are present with native species dominant, soils minimally disturbed, and uncommon deflation plain wetland habitat intact. This wetland is a naturally occurring, isolated deflation plain wetland, and as such, is potentially non-jurisdictional with no direct aboveground connectivity to any wetlands or other waters. Wetland hydrology appears to be the result of rainwater and a high-water table associated with tidelands of Humboldt Bay and the Pacific Ocean. Approximately half of the wetland is Palustrine Emergent Wetland dominated by herbaceous species, and the other half is Palustrine Scrub-shrub Wetland, including the portion of the wetland within the study area. The surrounding upland area is elevated with well-drained sandy soils and large expanses of asphalt associated with roadways and development. Wetland conditions are restricted to lower elevations of the deflation plain. This is a naturally occurring wetland with normal conditions present and some historical human disturbance for road and railroad development. No formal test pits were excavated in this wetland; however, exploratory test pits were excavated, which confirmed the presence of all three wetland parameters.

### 5.1.3 Palustrine Emergent Wetlands

There are three Palustrine Emergent Wetlands in the study area (Wetlands 12, 13, and 17) (Appendices 1 and 2). These wetlands vary in size from 81 square feet to 2,284 square feet and have a range of hydrologic conditions and connectivity. All Palustrine Emergent Wetlands within the study area are considered human-induced and have a history of creation by human activities, specifically industrial development, and its subsequent demolition. Two of the three Palustrine Emergent Wetlands are temporarily flooded and seasonally saturated (Wetlands 12 and 13) and one is seasonally flooded and permanently saturated (Wetland 17). All field data with details for each Palustrine Emergent Wetland is included in Appendix 4. Photographs 9 and 10 in Appendix 5 are representative of the Palustrine Emergent Wetlands observed in the study area. This section provides a summary of the conditions present in each of the Palustrine Emergent Wetlands occurring in the study area.

Dominant species included creeping bentgrass, common horsetail, birds foot trefoil, salt grass, California blackberry, Himalayan blackberry, and coast willow. Hydric soil indicators were similar to those observed in the other wetlands throughout the study area with Depleted Below Dark Surface (A11), Sandy Gleyed Matrix (S4), positive AAD reaction, and 2cm Muck (A10) observed. Very gravelly course loamy sand was observed in every palustrine emergent wetland with all showing extensive soil disturbance and manipulation. As with the other wetlands observed in the study area, saturation within 12 inches of the soil surface and a Geomorphic Position (D2) were the most common wetland hydrology indicators and were present in all Palustrine Emergent Wetlands.

Two of the three Palustrine Emergent Wetlands within the study area are potentially non-jurisdictional isolated features, and Wetland 17 is potentially jurisdictional with a continuous surface connection to Humboldt Bay, a TNW.

All Palustrine Emergent Wetlands are human-induced or manipulated conditions and are further described below, as well as in the wetland data forms included in Appendix 4.

Wetland 12 is approximately 502 square feet and occurs within the northern portion of the study area in a shallow depression. This wetland is potentially non-jurisdictional with no direct aboveground connectivity to a TNW, but it is connected to Wetland 13 via a culvert. Wetland hydrology appears to be the result of a stormwater capture from the adjacent impervious surfaces, coupled with extremely compacted soils that prevent infiltration. The surrounding upland area is elevated with compacted gravel and wetland conditions are restricted to the shallow depression, although some areas with hydrophytic vegetation dominance do extend beyond the depression as documented at TP58 in Appendix 4. This wetland occurs on fill placed over historic tidelands that were filled for industrial development likely over a century ago. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland is a result of grading and compaction of the area in the past, as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP57 for wetland conditions and TPs 59 and 58 for surrounding upland conditions.

Wetland 13 is approximately 81 square feet and occurs within the northern portion of the study area in a shallow depression excavated for stormwater capture and infiltration. This wetland is potentially non-jurisdictional with no direct aboveground connectivity to a TNW, but it is connected to Wetland 12 via a culvert. Wetland hydrology appears to be the result of a stormwater capture from the adjacent impervious surfaces, coupled with extremely compacted soils that prevent infiltration. The surrounding upland area is elevated with compacted gravel, and wetland conditions are restricted to the excavated depression. This wetland occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland is a result of excavation for stormwater capture, as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP47 for wetland conditions and TP48 for surrounding upland conditions.

Wetland 17 is approximately 2,284 square feet and occurs within the central portion of the study area in a shallow depression. This wetland is potentially jurisdictional and has a continuous surface connection to Humboldt Bay, a TNW, through Estuarine Wetland 18 at TP72 in the south, and into a DI that connects to Humboldt Bay through a culvert without a tide gate. Connectivity between Wetland 17 and Wetland 18 appears to only occur during storm events, as wetland conditions do not extend between the two wetland features and flows would only be transitory. Wetland hydrology appears to be the result of a stormwater capture from the adjacent impervious surfaces, coupled with extremely compacted soils that prevent infiltration. The surrounding upland area is elevated with compacted gravel, and wetland conditions are restricted to the shallow depression. This wetland occurs within the footprint of former industrial buildings which were demolished, leaving a depression. Normal conditions with semi-natural wetland characteristics have become established; however, the wetland is a result of past industrial development and subsequent demolition, as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP13 for wetland conditions and TP69 for surrounding upland conditions.

### 5.1.4 Estuarine Wetlands

There are five Estuarine Wetlands (Wetlands 01, 03, 15, 18, and 23; Appendices 1 and 2) representing over half of the wetland area present within the study area. These wetlands vary in size from 56 square feet to 23,957 square feet and all are potentially jurisdictional and tidally influenced with direct connectivity to Humboldt Bay and are defined as tidally influenced wetlands above the MHHW mark. Three of the five Estuarine Wetlands within the study area are naturally occurring with varying degrees of human disturbance and manipulation. The other two Estuarine Wetlands are considered human-induced with Wetland 18 occurring as a result of tidewater incursion through a low-lying DI and Wetland 23 resulting from a culvert failure. All field data with details for each Estuarine Wetland is included in Appendix 4. Photographs 11 through 16 in Appendix 5 are representative of the Estuarine Wetlands observed in the study area. This section provides a summary of the conditions present in each of the Estuarine Wetlands occurring in the study area.

Dominant species within the Estuarine Wetlands included salt grass, dense-flowered cordgrass, marsh jaumea, pickleweed, saltmarsh sand spurrey (*Spergula marina*), and Pt. Reyes bird's beak (*Chloropyron maritimum*), among others. Hydric soil indicators included Hydrogen sulfide (A4), 2cm of Muck (A10), and problematic soils with no direct indicators; however, additional hydric soil indicators are present throughout the Estuarine Wetlands not recorded on the data forms. Sand, mucky sand, loamy sand and peat were observed within the Estuarine Wetlands in addition to clay in lower elevation marsh habitat. Soil manipulation and fill was evident in all of the five Estuarine Wetlands. Wetland hydrology was pronounced within the Estuarine Wetlands as a result of the regular tidal inundation. This included periodic Surface Water (A1), a High Water Table (A2), Saturation within 12 inches of the soil surface (A3), Water Marks (B1), Algal Mat or Crust (B4), Sparsely Vegetated Concave Surface (B8), Hydrogen Sulfide Odor (C1), and a number of secondary hydrology indicators.

All five Estuarine Wetlands within the study area are potentially jurisdictional and have a continuous surface connection to Humboldt Bay, a TNW. All Estuarine Wetlands that have unusual or manipulated conditions are further described below as well as in the wetland data forms included in Appendix 4.

Approximately 23,957 square feet of Wetland 01 occurs within the northern portion of the study area along the shore of Humboldt Bay and is therefore directly connected to Humboldt Bay, a TNW. The wetland is measured from the MHHW of Humboldt Bay to the upper extent of Wetland conditions, which is limited by the extent of tidal influence on hydric soil development and wetland hydrology. The landward side of Wetland 01 is bounded by elevated upland area with compacted gravel and other fill, likely limiting the historical extent of this wetland and other similar saltmarsh Estuarine Wetlands; however, additional wetland area extends north of the study area. Wetland 01 appears to be remnant saltmarsh and tidelands with a history of extensive manipulation and development. Wood pilings for docks and log rafts occur throughout the wetland and fill along the landward boundary of the wetland, limiting the extent of wetland conditions. Despite the historical disturbance, normal conditions occur, and well developed, intact saltmarsh habitat has become established which supports sensitive saltmarsh vegetation communities and special-status botanical species. As such, this wetland is considered a human-manipulated but naturally occurring wetland. See Appendix 4 data forms for TP23 for representative wetland conditions and TP24 for surrounding upland conditions.

Approximately 9,193 square feet of Wetland 03 occurs within the northern portion of the study area in a linear swale between Vance Avenue and the railroad fill prism, and additional wetland area extends north of the study area. This wetland is directly connected to Humboldt Bay, a TNW, via a large culvert under the railroad fill prism north of the study area. The culvert does not have a tide gate, allowing for slightly muted tidal influence. The wetland is measured from the MHHW of Humboldt Bay to the upper extent of wetland conditions, which is limited by the extent of tidal influence on hydric soil development and wetland hydrology. The wetland is surrounded by elevated upland area with compacted gravel from the Vance Avenue and railroad fill prisms, consisting of manipulated developed conditions with limited habitat value. Wetland 03 appears to be remnant saltmarsh and tidelands with a history of extensive manipulation and development. The fill prisms on the east and west sides of Wetland 03 are steep and limit the saltmarsh vegetation community that would otherwise occupy the edges of this type of wetland. A small portion of intact saltmarsh vegetation, including two special-status species, occurs in the southern portion of Wetland 03, which is gradually sloping and appears to be a remnant of historical pre-development conditions. Normal conditions with remnant natural wetland characteristics occur; however, the wetland has been impacted by past development; as such, this wetland is considered a human-manipulated but naturally-occurring wetland. See Appendix 4 data forms for TP23 for wetland conditions and TP24 for surrounding upland conditions.

Wetland 15 is approximately 704 square feet and occurs north of the wooden wharf along the shore of Humboldt Bay and is therefore directly connected to Humboldt Bay, a TNW. The wetland is measured from the MHHW of Humboldt Bay to the upper extent of wetland conditions, which is limited by the extent of tidal influence on hydric soil development and wetland hydrology. The landward side of Wetland 15 is bounded by elevated upland area with compacted gravel and other fill, likely limiting the historical extent of this wetland and other similar saltmarsh Estuarine Wetlands. Wetland 15 appears to be remnant saltmarsh and tidelands with a history of extensive manipulation and development. Wood pilings for docks and log rafts occur throughout the wetland and fill along the landward boundary of the wetland limits the extent of wetland conditions. Despite the historical disturbance, normal conditions occur, and well developed, intact saltmarsh habitat has become established, which supports sensitive saltmarsh vegetation communities and special-status botanical species. As such, this wetland is considered a human-manipulated but naturally occurring wetland. See Appendix 4 data forms for TP23 for representative wetland conditions and TP50 for representative upland conditions.

Wetland 18 is approximately 1,522 square feet and occurs within the central portion of the study area in a shallow depression adjacent to a DI. The DI drains into a culvert that flows directly to Humboldt Bay and does not have a tide gate, allowing for tidewater intrusion during high tide events that pool in the lowest elevations around the DI. The irregular tidal influence has allowed for the growth and dominance by high salt marsh species such as salt grass and dense flowered cordgrass. The surrounding upland area is elevated with fill soils, and wetland conditions are restricted to the lowest elevation of the shallow depression around the DI. This wetland occurs within the footprint of former industrial buildings that were demolished, leaving exposed fill soils, allowing for the growth of a mix of native and non-native grasses, ruderal species, and trees and shrubs. Normal conditions have become established; however, the wetland is a result of past industrial development and subsequent demolition; as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP72 for wetland conditions and TP71 and TP73 for surrounding upland conditions.

Wetland 23 is approximately 56 square feet and occurs within the central portion of the study area in a deep pit caused by the collapse of a culvert. The culvert flows directly to Humboldt Bay and does not have a tide gate, allowing for muted tidal influence within the lowest elevations of the pit. The surrounding upland area is elevated with compacted gravel, and wetland conditions are restricted to the deep pit. This wetland occurs within the footprint of former industrial buildings that were demolished, leaving a gravel area allowing for the growth of trees and shrubs, which are rooted at the soil surface, approximately six feet above the elevation of the wetland. Normal conditions have become established; however, the wetland is a result of past industrial development and subsequent demolition; as such, this wetland is considered a human-induced wetland. See Appendix 4 data forms for TP81 for wetland conditions and TP82 for surrounding upland conditions.

## 5.2 Non-Wetland Waters

In the study area, non-wetland waters include Estuarine Intertidal Shoreline under the MHHW. No streams occur within the study area because of the narrow Samoa spit comprised of well-drained aeolian sand deposits which does not contain enough area with well-defined watersheds to support stream flows.

### 5.2.1 Estuarine Intertidal Shoreline

These include Estuarine Intertidal Shoreline below the MHHW, which represents the upper bound of jurisdictional waters where wetlands do not extend beyond the MHHW. The MHHW is identified as 6.65 feet elevation at this location using the Datums for 9418817 tide station, Samoa, Humboldt Bay, California, which occurs within the study area footprint. Two Estuarine Intertidal areas exist in the study area with a total length of 12,272 feet (2.324 miles) along Humboldt Bay. A total of 226,415 square feet (5.198 acres) of Estuarine Intertidal Shoreline occurs within the study area (Appendices 1 and 2) and is discussed below. Photographs 11 and 17 through 19 in Appendix 5 are representative of the Estuarine Intertidal Shoreline observed in the study area.

MHHW 01 includes the MHHW of 6.65 feet elevation for approximately 1,394 feet and a total of 14,971 square feet (0.344 acres) below the MHHW at this location within the study area. This location represents portions of Estuarine Wetland 03 below the MHHW and is contained within the swale between Vance Avenue and the railroad fill prism as described in section 5.1.4. A large portion of this area is permanently flooded due to the culvert elevation preventing drainage during low tide and supports eelgrass (*Zostera marina*) and unvegetated mud and sediment.

MHHW 02 includes the MHHW of 6.65 feet elevation for approximately 10,878 feet and a total of 211,444 square feet (5.198 acres) below the MHHW along Humboldt Bay within the study area (Appendices 1 and 2). Conditions below the MHHW 02 are characterized by past industrial development and the Estuarine Intertidal environment of Humboldt Bay. Most of the shoreline has been armored using a wide range of former industrial material including concrete, metal, brick, rock, and wood pilings. Intertidal habitat is limited in these locations. Armored portions of the Estuarine Intertidal Shoreline extend for approximately 7,848 feet or 72 percent of the shoreline within the study area. The northernmost portion of the shoreline within the study area is minimally armored and supports low saltmarsh dominated by dense-flowered cordgrass. This area corresponds to the area occupied by Wetland 01 which occurs above the MHHW. Minimally armored shoreline extends for approximately 3,030 feet or 28 percent of the shoreline within the study area and is primarily in the northernmost portion of the study area. Estuarine Intertidal Shoreline within the study area is protected from rough wave action by the estuarine conditions within Humboldt Bay; however, erosive hydrodynamics do occur throughout the year necessitating armoring where salt marsh is absent. Haphazard placement of armoring has resulted in unequal protection of the shoreline and erosion in places. Small areas of native saltmarsh vegetation have become established in relatively flat areas within the armoring; however, the extent of saltmarsh vegetation is limited. Mud flats extend from the base of the armoring toward the deeper channels of Humboldt Bay. Significant eelgrass beds occur in the lower elevations of the intertidal zone.

## 5.3 Potentially Non-Jurisdictional Artificial Human-Induced Features

Several artificial aquatic features occur in the study area that are not believed to be jurisdictional features. These features were either constructed to hold, capture, or convey surface water and stormwater, or are the direct result of human disturbance and development activities and have little development of wetland habitat. Potentially non-jurisdictional artificial human-induced aquatic features mapped in the study area include a rectangular concrete-lined foundation with willow growth in the north central portion of the study area, several rectangular depressions with gravelly soils between concrete foundations of former drying sheds in the north central portion of the study area, and a linear stormwater feature in the south-central portion of the study area (Table 6; Appendix 5, Photos 20 through 26). The following paragraphs describe these features and include a rational for why they are not likely jurisdictional.

**Table 6. Potentially Non-jurisdictional Artificial Human-induced Wetlands and Other Waters in the Study Area**

| Aquatic Resource Name | Cowardin Type[a] | Central Location (latitude/ longitude) Datum WGS 84 | Area (square feet) |
|---|---|---|---|
| Concrete Vault and Foundation | PFO1Erx0n | 40.819480°, -124.183669° | 667 |
| Drying shed Foundations | PEM1Brx0n | 40.816284°, -124.186059° | 15,398 |
| Stormwater Collection System | None | 40.806902°, -124.191117° | 7,991 |
| | | **Human-induced Wetland & Other Waters Total** | **24,055 (0.552 acres)** |

[a] Cowardin Codes:

PFO1Es0n Palustrine forested broad-leaved deciduous seasonally flooded/saturated artificial substrate excavated freshwater wetland with mineral soils

PEM1Brx0n Palustrine Emergent persistent temporarily seasonally saturated artificial substrate excavated freshwater wetland with mineral soils

A concrete vault and foundation occur in the northwest portion of the study area. The area was formerly developed with industrial infrastructure with a building occupying this location as shown in aerial imagery from 1990 (Google Earth, 2022). The structure and associated industrial infrastructure were demolished and removed, leaving the concrete foundation. A rectangular vault within the concrete foundation captures and holds stormwater from the surrounding impervious surface. The pooled water and associated pronounced hydrology have allowed for the development of hydric soils over time within the concrete vault followed by the growth of Pacific willow trees, which have accelerated soil development. This feature occupies approximately 667 square feet within the entirety of the concrete vault in the center of a concrete foundation within an otherwise upland area. While this area has all three wetland parameters present, the feature is not believed to be jurisdictional due to its entirely artificial nature and limited wetland value because of the surrounding concrete surfaces. Furthermore, this feature is completely isolated and does not have connectivity to any other wetlands or other waters. See Appendix 4 data forms for TP64 for wetland conditions and TP65 for surrounding upland conditions.

Drying sheds historically occupied the north central portion of the study area. The area was formerly developed with lumber drying facilities including warehouses and lumber racks as shown in aerial imagery from 1990 (Google Earth, 2022). The industrial infrastructure was demolished and removed, leaving concrete foundations. Rectangular depressions with compacted gravel occur between the concrete foundations used for moving the lumber drying racks. The rectangular depressions capture and hold stormwater from the surrounding impervious surfaces. The seasonally pooled water and associated pronounced hydrology have allowed for the development of hydric soils over time within the compacted gravel soils followed by the growth of a mix of hydrophytic herbaceous species, which have further accelerated soil development. Twelve of the rectangular depressions have all three wetland parameters present and display similar hydrology, soil, and vegetation characteristics. The 12 features occupy approximately 15,398 square feet within the former drying shed foundations. While these features have all three wetland parameters present, they are not believed to be jurisdictional due to their entirely artificial nature and limited wetland value because of the surrounding concrete surfaces. Furthermore, these features are completely isolated and do not have connectivity to any other wetlands or other waters, although they may be attached to each other during rain events if pooled water is able to flow across the concrete surfaces that separate the depressions. See Appendix 4 data forms for TP9, TP10, and TP11 for wetland conditions and TP8 and 68 for surrounding upland conditions.

A large willow-dominated stormwater collection system occurs within the southern portion of the study area. The current configuration of this feature was created for the collection of stormwater from the extensive surrounding impervious surfaces associated with the former pulp mill and other lumber mills. A total of 15 culverts drain into this feature along its length resulting in substantial flows during storm events that have developed limited OHWM characteristics. Three weirs with stainless steel mesh filters exist between the stormwater feature and the outfall culvert, which passes through a large upland berm that separates the stormwater feature from Humboldt Bay. Although this feature captures stormwater from a large area, it has not developed all three wetland indicators, with hydric soils absent, indicating that wetland hydrology is not persistent and is likely closely tied to storm events. The stormwater feature has not been maintained since the closure of the pulp mill in 2008, and culverts and weirs are decaying, and willow growth has been pronounced; however, light industrial use such as log storage, mariculture, and soil storage utilizing this feature for stormwater capture is ongoing. The stormwater feature occupies approximately 7,991 square feet. While this feature does have some OHWM indicator development, it is not believed to be jurisdictional due to the artificial hydrologic input, weirs, and managed nature of flows. This stormwater feature is connected to Humboldt Bay via an inverted culvert that passes through a berm. The culvert is elevated and only allows for stormwater flows to pass into Humboldt Bay after it has passed through the weirs and has reached a certain elevation. See Appendix 4 data forms for test pits TP20, TP21, and TP22 for two-parameter stormwater feature conditions and TP86, TP87, and TP88 for surrounding upland conditions. Because the entire feature as it currently exists is artificial and was constructed through upland for stormwater conveyance and lacks hydric soils, it is not believed to be jurisdictional.

## 5.4 Non-Aquatic Resources

Non-aquatic resources include human-made infrastructure constructed in uplands and draining uplands for stormwater conveyance and management. Non-aquatic resources include roadside ditches, roadside culverts, culvert outfalls and associated erosion, and other roadway and asphalt-related stormwater features.

### 5.4.1 Roadside Ditches

Roadside ditches occur throughout the study area along paved roadways for the purpose of conveying stormwater away from the roadway. These roadside ditches were excavated in uplands to convey stormwater, are typically well drained in sandy soils or are asphalt or concrete lined and have flows only during storm events. They typically drain into culverts or DIs that discharge to unknown locations, but ultimately to Humboldt Bay. While these roadside ditches may be hydrologically connected to Humboldt Bay, they lack the OHWM indicators and wetland parameters that define wetlands and streams. Namely, they do not support hydrophytes and lack hydric soils and wetland hydrology due to the episodic nature of flows. Furthermore, these features do not have OHWM indicators because of the asphalt or concrete lining or well drained soils. For these reasons, roadside ditches are considered non-aquatic resources.

### 5.4.2 Culverts and Culvert Outfalls

Culverts occur throughout the study area for the purpose of conveying stormwater away from the large expanses of impervious surfaces associated with former industrial development. These culverts were installed in uplands and primarily drain asphalt which is dry for most of the year except during storm events. Culverts typically discharge to upland areas or wetlands, or Humboldt Bay, and often represent the hydrologic connectivity between non-aquatic impervious surfaces and wetlands and Humboldt Bay in the study area. Several of the culvert inlet and outfall locations are mapped in the study area; however, this mapping is not comprehensive.

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# Potential Wetlands and Other Waters in the Study Area

# 1

| Potential Jurisdictional Wetland Waters of the U.S. in the Study Area | | | | | |
|---|---|---|---|---|---|
| **Aquatic Resource Name[1]** | **Cowardin Code/Name[2]** | **Centroid Location (latitude, longitude) Datum WGS 84** | **Aquatic Resource Area (square feet)** | **Adjacent to a TNW** | **Notes[3]** |
| **Palustrine Forested Wetland** | | | | | |
| Wetland 05 | PFO1Es0n | 40.820908°, -124.177560° | 2,377 | Yes | Continuously saturated and seasonally flooded, with rare tidal incursion. It has direct above ground connectivity to Humboldt Bay a TNW. Naturally occurring, but human altered. |
| Wetland 09 | PFO1Hx+h0n | 40.819948°, -124.178740° | 973 | Yes | Permanently flooded wetland. Direct Connectivity to Humboldt Bay, a TNW, through a decayed culvert. Human induced within an excavated channel with an impoundment structure at the outfall preventing tidal influence. |
| **Palustrine Forested Wetland Subtotal[4]** | | | **3,350 (0.077 acres)** | | |
| **Palustrine Scrub-Shrub Wetland** | | | | | |
| Wetland 02 | PSS3F+Dx0+3n | 40.824092°, -124.174216° | 71 | Yes | Semi permanently flooded and continuously saturated wetland. Connected to Wetland 3 and Humboldt Bay a TNW through culverts under Vance Avenue and the railroad. A tidegate at the outfall of the culvert under Vance Ave limits brackish water incursion. Naturally occurring, human altered. |
| Wetland 04 | PSS1Bx0n | 40.822749°, -124.175590° | 341 | Yes | Seasonally saturated wetland. Connected to Humboldt Bay via a culvert under the railroad fill prism. Human induced and excavated. |
| Wetland 07 | PSS1Cx0n | 40.820672°, -124.178977° | 702 | Yes | Seasonally flooded wetland. Connected to Humboldt Bay, a TNW, through a DI and culvert system including wetlands 8 and 9. Human induced and excavated for stormwater management purposes. |

| Potential Jurisdictional Wetland Waters of the U.S. in the Study Area | | | | | |
|---|---|---|---|---|---|
| Aquatic Resource Name[1] | Cowardin Code/Name[2] | Centroid Location (latitude, longitude) Datum WGS 84 | Aquatic Resource Area (square feet) | Adjacent to a TNW | Notes[3] |
| Wetland 08 | PSS4Ex0n | 40.820253°, -124.178992 | 983 | Yes | Continuously saturated and seasonally flooded wetland. Connected to Humboldt Bay, a TNW, through a culvert system including wetlands 7 and 9. Human induced and excavated for stormwater management purposes. |
| **Palustrine Scrub-shrub Wetland Subtotal[4]** | | | **2,097 (0.048 acres)** | | |
| **Palustrine Emergent Wetland** | | | | | |
| Wetland 17 | PEM1Es0n | 40.815370°, -124.185282° | 2,284 | Yes | Continuously saturated and seasonally flooded wetland. Connected to Humboldt Bay, a TNW, through a DI and culvert system during storm events. Human-induced. |
| **Palustrine Emergent Wetland Subtotal[4]** | | | **2,284 (0.052 acres)** | | |
| **Estuarine Wetland** | | | | | |
| Wetland 01 | E2EM1N3g | 40.822387°, -124.175569° | 23,957 | Yes | Regularly flooded tidal saltmarsh wetland. Part of the Humboldt Bay tidal saltmarsh and has direct connectivity to Humboldt Bay, a TNW. Naturally occurring and minimally altered. |
| Wetland 03 | E2US+EM1N3n | 40.823083°, -124.175129° | 9,193 | Yes | Regularly flooded tidal saltmarsh wetland. Part of the Humboldt Bay tidal saltmarsh and has direct connectivity to Humboldt Bay, a TNW through a culvert without a tide gate under the railroad fill prism. Naturally occurring, but human altered. Occurs between Vance Ave and the Railroad. |

| Potential Jurisdictional Wetland Waters of the U.S. in the Study Area | | | | | |
|---|---|---|---|---|---|
| **Aquatic Resource Name[1]** | **Cowardin Code/Name[2]** | **Centroid Location (latitude, longitude) Datum WGS 84** | **Aquatic Resource Area (square feet)** | **Adjacent to a TNW** | **Notes[3]** |
| Wetland 15 | E2US+EM1N3n | 40.817998°, -124.181074° | 704 | Yes | Regularly flooded tidal saltmarsh wetland. Part of the Humboldt Bay tidal saltmarsh and has direct connectivity to Humboldt Bay, a TNW. Naturally occurring but significantly altered by past industrial activity. |
| Wetland 18 | E2EM1Px3n | 40.814823°, -124.185240° | 1,522, | Yes | Irregularly flooded tidal wetland. Has direct connectivity to Humboldt Bay, a TNW through a culvert without a tide gate. Human induced and manipulated. Wetland occurs within a shallow depression of a former industrial building footprint. |
| Wetland 23 | E2FO3Nx3n | 40.811575°, -124.187987° | 56 | Yes | Regularly flooded tidal wetland. Has direct connectivity to Humboldt Bay, a TNW through a culvert without a tide gate. Human induced and manipulated. Wetland occurs in a sinkhole created by the collapse of the culvert. |
| **Estuarine Wetland Subtotal[4]** | | | **35,432 (0.813 acres)** | | |
| **Potential Jurisdictional Wetland Waters Total[4]** | | | **43,163 (0.991 acres)** | | |

| Potential Non-Jurisdictional Wetland Waters in the Study Area | | | | | |
|---|---|---|---|---|---|
| **Aquatic Resource Name[1]** | **Cowardin Code/Name[2]** | **Centroid Location (latitude, longitude) Datum WGS 84** | **Aquatic Resource Area (square feet)** | **Adjacent to a TNW** | **Notes[3]** |
| **Palustrine Forested Wetland** | | | | | |
| Wetland 06 | PFO3E0n | 40.821393°, -124.17954658° | 1,486 | No | Continuously saturated and seasonally flooded isolated wetland. No connectivity to other wetlands or waters. Human altered. |
| Wetland 19 | PFO1Es0n | 40.814307°, -124.185636° | 3,314 | No | Continuously saturated and seasonally flooded isolated wetland. No connectivity to other wetlands or waters. Human induced. |
| **Palustrine Forested Wetland Subtotal** | | | **4,800 (0.110 acres)** | | |
| **Palustrine Scrub-Shrub Wetland** | | | | | |
| Wetland 10 | PSS1+4Bs0n | 40.819808°, -124.179274° | 3,212 | No | Seasonally saturated wetland. No connectivity to other wetlands or waters. Human induced. |
| Wetland 11 | PSS1A+Bs+x0n | 40.819633°, -124.179077° | 204 | No | Seasonally saturated wetland. No connectivity to other wetlands or waters. Human induced and excavated. |
| Wetland 14 | PSS1Bs0n | 40.819467°, -124.180612° | 434 | No | Seasonally saturated wetland. No connectivity to other wetlands or waters. Human induced. |
| Wetland 16 | PSS1Cx0n | 40.818528°, -124.184824° | 3,951 | No | Seasonally flooded wetland. No connectivity to other wetlands or waters. Human induced and excavated for stormwater management. |
| Wetland 20 | PSS1Cs0n | 40.814230°, -124.187096° | 169 | No | Seasonally flooded wetland. No connectivity to other wetlands or waters. Human induced. |
| Wetland 21 | PSS1Cs0n | 40.814050°, -124.187968° | 2,504 | No | Seasonally flooded wetland. No connectivity to other wetlands or waters. Human induced. |

| Potential Non-Jurisdictional Wetland Waters in the Study Area | | | | | |
|---|---|---|---|---|---|
| Aquatic Resource Name[1] | Cowardin Code/Name[2] | Centroid Location (latitude, longitude) Datum WGS 84 | Aquatic Resource Area (square feet) | Adjacent to a TNW | Notes[3] |
| Wetland 22 | PSS1Cs0n | 40.813890°, -124.188198° | 105 | No | Seasonally flooded wetland. No connectivity to other wetlands or waters. Human induced. |
| Wetland 24 | PSS/EM1B0n | 40.809907°, -124.195697° | 258 | No | Seasonally saturated, deflation plain wetland. Isolated, with no above ground connectivity to a TNW. Naturally occurring and minimally disturbed. |
| **Palustrine Scrub-Shrub Wetland Subtotal** | | | **10,837 (0.249 acres)** | | |
| **Palustrine Emergent Wetland** | | | | | |
| Wetland 12 | PEM1A+Bs0n | 40.819388°, -124.179667° | 502 | No | Temporarily flooded and seasonally saturated wetland. Connected to Wetland 13 via a culvert, but no connectivity to Humboldt Bay or other TNW. Human-induced. |
| Wetland 13 | PEM1A+Bx0n | 40.819189°, -124.179666° | 81 | No | Temporarily flooded and seasonally saturated wetland. Connected to Wetland 12 via a culvert, but no connectivity to Humboldt Bay or other TNW. Human-induced and excavated for stormwater management purposes. |
| **Palustrine Emergent Wetland Subtotal** | | | **583 (0.013 acres)** | | |
| **Potential Non-Jurisdictional Wetland Waters Total[4]** | | | **16,220 (0.372 acres)** | | |

Sources: Cowardin et al. 1979; Federal Geographic Data Committee 2019

[1] Data forms were collected for some of these features as shown on the maps in Appendix A.

[2] Cowardin Codes:

| | |
|---|---|
| E2EM1N3g | Estuarine intertidal emergent persistent regularly flooded brackish wetland with organic soils |
| E2EM1Px3n | Estuarine intertidal emergent persistent irregularly flooded excavated brackish wetland with mineral soils |
| E2FO3Nx3n | Estuarine intertidal forested broad-leaved evergreen regularly flooded excavated brackish wetland with mineral soils |
| E2US+EM1N3n | Estuarine intertidal unconsolidated shore to emergent persistent regularly flooded brackish wetland with mineral soils |

| | |
|---|---|
| PEM1A+Bs0n | Palustrine Emergent persistent temporarily flooded to seasonally saturated spoils freshwater wetland with mineral soils |
| PEM1A+Bx0n | Palustrine Emergent persistent temporarily flooded to seasonally saturated excavated freshwater wetland with mineral soils |
| PEM1Es0n | Palustrine Emergent persistent seasonally flooded/saturated spoils freshwater wetland with mineral soils |
| PFO1Es0n | Palustrine forested broad-leaved deciduous seasonally flooded/saturated spoils freshwater wetland with mineral soils |
| PFO3E0n | Palustrine forested broad-leaved evergreen seasonally flooded/saturated freshwater wetland with mineral soils |
| PFO1Hx+h0n | Palustrine forested broad-leaved deciduous permanently flooded excavated, diked and impounded freshwater wetland with mineral soils |
| PSS1A+Bs+x0n | Palustrine scrub-shrub broad-leaved deciduous temporarily flooded spoils and excavated freshwater wetland with mineral soils |
| PSS1Bs0n | Palustrine scrub-shrub broad-leaved deciduous seasonally saturated spoils freshwater wetland with mineral soils |
| PSS1+4Bs0n | Palustrine scrub-shrub broad-leaved deciduous and needled-leaved evergreen seasonally saturated spoils freshwater wetland with mineral soils |
| PSS1Bx0n | Palustrine scrub-shrub broad-leaved deciduous seasonally saturated excavated freshwater wetland with mineral soils |
| PSS1Cs0n | Palustrine scrub-shrub broad-leaved deciduous seasonally flooded spoils freshwater wetland with mineral soils |
| PSS1Cx0n | Palustrine scrub-shrub broad-leaved deciduous seasonally flooded excavated freshwater wetland with mineral soils |
| PSS3F+Dx0+3n | Palustrine scrub-shrub broad-leaved evergreen semi-permanently to continuously saturated excavated freshwater to brackish wetland with mineral soils |
| PSS4Ex0n | Palustrine scrub-shrub needle-leaved evergreen seasonally flooded/saturated excavated freshwater wetland with mineral soils |
| PSS/EM1B0n | Palustrine scrub-shrub emergent persistent seasonally saturated freshwater wetland with mineral soils. |

[3] Flow connections to TNW are assumed except in the limited areas where access allowed investigation.
[4] Square footage presented in the table was rounded to the nearest whole number. Due to this the total acreage and square footage do not always match in the "Total" rows.

| Potential Non-wetland Waters of the U.S. in the Study Area | | | | | |
|---|---|---|---|---|---|
| **Aquatic Resource Name** | **Cowardin Code/Name[1]** | **Central Location (latitude, longitude) Datum WGS 84** | **Aquatic Resource Area (square feet)** | **Aquatic Resource Length (linear feet)** | **Notes[4]** |
| **Estuarine Intertidal Shoreline** | | | | | |
| MHHW 01 | E2US3N, E2AB3N | 40.823699°, -124.174337° | 14,971 | 1,394 | TNW |
| MHHW 02 | E2US3N, E2AB3N | 40.814588°, -124.184641° | 211,444 | 10,878 | TNW |
| | | **Estuarine Intertidal Subtotal[2]** | **226,415 (5.198 acres)** | **12,272 (2.324 miles)** | |
| | | **Non-Wetland Waters Total** | **226,415 (5.198 acres)** | **12,272 (2.324 miles)** | |

Sources: Cowardin et al. 1979; Federal Geographic Data Committee 2019

[1] Cowardin Codes:

Estuarine

| | |
|---|---|
| E2AB3N | Estuarine, Intertidal, Aquatic bed, Rooted Vascular, Regularly Flooded |
| E2US3N | Estuarine, Intertidal, Unconsolidated Shore, Mud, Regularly Flooded |

[2] Square footage presented in the table was rounded to the nearest whole number. Due to this the total acreage and square footage do not always match in the "Total" rows.

# Aquatic Resources Delineation Maps

# 2

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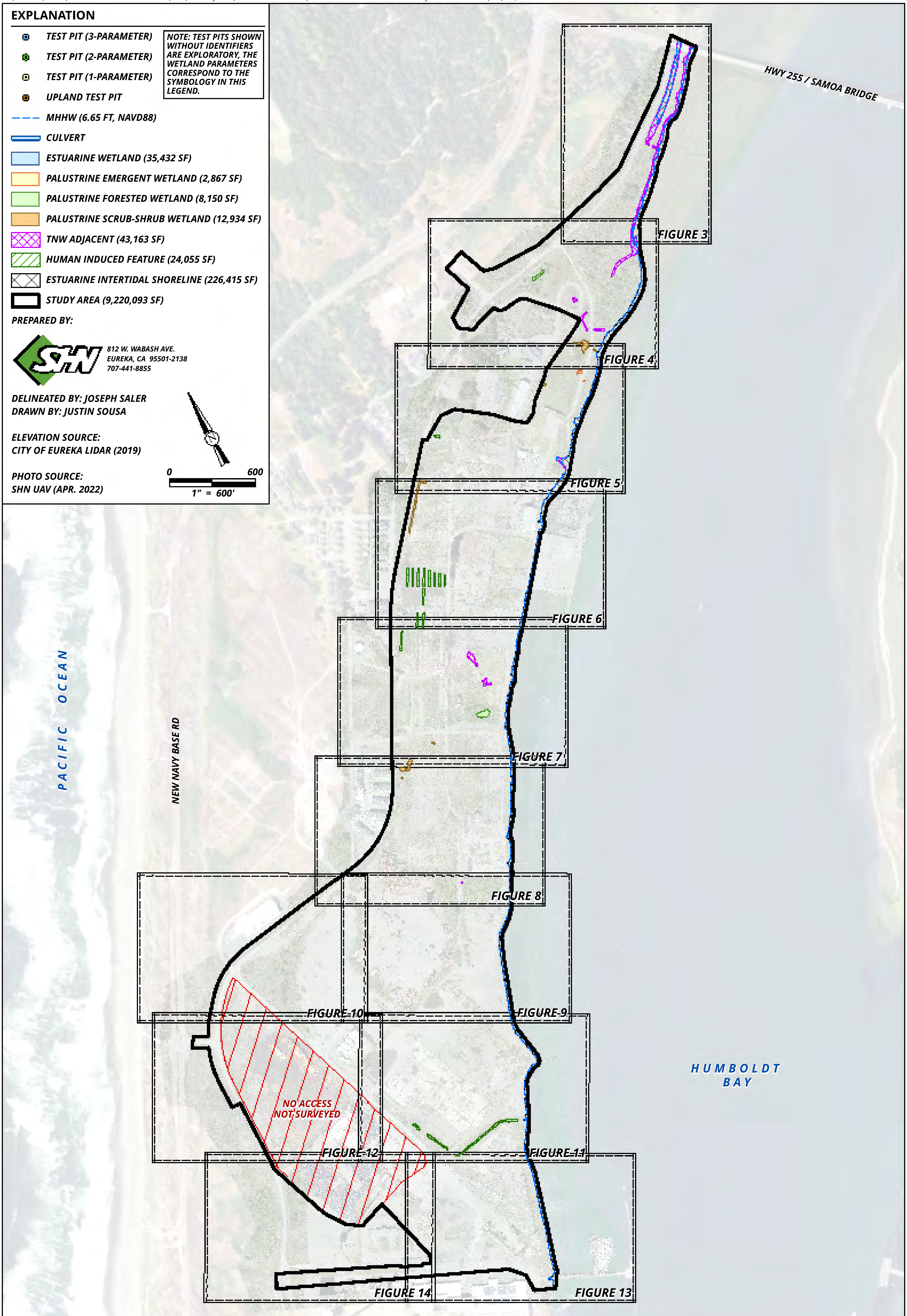
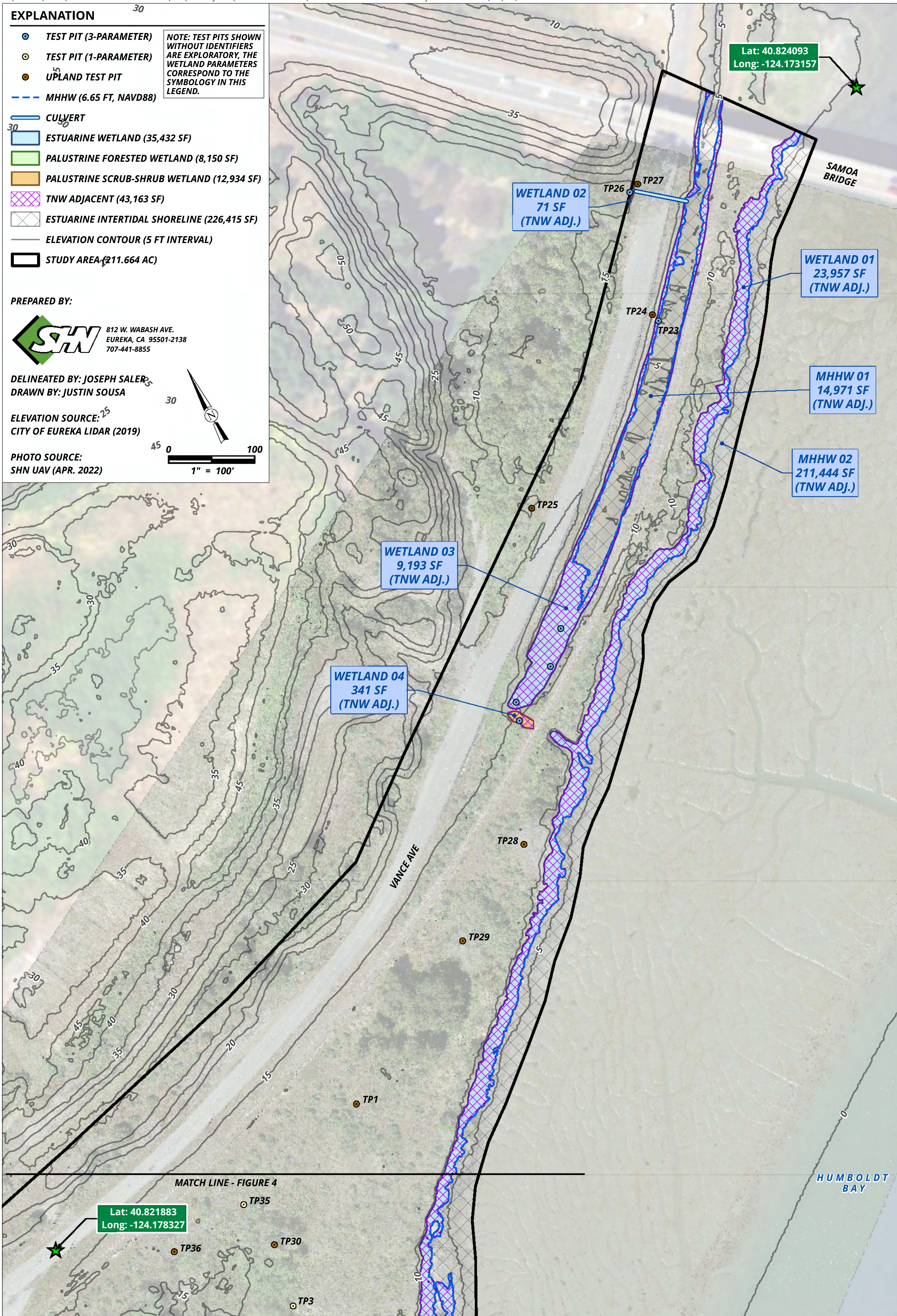


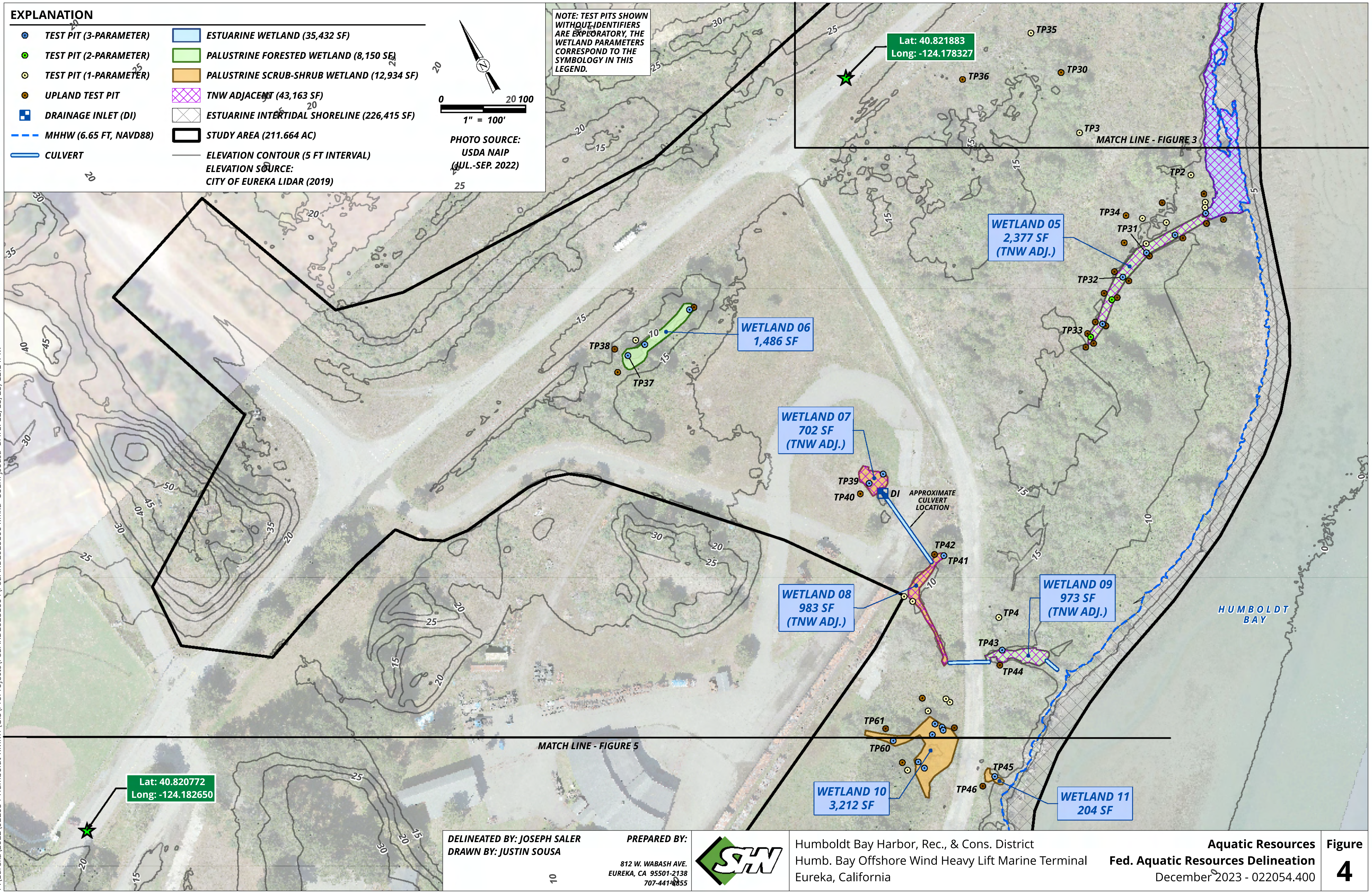

Humboldt Bay Harbor, Recreation, & Conservation District
Humboldt Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Sheet Index**
**Federal Aquatic Resources Delineation**
November 2023 - 022054.400

**Figure**
**2**




| | | |
|---|---|---|
| Humboldt Bay Harbor, Recreation, & Conservation District<br>Humboldt Bay Offshore Wind Heavy Lift Marine Terminal<br>Eureka, California | **Aquatic Resources**<br>**Federal Aquatic Resources Delineation**<br>November 2023 - 022054.400 | **Figure**<br>**3** |




DELINEATED BY: JOSEPH SALER
DRAWN BY: JUSTIN SOUSA

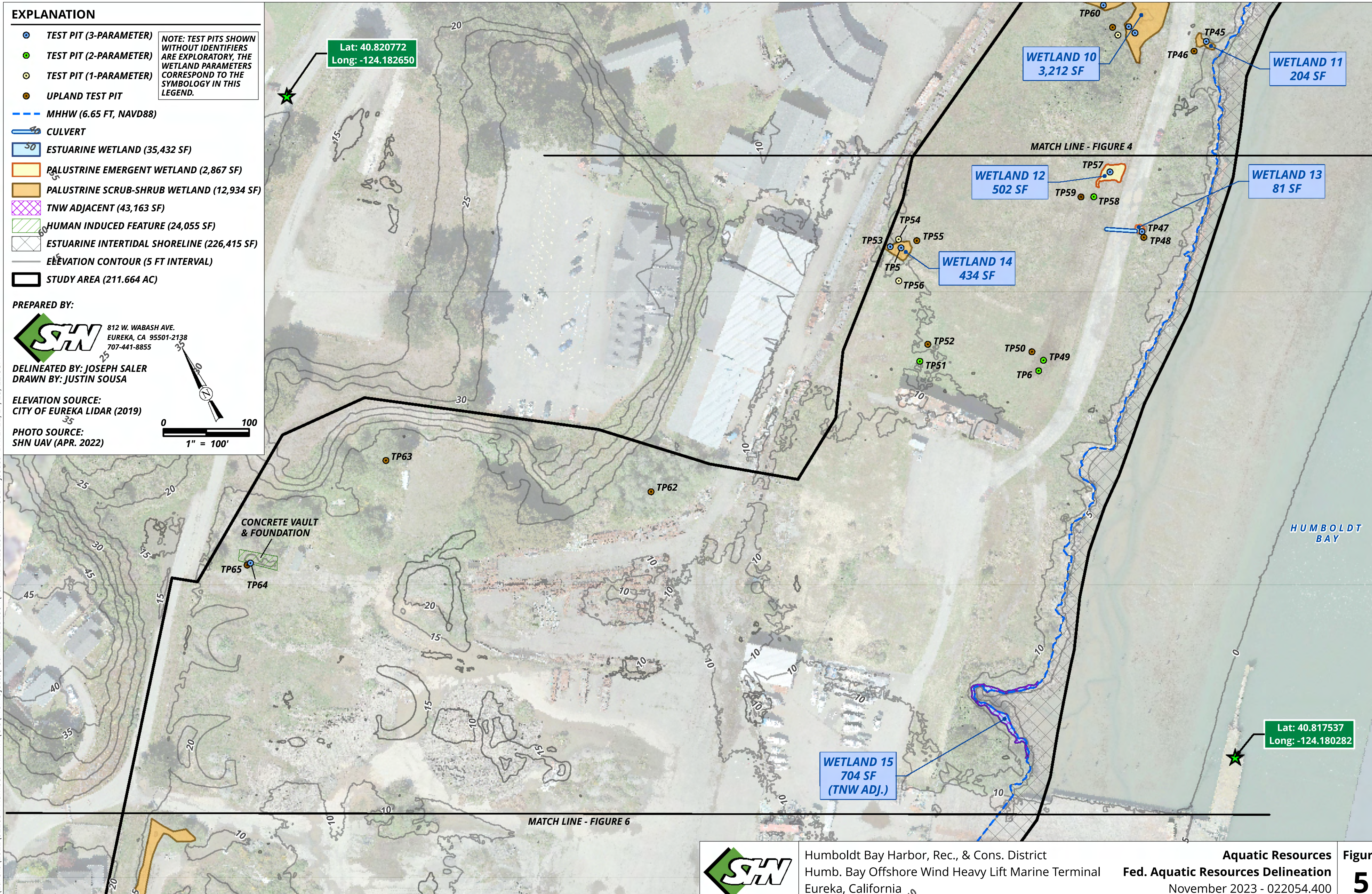
PREPARED BY:
812 W. WABASH AVE.
EUREKA, CA 95501-2138
707-441-8855

SHN

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
December 2023 - 022054.400

**Figure 4**




EXPLANATION

- TEST PIT (3-PARAMETER)
- TEST PIT (2-PARAMETER)
- TEST PIT (1-PARAMETER)
- UPLAND TEST PIT
- MHHW (6.65 FT, NAVD88)
- CULVERT
- ESTUARINE WETLAND (35,432 SF)
- PALUSTRINE EMERGENT WETLAND (2,867 SF)
- PALUSTRINE SCRUB-SHRUB WETLAND (12,934 SF)
- TNW ADJACENT (43,163 SF)
- HUMAN INDUCED FEATURE (24,055 SF)
- ESTUARINE INTERTIDAL SHORELINE (226,415 SF)
- ELEVATION CONTOUR (5 FT INTERVAL)
- STUDY AREA (211.664 AC)

NOTE: TEST PITS SHOWN WITHOUT IDENTIFIERS ARE EXPLORATORY, THE WETLAND PARAMETERS CORRESPOND TO THE SYMBOLOGY IN THIS LEGEND.

PREPARED BY:

812 W. WABASH AVE.
EUREKA, CA 95501-2138
707-441-8855

DELINEATED BY: JOSEPH SALER
DRAWN BY: JUSTIN SOUSA

ELEVATION SOURCE:
CITY OF EUREKA LIDAR (2019)

PHOTO SOURCE:
SHN UAV (APR. 2022)

0 100
1" = 100'

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
November 2023 - 022054.400

**Figure**
**5**

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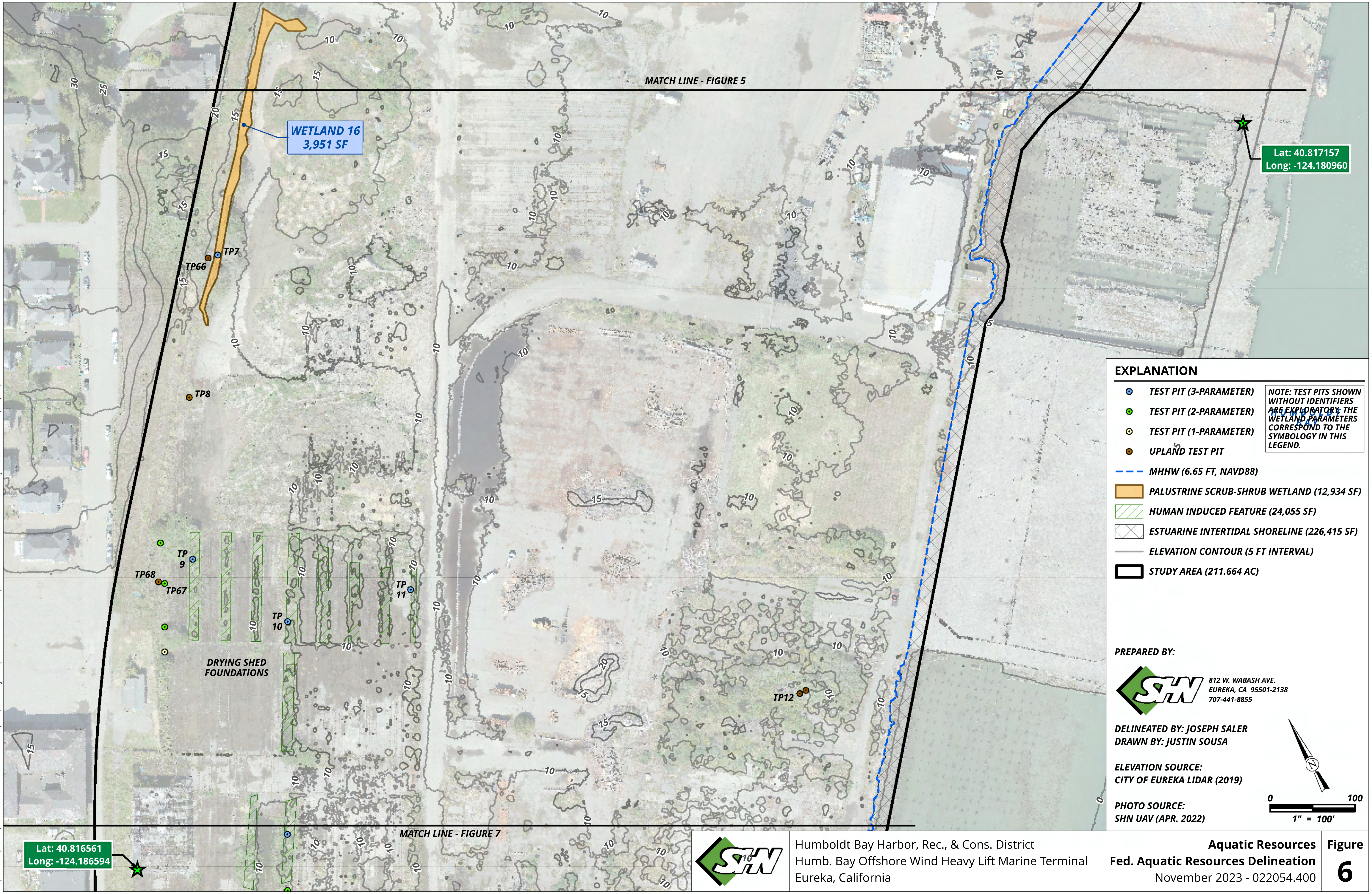


## EXPLANATION

- TEST PIT (3-PARAMETER)
- TEST PIT (2-PARAMETER)
- TEST PIT (1-PARAMETER)
- UPLAND TEST PIT
- MHHW (6.65 FT, NAVD88)
- PALUSTRINE SCRUB-SHRUB WETLAND (12,934 SF)
- HUMAN INDUCED FEATURE (24,055 SF)
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- ELEVATION CONTOUR (5 FT INTERVAL)
- STUDY AREA (211.664 AC)

NOTE: TEST PITS SHOWN WITHOUT IDENTIFIERS ARE EXPLORATORY. THE WETLAND PARAMETERS CORRESPOND TO THE SYMBOLOGY IN THIS LEGEND.

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EUREKA, CA 95501-2138
707-441-8855


DELINEATED BY: JOSEPH SALER
DRAWN BY: JUSTIN SOUSA

ELEVATION SOURCE:
CITY OF EUREKA LIDAR (2019)

PHOTO SOURCE:
SHN UAV (APR. 2022)

0 100
1" = 100'

SHN
Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
November 2023 - 022054.400

**Figure 6**

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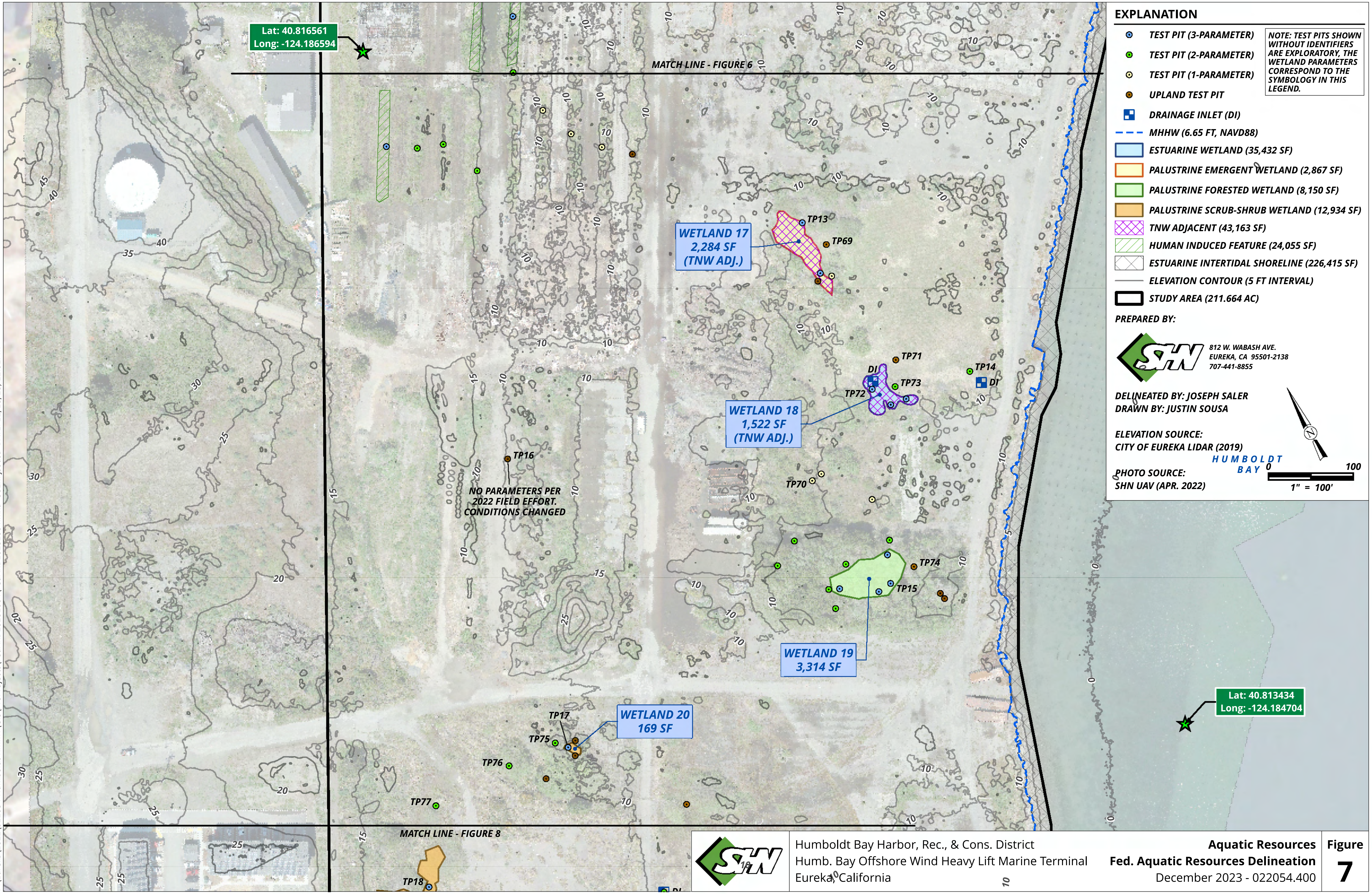


Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
December 2023 - 022054.400

**Figure**
**7**

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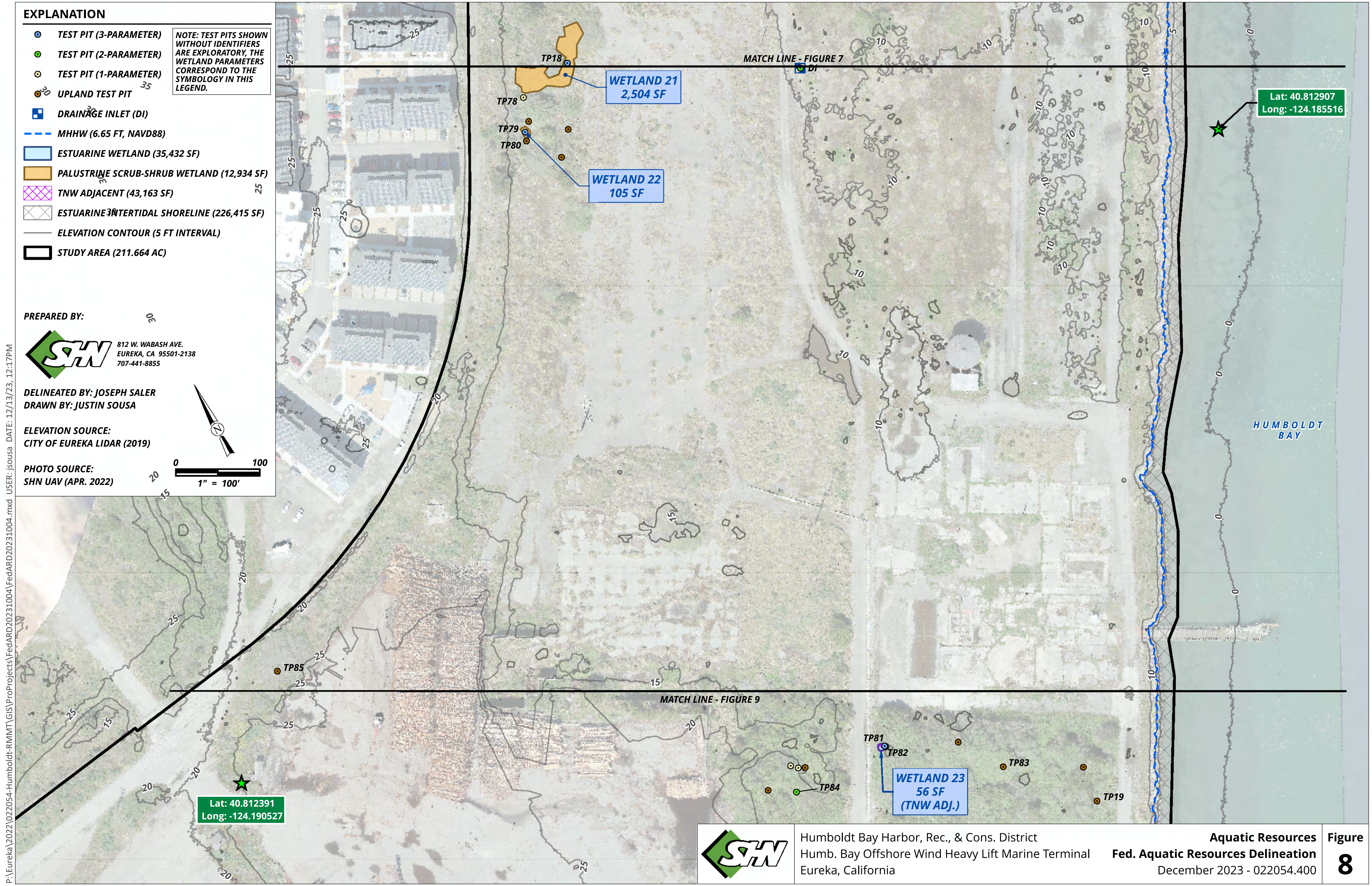
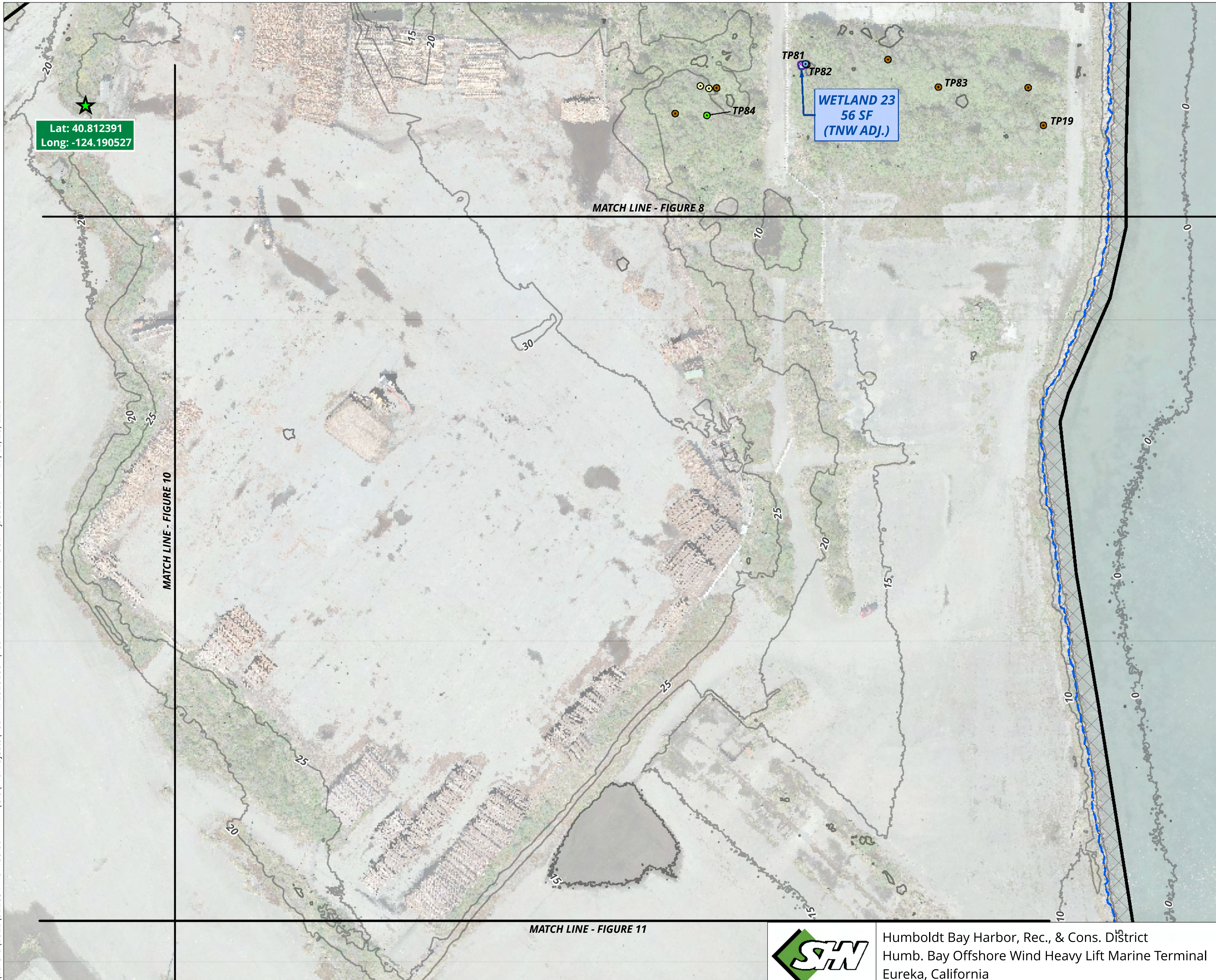



SHN

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
December 2023 - 022054.400

**Figure 8**




## EXPLANATION

- TEST PIT (3-PARAMETER)
- TEST PIT (2-PARAMETER)
- TEST PIT (1-PARAMETER)
- UPLAND TEST PIT
- DRAINAGE INLET (DI)
- MHHW (6.65 FT, NAVD88)
- ESTUARINE WETLAND (35,432 SF)
- TNW ADJACENT (43,163 SF)
- ESTUARINE INTERTIDAL SHORELINE (226,415 SF)
- ELEVATION CONTOUR (5 FT INTERVAL)
- STUDY AREA (211.664 AC)

NOTE: TEST PITS SHOWN WITHOUT IDENTIFIERS ARE EXPLORATORY, THE WETLAND PARAMETERS CORRESPOND TO THE SYMBOLOGY IN THIS LEGEND.

PREPARED BY: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EUREKA, CA 95501-2138
707-441-8855


DELINEATED BY: JOSEPH SALER
DRAWN BY: JUSTIN SOUSA

ELEVATION SOURCE:
CITY OF EUREKA LIDAR (2019)

PHOTO SOURCE:
SHN UAV (APR. 2022)

0 100
1" = 100'

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
December 2023 - 022054.400

**Figure**
**9**

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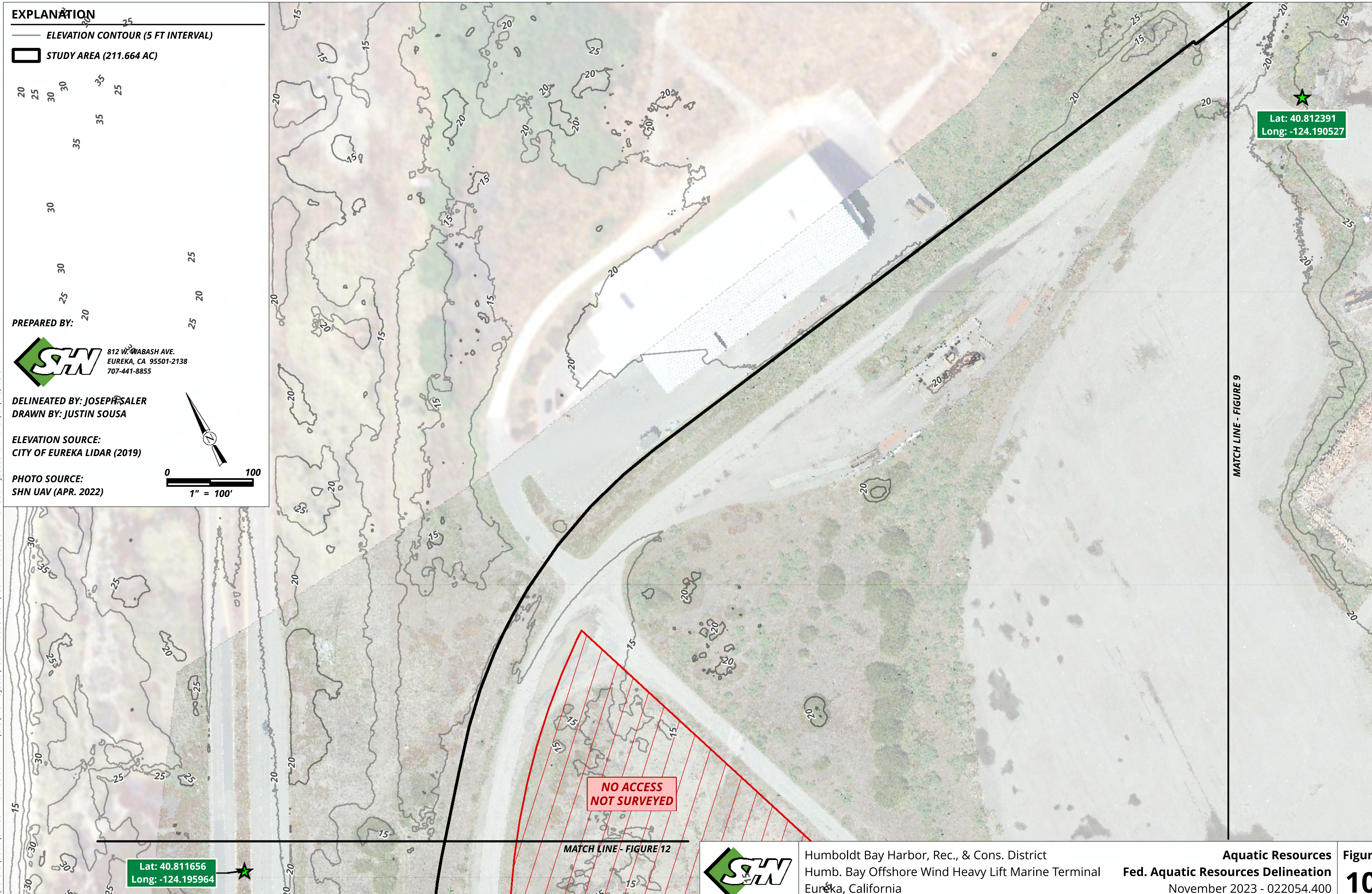
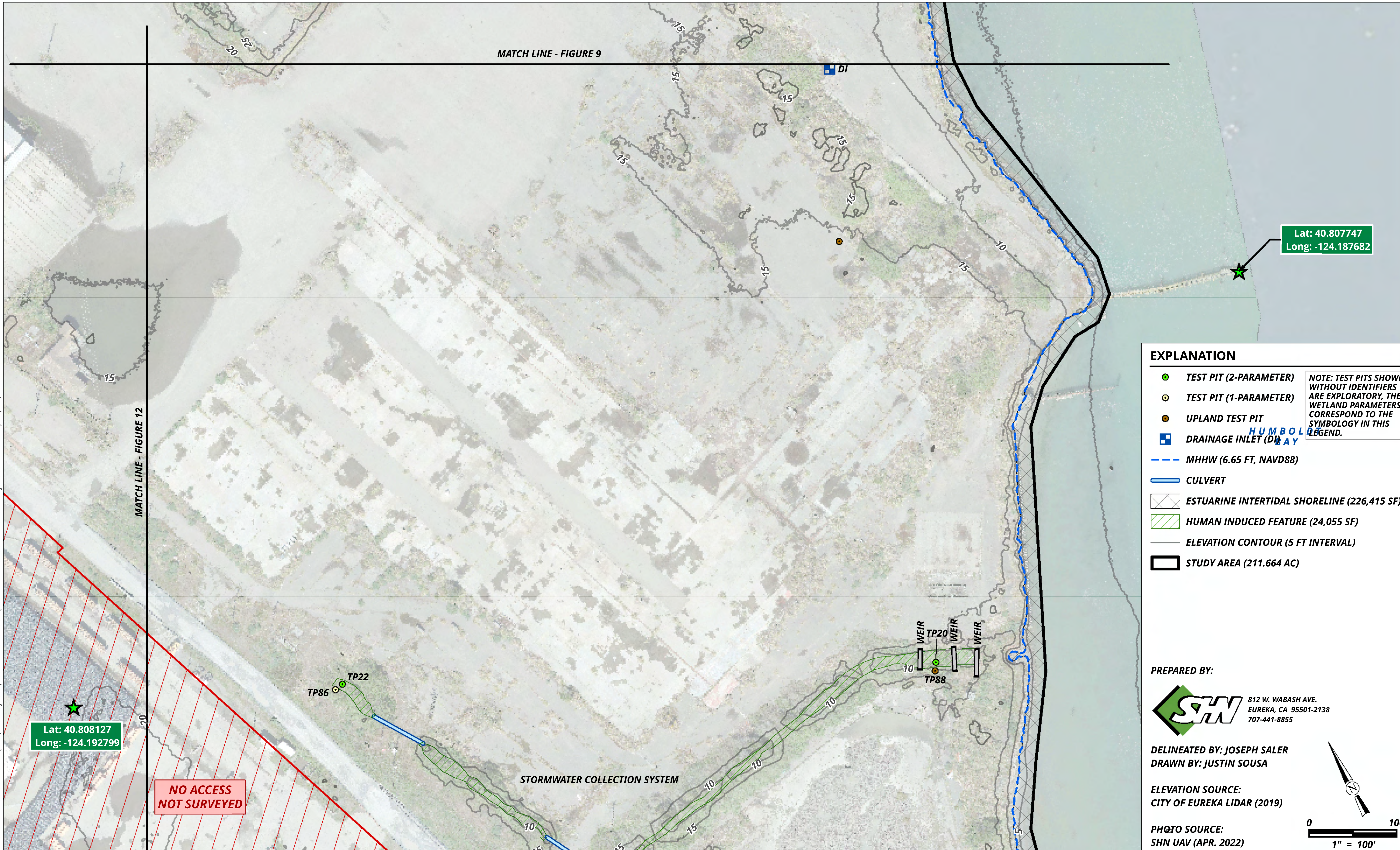



Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
November 2023 - 022054.400

**Figure 10**




Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
December 2023 - 022054.400

**Figure 11**

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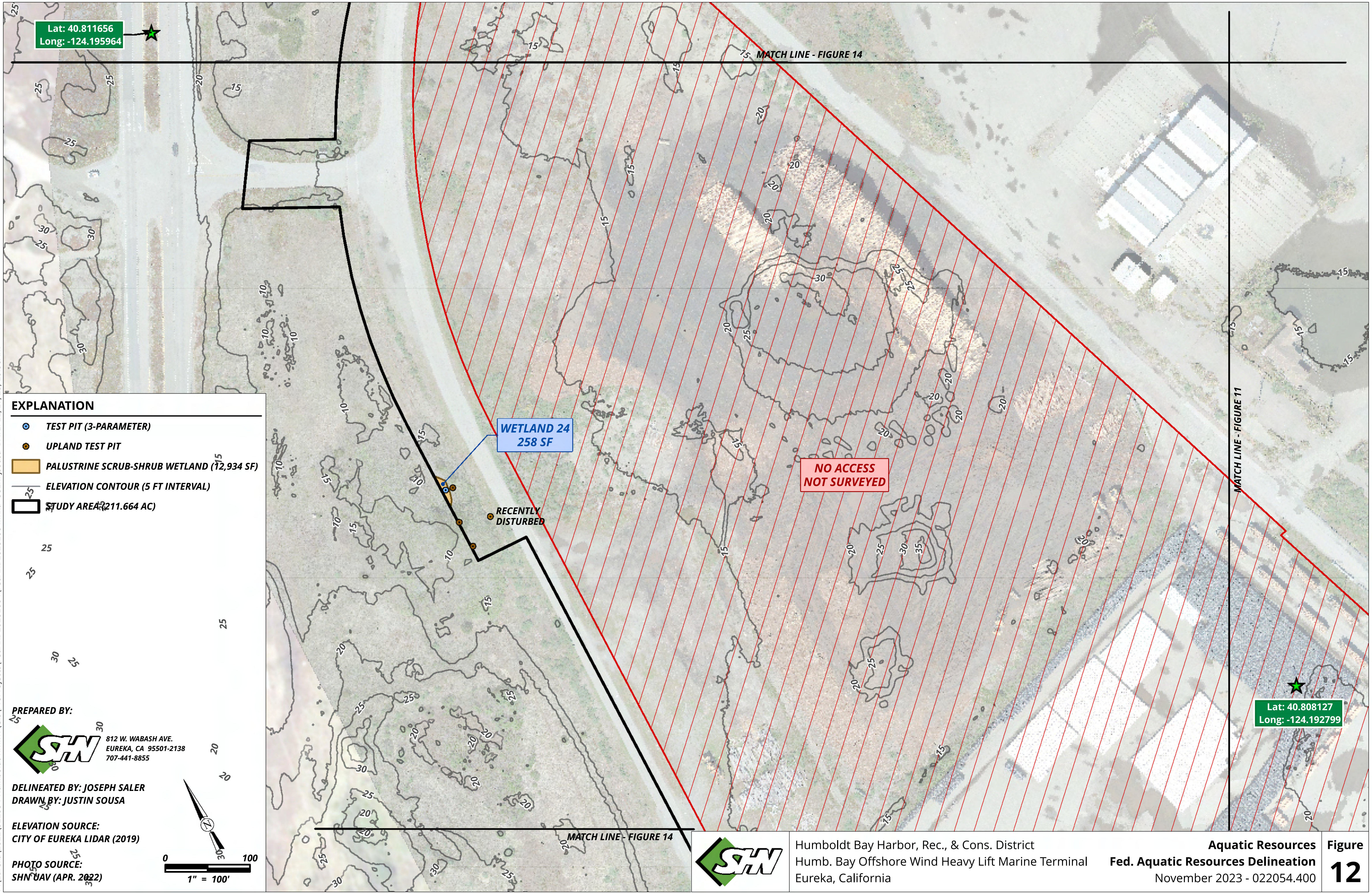


Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
November 2023 - 022054.400

**Figure**
**13**

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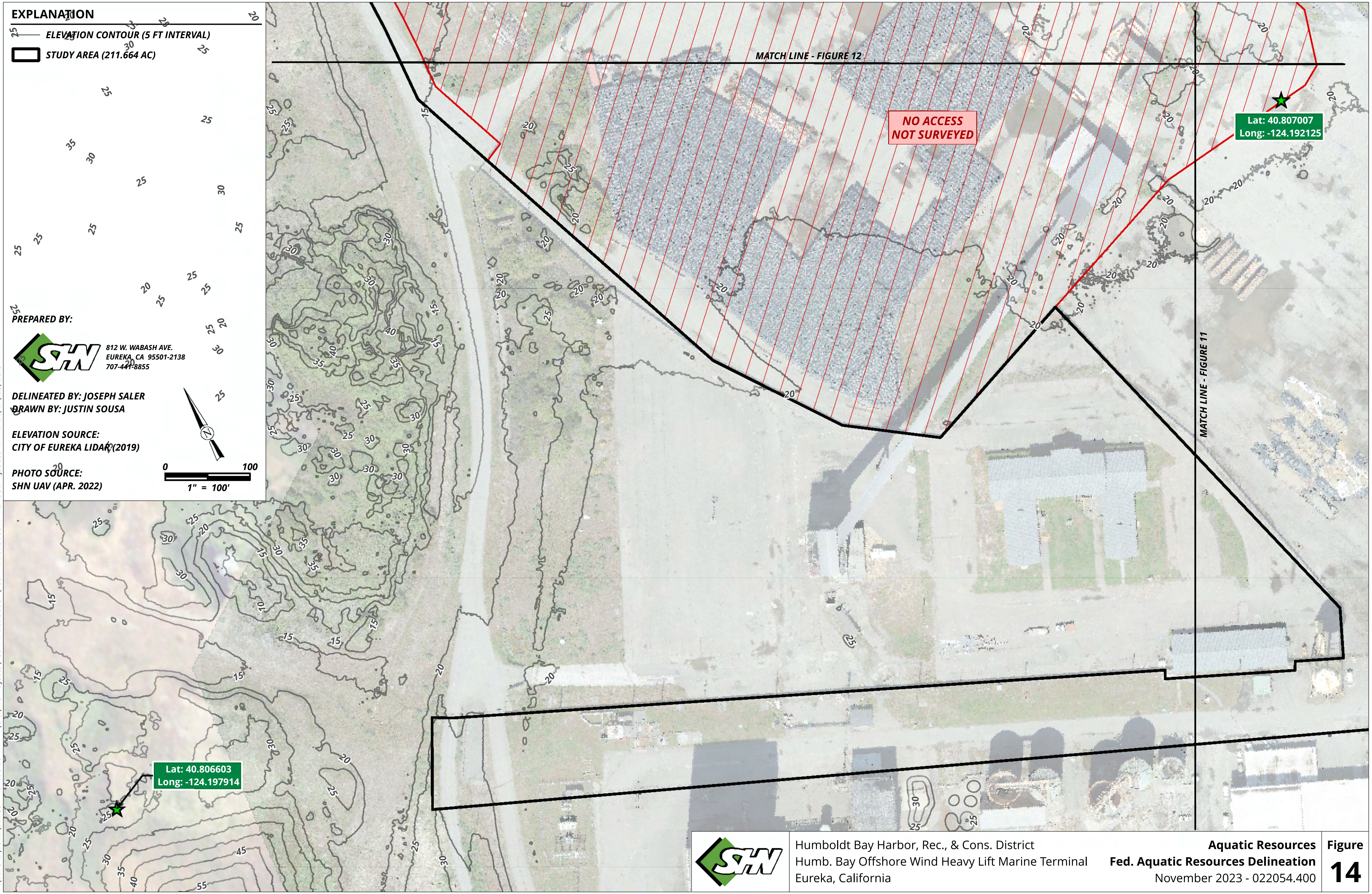


**EXPLANATION**

ELEVATION CONTOUR (5 FT INTERVAL)

STUDY AREA (211.664 AC)

PREPARED BY:

SHN
812 W. WABASH AVE.
EUREKA, CA 95501-2138
707-441-8855

DELINEATED BY: JOSEPH SALER
DRAWN BY: JUSTIN SOUSA

ELEVATION SOURCE:
CITY OF EUREKA LIDAR (2019)

PHOTO SOURCE:
SHN UAV (APR. 2022)

0 100
1" = 100'

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

**Aquatic Resources**
**Fed. Aquatic Resources Delineation**
November 2023 - 022054.400

**Figure**
**14**

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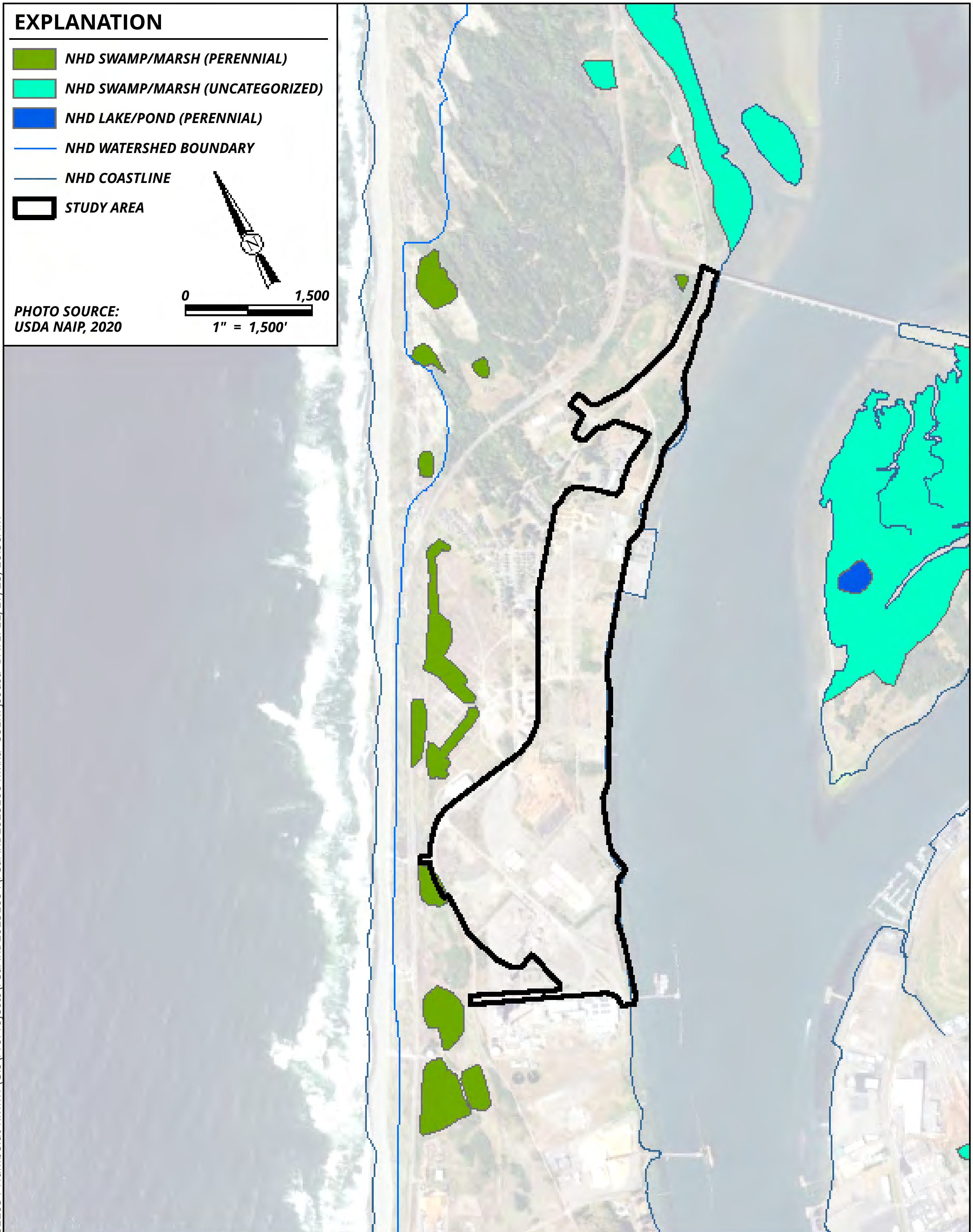
# National Hydrography Dataset, National Wetland Inventory, Soil, and Drought Monitoring Maps

# 3




Humboldt Bay Harbor, Rec., & Cons. District
H.B. Offshore Wind Hvy. Lift Marine Terminal
Eureka, California

**National Hydrography Dataset (NHD)**
**For HBOWHLMT and Surrounding Area**
November 2023 - 022054.400

**Figure**
**3-1**

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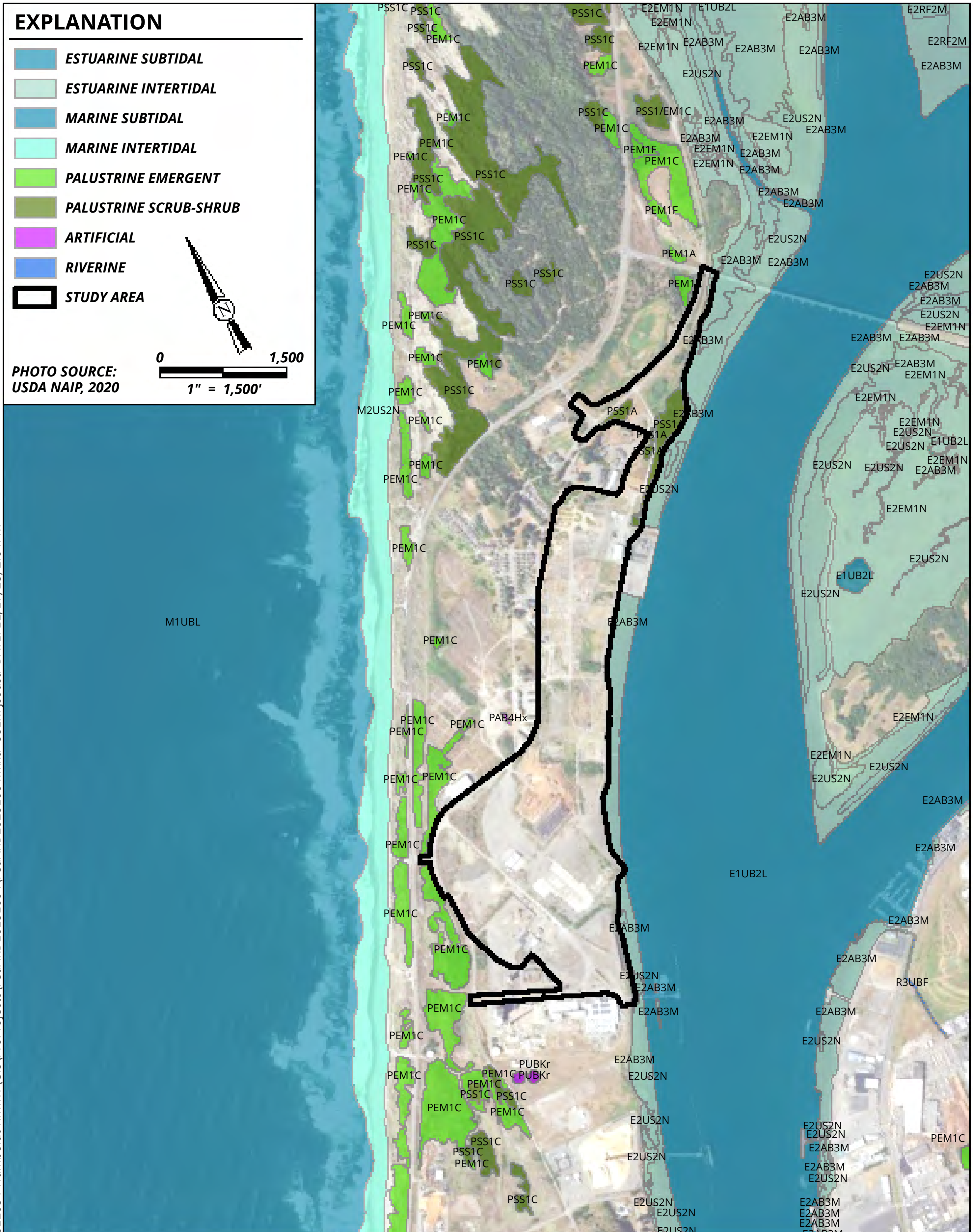


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| | | | |
|---|---|---|---|
| SHN | Humboldt Bay Harbor, Rec., & Cons. District<br>H.B. Offshore Wind Hvy. Lift Marine Terminal<br>Eureka, California | **National Wetlands Inventory (NWI)<br>For HBOWHLMT and Surrounding Area**<br>November 2023 - 022054.400 | **Figure<br>3-2** |

United States Department of Agriculture

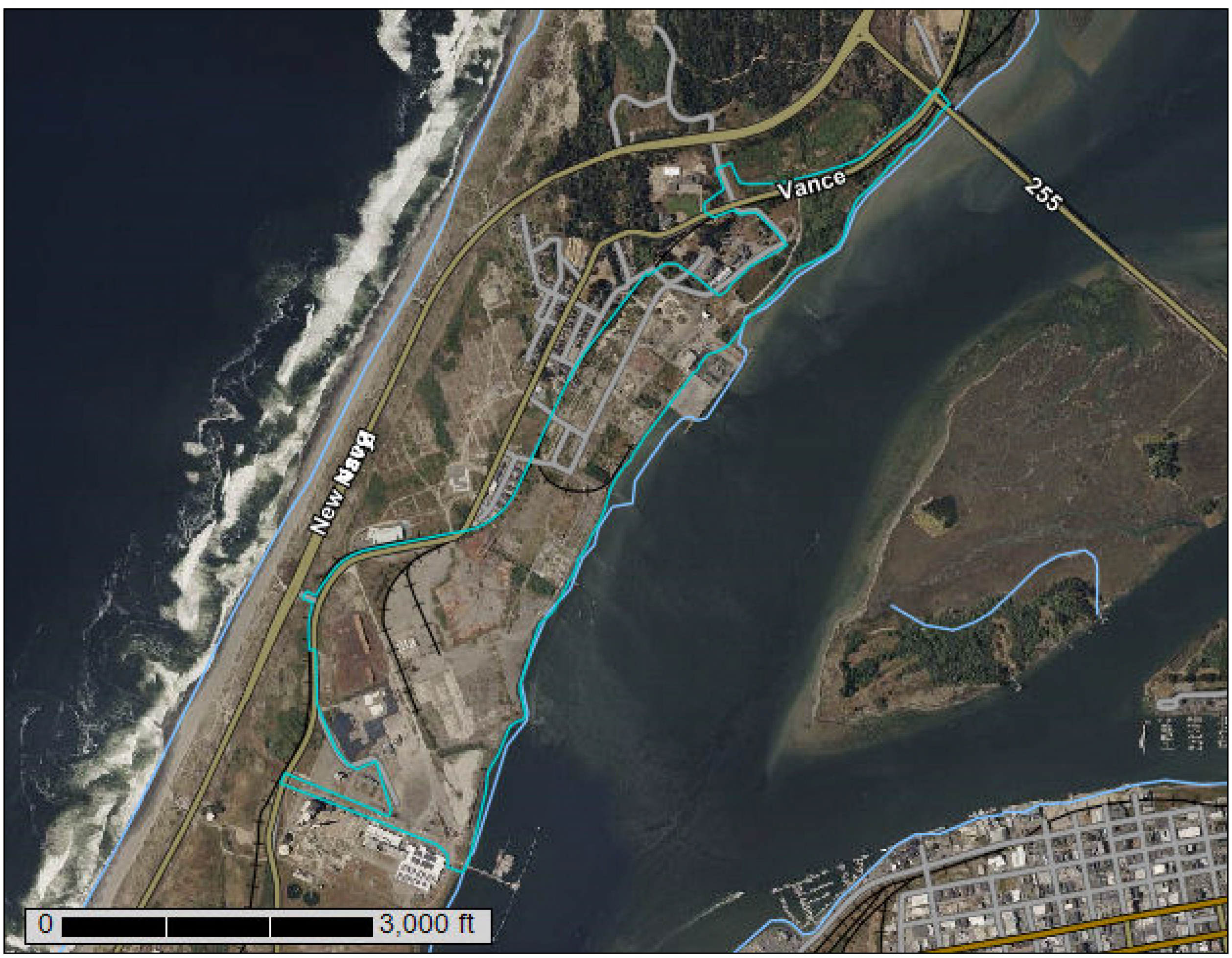
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Humboldt County, Central Part, California

## Humboldt RMMT Soils Report




September 18, 2023

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Contents

# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Soil Map


124° 11' 56" W
124° 10' 15" W
40° 49' 41" N
40° 48' 0" N
399000
399300
399600
399900
400200
400500
400800
401100
4520300
4520000
4519700
4519400
4519100
4518800
4518500
4518200
4517900
4517600
4517300
1008
1009
Vance Ave
DWM
1014
155
Vance
New Navy
101
Map Scale: 1:15,200 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 200 400 800 1200
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

**Special Point Features**

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

**Water Features**

Streams and Canals

**Transportation**

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 9, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 1, 2022—Jun 19, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 155 | Samoa-Clambeach complex, 0 to 50 percent slopes | 0.2 | 0.1% |
| 1008 | Hydraquents mucky silt loam, strongly saline, 0-1 percent slopes, very frequently flooded | 0.0 | 0.0% |
| 1009 | Hydraquents-Wassents mucky silt loam, strongly saline, 0-3 percent slopes, very frequently flooded | 2.5 | 1.2% |
| 1014 | Urban land-Anthraltic Xerorthents association, 0 to 2 percent slopes | 205.1 | 96.9% |
| DWM | Water, marine | 3.8 | 1.8% |
| **Totals for Area of Interest** | | **211.7** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Humboldt County, Central Part, California

## 155—Samoa-Clambeach complex, 0 to 50 percent slopes

### Map Unit Setting

*National map unit symbol:* hs2h
*Elevation:* 0 to 70 feet
*Mean annual precipitation:* 35 to 80 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 275 to 330 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Samoa and similar soils:* 65 percent
*Clambeach and similar soils:* 30 percent
*Minor components:* 5 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Samoa

#### Setting

*Landform:* Dunes
*Landform position (two-dimensional):* Summit, backslope, shoulder
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Convex, linear
*Across-slope shape:* Linear, convex
*Parent material:* Eolian and marine sand derived from mixed sources

#### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material
*A - 1 to 6 inches:* sand
*AC - 6 to 18 inches:* sand
*C - 18 to 63 inches:* sand

#### Properties and qualities

*Slope:* 2 to 50 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat excessively drained
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Low (about 3.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6e
*Hydrologic Soil Group:* A
*Ecological site:* F004BI100CA - Fluventic, salt-affected, rarely flooded, alluvial floodplains
*Hydric soil rating:* No

### Description of Clambeach

#### Setting

*Landform:* Deflation basins
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Concave, linear
*Across-slope shape:* Linear, concave
*Parent material:* Eolian and marine sand derived from mixed sources

#### Typical profile

*A - 0 to 9 inches:* sand
*Cg1 - 9 to 20 inches:* sand
*Cg2 - 20 to 63 inches:* sand

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)
*Depth to water table:* About 0 to 4 inches
*Frequency of flooding:* None
*Frequency of ponding:* Frequent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Low (about 3.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 5w
*Hydrologic Soil Group:* A/D
*Ecological site:* R004BA206CA - Deflation basins
*Hydric soil rating:* Yes

### Minor Components

#### Oxyaquic udipsamments, unvegetated

*Percent of map unit:* 5 percent
*Landform:* Beaches
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R004BA206CA - Deflation basins
*Hydric soil rating:* No

## 1008—Hydraquents mucky silt loam, strongly saline, 0-1 percent slopes, very frequently flooded

**Map Unit Setting**

*National map unit symbol:* 2t14z
*Elevation:* 0 to 10 feet
*Mean annual precipitation:* 35 to 80 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 275 to 365 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Hydraquents, high tidal, and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hydraquents, High Tidal**

**Setting**

*Landform:* Tidal marshes
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Mucky, silty, and clayey estuarine deposits

**Typical profile**

*Az - 0 to 13 inches:* mucky silt loam
*Cg1 - 13 to 37 inches:* mucky silty clay loam
*Cg2 - 37 to 51 inches:* mucky silty clay loam
*Cgse - 51 to 79 inches:* mucky silt loam

**Properties and qualities**

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* 0 inches to salic; 20 to 79 inches to sulfuric
*Drainage class:* Very poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 2.00 in/hr)
*Depth to water table:* About 0 to 16 inches
*Frequency of flooding:* Very frequent
*Frequency of ponding:* None
*Maximum salinity:* Strongly saline (30.0 to 80.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 75.0
*Available water supply, 0 to 60 inches:* Very low (about 0.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* C/D

*Ecological site:* R004BA205CA - Marshlands
*Hydric soil rating:* Yes

**Minor Components**

**Hydraquents, low tidal**
*Percent of map unit:* 10 percent
*Landform:* Channels
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

**Water, marine**
*Percent of map unit:* 5 percent
*Landform:* Channels

## 1009—Hydraquents-Wassents mucky silt loam, strongly saline, 0-3 percent slopes, very frequently flooded

**Map Unit Setting**
*National map unit symbol:* 2t150
*Elevation:* 0 to 10 feet
*Mean annual precipitation:* 35 to 80 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 275 to 365 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Hydraquents, low tidal, and similar soils:* 50 percent
*Wassents and similar soils:* 40 percent
*Minor components:* 10 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hydraquents, Low Tidal**

**Setting**
*Landform:* Tidal flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Mucky, silty, and clayey estuarine deposits

**Typical profile**
*Czg1 - 0 to 9 inches:* mucky silty clay loam
*Cg2 - 9 to 16 inches:* mucky silty clay loam
*Cg3 - 16 to 26 inches:* mucky silty clay loam
*Cg4 - 26 to 39 inches:* mucky silty clay loam
*Cg5 - 39 to 59 inches:* mucky silty clay loam

**Properties and qualities**

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* 0 inches to salic; 20 to 79 inches to sulfuric
*Drainage class:* Very poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately low (0.01 to 0.06 in/hr)
*Depth to water table:* About 0 inches
*Frequency of flooding:* Very frequent
*Frequency of ponding:* None
*Maximum salinity:* Strongly saline (30.0 to 80.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 75.0
*Available water supply, 0 to 60 inches:* Very low (about 0.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* D
*Ecological site:* R004BA205CA - Marshlands
*Hydric soil rating:* Yes

### Description of Wassents

**Setting**

*Landform:* Tidal flats
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Mucky, silty, and clayey estuarine deposits

**Typical profile**

*Asez - 0 to 6 inches:* mucky silt loam
*Cg1 - 6 to 14 inches:* mucky silty clay loam
*Cg2 - 14 to 31 inches:* mucky silty clay loam
*Cg3 - 31 to 59 inches:* mucky silty clay loam

**Properties and qualities**

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* 0 inches to salic; 0 inches to sulfuric
*Drainage class:* Subaqueous
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 2.00 in/hr)
*Depth to water table:* About 0 inches
*Frequency of flooding:* Very frequent
*Frequency of ponding:* Frequent
*Maximum salinity:* Strongly saline (30.0 to 80.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 75.0
*Available water supply, 0 to 60 inches:* Very low (about 0.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydrologic Soil Group:* D
*Ecological site:* R004BA205CA - Marshlands
*Hydric soil rating:* Yes

**Minor Components**

**Hydraquents, high tidal**

*Percent of map unit:* 5 percent
*Landform:* Tidal marshes
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

**Water, marine**

*Percent of map unit:* 5 percent
*Landform:* Channels

## 1014—Urban land-Anthraltic Xerorthents association, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* 2w91f
*Elevation:* 0 to 10 feet
*Mean annual precipitation:* 41 to 43 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 275 to 330 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Urban land, industrial:* 80 percent
*Anthraltic xerorthents and similar soils:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Urban Land, Industrial**

**Setting**

*Landform:* Fluviomarine terraces

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to water table:* About 24 inches
*Frequency of ponding:* Frequent

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydric soil rating:* No

**Description of Anthraltic Xerorthents**

**Setting**

*Landform:* Fluviomarine terraces

*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Coarse-loamy fluviomarine deposits and/or coarse-loamy dredge spoils

**Typical profile**

*A - 0 to 6 inches:* gravelly loamy fine sand
*^C1 - 6 to 13 inches:* sandy loam
*^C2 - 13 to 19 inches:* sandy loam
*^C3 - 19 to 24 inches:* sandy loam
*^C4 - 24 to 31 inches:* sandy loam
*^C5 - 31 to 43 inches:* gravelly sand
*C6 - 43 to 65 inches:* sand

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)
*Depth to water table:* About 0 to 6 inches
*Frequency of flooding:* None
*Frequency of ponding:* Frequent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Low (about 5.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3s
*Land capability classification (nonirrigated):* 3s
*Hydrologic Soil Group:* A/D
*Hydric soil rating:* No

## DWM—Water, marine

**Map Unit Setting**

*National map unit symbol:* 2t14y
*Elevation:* -50 to 0 feet
*Mean annual precipitation:* 35 to 80 inches
*Mean annual air temperature:* 50 to 55 degrees F
*Frost-free period:* 365 days

**Map Unit Composition**

*Water, marine:* 86 percent
*Minor components:* 14 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Water, Marine

**Setting**

*Landform:* Tidal inlets

### Minor Components

**Wassents**

*Percent of map unit:* 14 percent
*Landform:* Shoals
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

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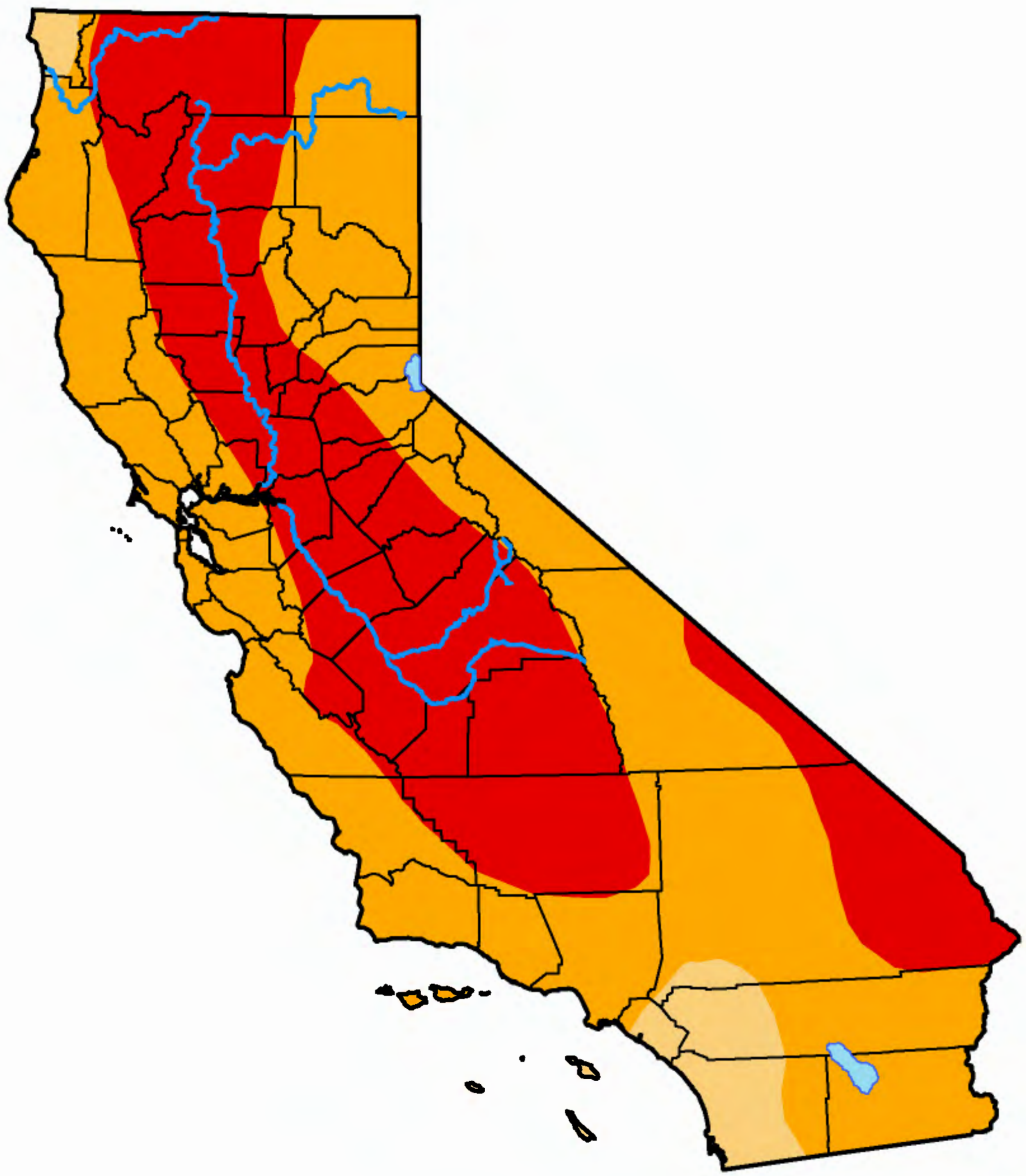
# U.S. Drought Monitor
# California

**April 26, 2022**
*(Released Thursday, Apr. 28, 2022)*
**Valid 8 a.m. EDT**



*Intensity:*

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx*

*Author:*
Brad Rippey
U.S. Department of Agriculture

**droughtmonitor.unl.edu**

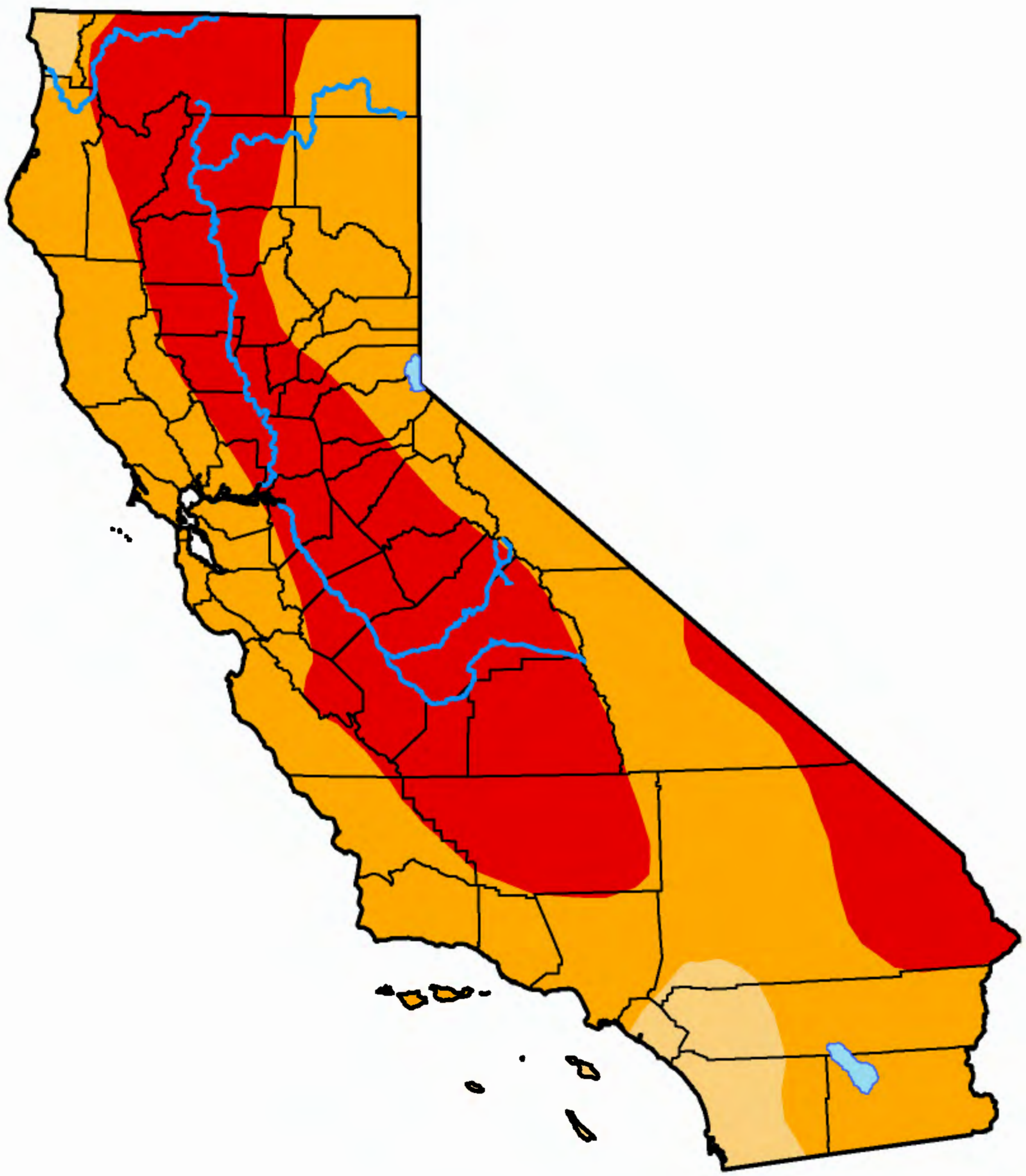
*U.S. Drought Monitor*

# California

**May 3, 2022**

***(Released Thursday, May. 5, 2022)***

**Valid 8 a.m. EDT**



*Intensity:*

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx*

*Author:*

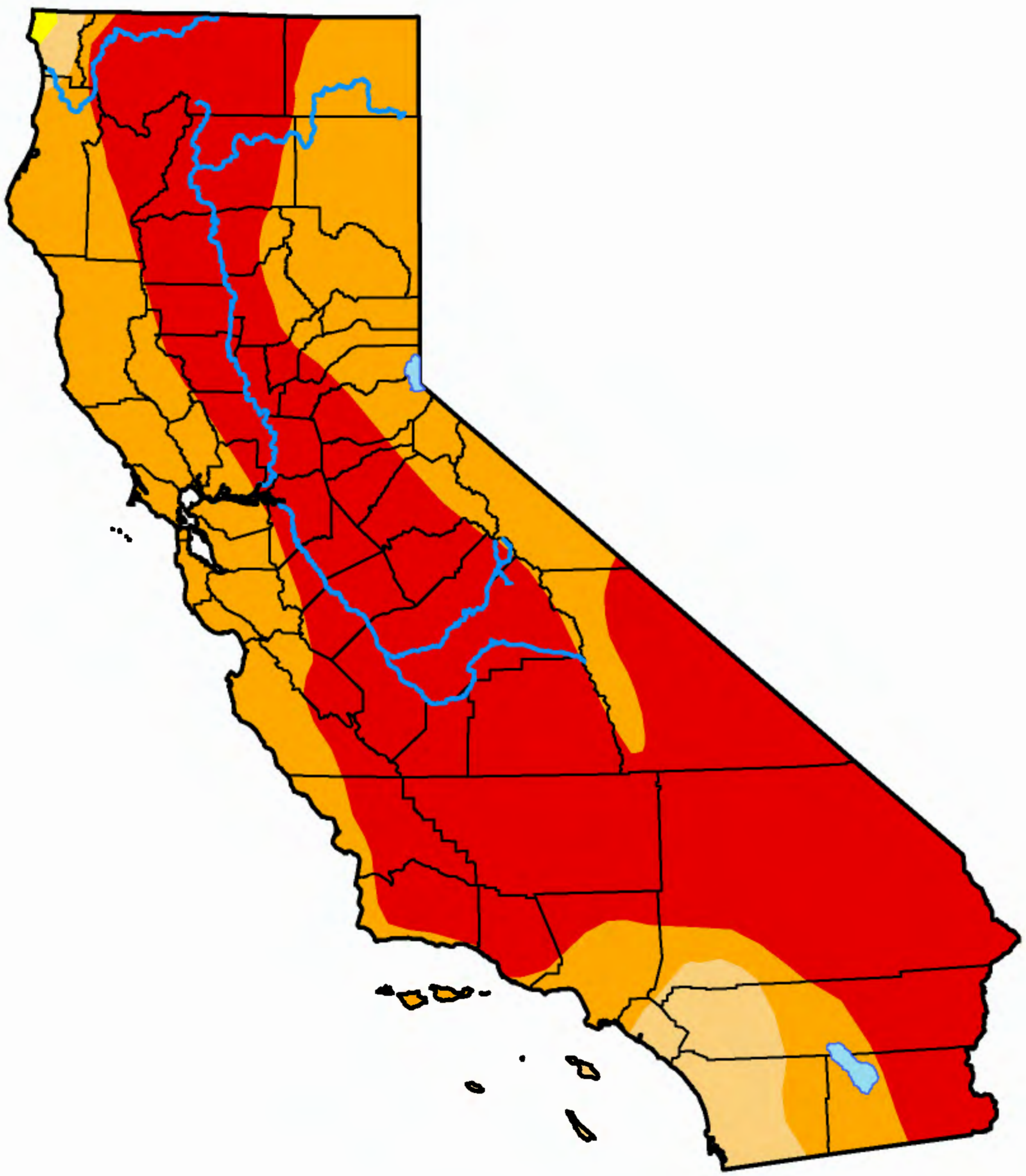
David Simeral

Western Regional Climate Center

**droughtmonitor.unl.edu**

# *U.S. Drought Monitor*
# California

## May 10, 2022
*(Released Thursday, May. 12, 2022)*
**Valid 8 a.m. EDT**



*Intensity:*

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx*

*Author:*
David Simeral
Western Regional Climate Center

**droughtmonitor.unl.edu**

# Wetland Determination Data Forms

# 4

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Humboldt Sampling Date: 8/5/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 1

Investigator(s): J. Saler, S. Polly Section, Township, Range: Secs. 15, 16+21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): A, MLRA-4B Lat: 40.821879 Long: -124.176923° Datum: WGS84

Soil Map Unit Name: 1014 - Urban Land-Anthraltic Xerorthents assn. 0-2 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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS data drier than normal

### 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: 5ft) | | | |
| 1. Rubus ursinus | 11 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | 11 | | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Anthoxanthum odoratum | 82 | ✓ | FACU |
| 2. Holcus lanatus | 8 | | FAC |
| 3. Achillea millefolium | 3 | | FACU |
| 4. Plantago lanceolata | 1 | | FACU |
| 5. Cirsium vulgare | 3 | | FACU |
| 6. Daucus carota | 1 | | FACU |
| 7. Lotus corniculatus | 1 | | FAC |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 98% | 49 / 19.6 | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 2%*

Remarks: Litter

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

## SOIL

Sampling Point: TP 1

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 2/2 | 100 | | | | | SL | |
| 6-12 | 2.5Y 3/1 | 60 | 2.5Y 3/3 | 40 | C | M | LS | |
| 12-15 | 2.5Y 3/1 | 50 | 2.5Y 3/3 | 50 | C | M | LS | |
| 15-23 | 2.5 N/ | 90 | 2.5YR 2.5/4 | 10 | C | PL | VGr LS | |
| 23-24+ | 10YR 3/3 | 60 | 10YR 4/1 | 30 | D | M | LS | |
| | | | 2.5Y 2.5/1 | 10 | C | M | | |

[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)
- __ 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) **(except MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X

Remarks:

## 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)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) **(LRR A)**
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) **(LRR A)**
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Humboldt Sampling Date: 8/5/20

Applicant/Owner: Humboldt Bay Harbor district State: CA Sampling Point: TP 2

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA 4B Lat: 40.821110° Long: -124.177423°* Datum: WGS84

Soil Map Unit Name: 1014- Urban Land-Anthraltic Xerorthents Assn. 0-2% NWI classification: PSS1C

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 X No ____ | | |
| Hydric Soil Present? Yes ____ No X | **Is the Sampled Area within a Wetland?** | **Yes** ____ **No** X |
| Wetland Hydrology Present? Yes ____ No X | | |

Remarks: WETS data drier than normal
* 2022 updated gps equipment 40.821107°/-124.177106

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 50 | ✓ | FACW |
| 2. Salix lasiandra | 50 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 100% | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5ft)** | | | |
| 1. Rubus armeniacus | 60 | ✓ | FAC |
| 2. Rubus ursinus | 10 | | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 70 | = Total Cover | 35 14 |
| **Herb Stratum (Plot size: 5ft)** | | | |
| 1. Carex obnupta | 20 | ✓ | OBL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 20% | = Total Cover | |
| **Woody Vine Stratum (Plot size: ____)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 80%* | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: * Litter

## SOIL

Sampling Point: TP2

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-9 | 10YR 2/1 | 100 | — | — | — | — | SL | |
| 9-11 | 10YR 3/1 | 100 | — | — | — | — | LS | |
| 11-20+ | 10YR 2/1 | 95 | 7.5YR 2.5/3 | 5 | C | PL | VGrLS | Very Compacted |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Humboldt Sampling Date: 8/5/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 3

Investigator(s): Joseph Saler / Sam Polly Section, Township, Range: Secs. 15, 16+21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA 4B Lat: 40.821389° Long: -124.177534° Datum: WGS84

Soil Map Unit Name: 1014 - Urban Land - Anthraltic Xerorthents Assn. 0-2 % 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 X No ___ | | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? Yes ___ No X | | |
| Wetland Hydrology Present? Yes ___ No X | | |

Remarks: Phalaris dominates a large area around the TP with similar conditions
WETS data drier than normal

### 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: 5ft) | | | |
| 1. Rubus armeniacus | 7 | ✓ | FAC |
| 2. Rubus ursinus | 5 | ✓ | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 12 | = Total Cover | 6 / 2.4 |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Phalaris arundinacea | 100 | ✓ | FACW |
| 2. Vicia ~~tetra~~sperma | 5 | | NL |
| 3. Galium aparine | 2 | | FACU |
| 4. Anthoxanthum odoratum | 3 | | FACU |
| 5. Holcus lanatus | 2 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 112 | = Total Cover | 106 / 22.4 |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum Ø | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 % (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:

## SOIL

Sampling Point: TP3

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-13 | 10YR 2/2 | 100 | — | — | — | — | SL | |
| 13-21 | 2.5Y 3/2 | 60 | 2.5Y 4/4 | 35 | C | M | LS | |
| — | — | — | 10YR 2/1 | 5 | C | M | — | |
| 21-25+ | N2.5/ | 85 | 2.5Y 4/4 | 10 | C | M | LS | fill with Mixed debris |
| | | | 2.5Y 3/2 | 5 | D | M | | + Wood |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ____ No X

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Humboldt Sampling Date: 8-5-20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 4

Investigator(s): J. Saler, S. Polly Section, Township, Range: Sec. 15, 16+21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): A, MLRA-4B Lat: 40.820092 Long: -124.178753 Datum: WGS 84

Soil Map Unit Name: 1014- Urban Land- Anthraltic Xerorthents Assn. 0-2% NWI classification: PSS1C

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 X No ___ | | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? Yes ___ No X | | |
| Wetland Hydrology Present? Yes ___ No X | | |

Remarks: WETS data drier than normal

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Frangula purshiana | 6 | | FAC |
| 2. Morella californica | 23 | ✓ | FACW |
| 3. Salix hookeriana | 12 | | FACW |
| 4. Salix lasiandra var. lasiandra | 60 | ✓ | FACW |
| | 101 | = Total Cover | 50.5 / 20.2 |
| **Sapling/Shrub Stratum** (Plot size: 5ft) | | | |
| 1. Rubus armeniacus | 8 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 8 | = Total Cover | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Cortaderia jubata | 4 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 4 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: 5ft) | | | |
| 1. Hedera helix | 10 | ✓ | FACU |
| 2. | | | |
| | 10 | = Total Cover | |

% Bare Ground in Herb Stratum 96%

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:

## SOIL

Sampling Point: TP4

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 7.5YR2.5/1 | 100 | — | — | — | — | O | Organic Matter |
| 4-7 | 10YR 2/1 | 100 | — | — | — | — | SL | |
| 7-17 | 10YR 2/1 | 100 | — | — | — | — | VGrSL | Shell, concrete, debris present |
| 17-24+ | 10YR3/2 | 100 | — | — | — | — | O | Decomposing Wood |

[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)
- __ 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) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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** X

Remarks:

Soils are hydrophobic

## 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)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** **Yes** ______ **No** X

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa, Humboldt Sampling Date: 4/30/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 5

Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: Sec. 15, 16+21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Coastal fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819423° Long: -124.180709° * Datum: WGS 84

Soil Map Unit Name: 1014-Urban Land-Anthraltic Xerorthents Assn. 0-2% 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 X No ____ | Is the Sampled Area within a Wetland? Yes X No ____ |
| Hydric Soil Present? | Yes X No ____ | |
| Wetland Hydrology Present? | Yes X No ____ | |

Remarks: WETS data drier than normal
* 2022 updated gps equipment = 40.819471°/-124.180605°

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 25 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 25 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5 ft)** | | | |
| 1. Rubus armeniacus | 10 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 10 | = Total Cover | |
| **Herb Stratum (Plot size: 5 ft)** | | | |
| 1. Potentilla anserina | 15 | | OBL |
| 2. Lotus corniculatus | 40 | ✓ | FAC |
| 3. Anthoxanthum odoratum | 8 | | FACU |
| 4. Trifolium repens | 30 | ✓ | FAC |
| 5. Ranunculus repens | 1 | | FAC |
| 6. Festuca arundinacea | 2 | | FAC |
| 7. Holcus lanatus | 1 | | FAC |
| 8. Symphyotrichum chilense | 4 | | FAC |
| 9. Eleocharis macrostachya | 1 | | * NL (OBL) |
| 10. Agrostis stolonifera | 5 | | FAC |
| 11. Triglochin maritimum | 1 | | OBL |
| | 107 | = Total Cover | 53.5 / 21.4 |
| **Woody Vine Stratum (Plot size: ____)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum Ø

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: * Eleocharis macrostachya is not listed in USACE manual; however, obs. of this species in the Northcoast region suggest FACW or OBL designation & is treated as such.

## SOIL

Sampling Point: TP5

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 2/1 | 100 | — | — | — | — | MuS | |
| 5-16 | 10Y 2.5/1 | 85 | 7.5YR 2.5/2 | 10 | C | PL | LS | |
| → | — | — | 10YR 3/1 | 5 | C | M | — | |
| 16+ | Rock | — | — | — | — | — | Rock | Rock + Brick |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0-5 in

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

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa, Humboldt Sampling Date: 4/30/20
Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 6
Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16, + 21, T5N, R1W, HBM
Landform (hillslope, terrace, etc.): Coastal fill Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): A, MLRA 4B Lat: 40.818893° Long: -124.180425° Datum: WGS 84
Soil Map Unit Name: 1014- Urban Land - Anthraltic Xerorthents Assn. 0-2% 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 X, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X
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 X No ___ | Is the Sampled Area within a Wetland? Yes ___ No X * Meets CCC wetland definition |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes X No ___ | |

Remarks: Compacted industrial site. Heavily manipulated. Mowed. Woody debris and river run gravel. Asphalt under 4 inches of soil/fill. WETS data drier than normal

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Mentha pulegium | 25 | ✓ | OBL |
| 2. Festuca perennis | 25 | ✓ | FAC |
| 3. Rumex crispus | 3 | | FAC |
| 4. Cyperus eragrostis | 2 | | FACW |
| 5. Plantago lanceolata | 2 | | FACU |
| 6. Briza maxima | 5 | | NL |
| 7. Geranium dissectum | 1 | | NL |
| 8. Trifolium subterraneum | 6 | | NL |
| 9. Linum bienne | 1 | | NL |
| 10. Isolepis cernua | 3 | | OBL |
| 11. Lotus corniculatus | 2 | | FAC |
| = Total Cover | 75 | 37.5 / 15 | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 30%

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:

## SOIL

Sampling Point: TP 6

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-15 | 10YR 2/1 | 100 | — | — | — | — | VGr(60) | See below |
| 15-17+ | 10YR 4/1 | 100 | — | — | — | — | Rock | River run cobble + Brick |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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** X

Remarks:
Decomposed wood material likely log deck.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): ______

Water Table Present? Yes ______ No X Depth (inches): ______

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

**Wetland Hydrology Present?** **Yes** X **No** ______

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: PMT 1 City/County: Samoa / Humboldt Sampling Date: 5/28/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 7

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16, + 21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.818232 Long: -124.185142 Datum: WGS84

Soil Map Unit Name: 014-Urban Land-Anthraltic Xerorthents Assn. 0-2% 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 X No ____ | Is the Sampled Area within a Wetland? | Yes X No ____ |
| Hydric Soil Present? Yes X No ____ | | |
| Wetland Hydrology Present? Yes X No ____ | | |

Remarks: Wetland conditions have formed in an excavated swale. Best described as PSS1CxOg. Aboveground connectivity possible over asphalt and into DI.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix lasiandra var lasiandra | 50 | ✓ | FACW |
| 2. Salix sitchensis | 50 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 100 | = Total Cover | 50 / 20 |
| **Sapling/Shrub Stratum (Plot size: 5ft)** | | | |
| 1. Rubus armeniacus | 15 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15 | = Total Cover | |
| **Herb Stratum (Plot size: 5ft)** | | | |
| 1. Scirpus microcarpus | 20 | ✓ | OBL |
| 2. Equisetum arvense | 1 | | FAC |
| 3. Ranunculus repens | 8 | | FAC |
| 4. Cortaderia jubata | 15 | ✓ | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 44 | = Total Cover | 22 / 8.8 |
| **Woody Vine Stratum (Plot size: ____)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 56% * | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: * Litter

## SOIL

Sampling Point: TP 7

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10 YR2/2 | 100 | | | | | mS | Closer to 10YR 2/1.5 |
| 4-24+ | 10 Y2.5/1 | 97 | 2.5Y2.5/1 | 3 | RM | PL | S | |

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- X Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- X Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 9in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa / Humboldt Sampling Date: 5/28/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP8

Investigator(s): Joseph Saler / Sam Polly Section, Township, Range: Secs. 15, 16+21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside industrial fill Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR): A, MLRA-4B Lat: 40.817876 Long: -124.185509 Datum: WGS 84

Soil Map Unit Name: 1014 - Urban Land - Anthraltic Xerorthents Assn. 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | |
| Wetland Hydrology Present? | Yes ____ No X | |

Remarks: former industrial area, at edge of pacment east of Railroad bed.

### 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: 5ft) | | | |
| 1. Rubus armeniacus | 10 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 10 | = Total Cover | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Anthoxanthum odoratum | 50 | ✓ | FACU |
| 2. Briza maxima | 10 | | NL |
| 3. Bromus hordeaceus | 1 | | FACU |
| 4. Holcus lanatus | 10 | | FAC |
| 5. Juncus effusus | 2 | | FACW |
| 6. Cortaderia jubata | 15 | | FACU |
| 7. Trifolium repens | 1 | | FAC |
| 8. Lotus corniculatus | 3 | | FAC |
| 9. Equisetum laevigatum | 1 | | FACW |
| 10. Vicia sativa | 5 | | UPL |
| 11. | | | |
| | 98 | = Total Cover | 49 / 19.6 |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 2% | | | |

**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 | ____ | x 3 = ____ |
| FACU species | ____ | x 4 = ____ |
| UPL species | ____ | x 5 = ____ |
| Column Totals: | ____ (A) | ____ (B) |

Prevalence Index = B/A = ____

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks:

## SOIL

Sampling Point: TP 8

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-24+ | 5Y2.5/2 | 100 | — | — | — | — | LS | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Humboldt Sampling Date: 05/28/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP9

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR): A, MLRA 4B Lat: 40.817361 Long: -124.185823 Datum: WGS 84

Soil Map Unit Name: 1014-Urban Land-Anthraltic Xerorthents Assn. 0-2% 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 X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

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 X No ___ | Is the Sampled Area within a Wetland? | Yes X No ___ |
| Hydric Soil Present? Yes X No ___ | | |
| Wetland Hydrology Present? Yes X No ___ | | |

Remarks:

**VEGETATION – Use scientific names of plants.**

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: 30 ft) | | | |
| 1. Salix hookeriana | 25 | ✓ | FACW |
| 2. Salix sitchensis | 10 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 35 | = Total Cover 17.5 / 7 | |
| Sapling/Shrub Stratum (Plot size: 5ft) | | | |
| 1. Salix lasiandra | 5 | ✓ | FACW |
| 2. Salix hookeriana | 10 | ✓ | FACW |
| 3. Salix sitchensis | 2 | | FACW |
| 4. | | | |
| 5. | | | |
| | 17 | = Total Cover 8.5 / 3.4 | |
| Herb Stratum (Plot size: 5ft) | | | |
| 1. Equisetum laevigatum | 22 | | FACW |
| 2. Potentilla anserina ssp pacifica | 25 | ✓ | OBL |
| 3. Lotus corniculatus | 13 | | FAC |
| 4. Agrostis stolonifera | 34 | ✓ | FAC |
| 5. Juncus effuses | 20 | | FACW |
| 6. Anthoxanthum odoratum | 2 | | FACU |
| 7. Holcus lanatus | 2 | | FAC |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 118 | = Total Cover 59 / 23.6 | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum Ø | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: Numerous willow saplings present

## SOIL

Sampling Point: TP 9

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 7.5YR2.5/1 | 100 | — | — | — | — | Peat | Sod (Juncus roots) |
| 3-12 | N2.5/ | 96 | 10YR3/1 | 4 | C | M | CbGrCoLS | Industrial fill |
| 12-25+ | N3/ | 100 | — | — | — | — | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
X Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Loamy Mucky Mineral (F1) (**except MLRA 1**)
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ 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 X No ____

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

__ Surface Water (A1)
X High Water Table (A2)
X Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Sparsely Vegetated Concave Surface (B8)
__ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
__ Salt Crust (B11)
__ 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)
__ Stunted or Stressed Plants (D1) (**LRR A**)
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
X Saturation Visible on Aerial Imagery (C9)
X Geomorphic Position (D2)
__ Shallow Aquitard (D3)
X FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) (**LRR A**)
__ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes X No ____ Depth (inches): 8 in

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

**Wetland Hydrology Present?** Yes X No ____

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa / Humboldt Sampling Date: 5/28/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP10

Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: Secs. 15, 16+21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA, 4B Lat: 40.817075 Long: -124.185550 Datum: WGS84

Soil Map Unit Name: 1014-Urban Land-Anthraltic Xerorthents Assn. 0-2% 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 X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ______ No X

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 X | No ______ | Is the Sampled Area within a Wetland? Yes X No ______ |
| Hydric Soil Present? | Yes X | No ______ | |
| Wetland Hydrology Present? | Yes X | No ______ | |

Remarks:

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ______) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5ft) | | | |
| 1. Salix hookeriana | 8 | ✓ | FACW |
| 2. Salix lasiandra | 8 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 16 | = Total Cover 8 / 3.2 | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Schoenoplectus pungens | 5 | | OBL |
| 2. Triglochin maritimum | 8 | ✓ | OBL |
| 3. Juncus effusus | 13 | ✓ | FACW |
| 4. Lotus corniculatus | 8 | ✓ | FAC |
| 5. Potentilla anserina | 1 | | OBL |
| 6. Juncus xiphioides | 5 | | OBL |
| 7. Holcus lanatus | 2 | | FAC |
| 8. Agrostis stolonifera | 6 | | FAC |
| 9. Equisetum laevigatum | 5 | | FACW |
| 10. Juncus phaeocephalus | 3 | | FACW |
| 11. | | | |
| | 56 | = Total Cover 28 / 11.2 | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 44 * | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ______

Remarks: * litter

## SOIL

Sampling Point: TP 10

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 7.5YR 2.5/1 | 100 | — | — | — | — | MP | |
| 5-18+ | 10 Y 2.5/1 | 96 | 10 YR 3/3 | 4 | C | PL | GrGLS | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X No ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- __ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes X No ____ Depth (inches): 9 in

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

**Wetland Hydrology Present?** Yes X No ______

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa/Humboldt Sampling Date: 5/28/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP11

Investigator(s): Sam Polly, Joseph Soler Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside Industrial fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA 4B Lat: 40.816663 Long: -124.185236 Datum: WGS 84

Soil Map Unit Name: 1014-Urban Land-Anthraltic Xerorthents Assn. 0-2% 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 X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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 X | No ____ |
| Hydric Soil Present? | Yes X | No ____ |
| Wetland Hydrology Present? | Yes X | No ____ |

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:

### 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: 5ft) | | | |
| 1. Salix sitchensis | 12 | ✓ | FAC |
| 2. Salix hookeriana | 2 | | FACW |
| 3. Rubus armeniacus | 14 | ✓ | FAC |
| 4. | | | |
| 5. | | | |
| | 28 | = Total Cover | 14 / 5.6 |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Equisetum laevigatum | 20 | ✓ | FACW |
| 2. Lotus corniculatus | 10 | ✓ | FAC |
| 3. Mentha pulegium | 1 | | OBL |
| 4. Holcus lanatus | 4 | | FAC |
| 5. Triglochin maritima | 5 | | OBL |
| 6. Festuca myuros | 1 | | FACU |
| 7. Isolepis cernua | 3 | | OBL |
| 8. Briza maxima | 4 | | NL |
| 9. Leontodon saxatilis | 10 | ✓ | FACU |
| 10. Plantago lanceolata | 6 | | FACU |
| 11. Trifolium dubium | 3 | | FACU |
| | 67 | = Total Cover | 33.5 / 13.4 |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 33*

Remarks: Litter + Thatch

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

## SOIL

Sampling Point: TP11

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 2.5Y3/2 | 70 | 5YR 3/4 | 30 | C | PL | LS | |
| 5-8 | 5Y3/1 | 83 | 7.5YR 3/4 | 17 | C | PL | LS | |
| 8-24+ | N 2.5/ | 80 | 10YR 3/4 | 20 | C | M/PL | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 14 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 9 in

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

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa / Humboldt Sampling Date: 6/4/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP12

Investigator(s): Joseph Saler/Sam Polly Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA - 4B Lat: 40.816128° Long: -124.183728° Datum: WGS84

Soil Map Unit Name: 1014- Urban Land-Anthraltic Xerorthents Assn. 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | |
| Wetland Hydrology Present? | Yes ____ No X | |

Remarks: 210% of normal May precip, 76% of normal annual precip.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: 30 ft) | | | |
| 1. Salix hookeriana | 80 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 80 | = Total Cover | |
| Sapling/Shrub Stratum (Plot size: 5ft) | | | |
| 1. Rubus ursinus | 40 | ✓ | FACU |
| 2. Rubus armeniacus | 8 | | FAC |
| 3. Ilex aquifolium | 2 | | FACU |
| 4. | | | |
| 5. | | | |
| | 50 | = Total Cover 25/10 | |
| Herb Stratum (Plot size: 5ft) | | | |
| 1. Bromus carinatus | 2 | ✓ | NL |
| 2. Cortaderia jubata | 6 | ✓ | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 8 | = Total Cover 4/1.6 | |
| Woody Vine Stratum (Plot size: 5ft) | | | |
| 1. Hedera helix | 5 | ✓ | FACU |
| 2. | | | |
| | 5 | = Total Cover | |

% Bare Ground in Herb Stratum 90% *

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks: * Leaf litter

## SOIL

Sampling Point: TP12

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 2/1 | 100 | — | — | — | — | SL | |
| 5-11 | 10YR 3/2 | 100 | — | — | — | — | LS | Some Cobble |
| 11-24+ | 10YR 4/1 | 60 | 10YR 3/4 | 40 | C | M | LS | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
__ 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) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ 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** X

Remarks:

## 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)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Sparsely Vegetated Concave Surface (B8)
__ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
__ Salt Crust (B11)
__ 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)
__ Stunted or Stressed Plants (D1) **(LRR A)**
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) **(LRR A)**
__ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** **Yes** ______ **No** X

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa / Humboldt Sampling Date: 6/4/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 13

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA - 4B Lat: 40.815435° Long: -124.185233° Datum: WGS 84

Soil Map Unit Name: 1014-Urban Land- Anthraltic Xerorthents Assn. 0-2% 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 X, 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 X No ____ | Is the Sampled Area within a Wetland? Yes X No ____ |
| Hydric Soil Present? | Yes X No ____ | |
| Wetland Hydrology Present? | Yes X No ____ | |

Remarks: Woody Vegetation recently cut / managed. Wetland occurs in depression, best described as PEM1E50g. Rapid willow growth, may transition to PSS.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5ft ) | | | |
| 1. Rubus ursinus | 12 | ✓ | FACU |
| 2. Salix hookeriana | 10 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 22 | = Total Cover | 11 / 4.4 |
| **Herb Stratum** (Plot size: 5ft ) | | | |
| 1. Eleocharis macrostachya | 4 | | * N/ (OBL) |
| 2. Potentilla anserina ssp. pacifica | 12 | | OBL |
| 3. Equisetum arvense | 25 | ✓ | FAC |
| 4. Lotus corniculatus | 50 | ✓ | FAC |
| 5. Agrostis stolonifera | 25 | ✓ | FAC |
| 6. Rumex crispus | 1 | | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 117 | = Total Cover | 58.5 / 23.4 |
| **Woody Vine Stratum** (Plot size: ____ ) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum Ø | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: * Eleocharis macrostachya is not listed in USACE manual; however, obs of this species in the northcoast region suggest OBL or FACW designation & is treated as such.

## SOIL

Sampling Point: TP13

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 2/1 | 100 | — | — | — | — | Mu | |
| 5-24+ | 2.5Y2.5/1 | 100 | — | — | — | — | GVGrGLS | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- X 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- X 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): N/A |
| Water Table Present? | Yes X | No ___ | Depth (inches): 5 in |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): surface |

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

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

Remarks: * Ponded water ~ 4 ft west of tp

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT I City/County: Humboldt Sampling Date: 4-28-20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 14

Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A, MLRA-4B Lat: 40.814731° Long: -124.184807° Datum: WGS84

Soil Map Unit Name: 1014 - Urban land - Anthraltic Xerorthents assn, 0-2 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 X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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 X No ____ | Is the Sampled Area within a Wetland? | Yes ____ No X *Meets CCC wetland definition |
| Hydric Soil Present? Yes ____ No X | | |
| Wetland Hydrology Present? Yes X No ____ | | |

Remarks: 10' NW of DI @ outfall to bay S. of BASIC cement wall ~100 yd S. of old dock. DI is elevated, ponding water in surrounding area. WETS data drier than normal

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Lotus corniculatus | 23 | ✓ | FAC |
| 2. Festuca rubra | 32 | ✓ | FAC |
| 3. Daucus carota | 12 | | FACU |
| 4. Grindelia stricta | 12 | | FACW |
| 5. Sonchus oleraceus | 1 | | UPL |
| 6. Melilotus albus | 5 | | NL |
| 7. Rumex crispus | 2 | | FAC |
| 8. Agrostis stolonifera | 21 | ✓ | FAC |
| 9. Holcus lanatus | 3 | | FAC |
| 10. Vicia sativa | 2 | | UPL |
| 11. Leucanthemum vulgare | 1 | | FACU |
| | 115 | = Total Cover 57.5 / 23 | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: Festuca rubra, Spartina

**SOIL**

Sampling Point: TP 14

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-11 | 10YR 2/1 | 100 | — | — | — | — | GrLS | Fill (Asphalt, Brick) |
| 11-24+ | 10Y 2.5/1 | 100 | — | — | — | — | Gr LS | Fill (Asphalt, Brick) |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
__ 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) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ 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 X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

__ Surface Water (A1)
__ High Water Table (A2)
X Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Sparsely Vegetated Concave Surface (B8)
__ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
__ Salt Crust (B11)
__ 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)
__ Stunted or Stressed Plants (D1) **(LRR A)**
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
✓ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) **(LRR A)**
__ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A
Water Table Present? Yes ____ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 11 in

**Wetland Hydrology Present?** Yes X No ____

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa / Humboldt Sampling Date: 6/4/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP15

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16 + 21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): A, MLRA 4B Lat: 40.814260° Long: -124.185571 Datum: WGS 84

Soil Map Unit Name: 1014-Urban Land-Anthraltic Xerorthents Assn. 0-2% 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 X No ____ | Is the Sampled Area within a Wetland? | Yes X No ____ |
| Hydric Soil Present? Yes X No ____ | | |
| Wetland Hydrology Present? Yes X No ____ | | |

Remarks: Wetland occurs in is isolated depression (former foundation?). Best described as PFO1EsOg.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft) | | | |
| 1. Salix lasiandra var. lasiandra | 35 | ✓ | FACW |
| 2. Salix hookeriana | 65 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 100 | = Total Cover 50/20 | |
| **Sapling/Shrub Stratum** (Plot size: 5 ft) | | | |
| 1. Morella californica | 20 | ✓ | FACW |
| 2. Rubus armeniacus | 2 | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 22 | = Total Cover 11/4.4 | |
| **Herb Stratum** (Plot size: 5 ft) | | | |
| 1. Carex obnupta | 40 | ✓ | OBL |
| 2. Equisetum laevigatum | 1 | | FACW |
| 3. Symphyotrichum chilense | 3 | | FAC |
| 4. Juncus breweri | 1 | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 45 | = Total Cover 22.5/9 | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 55%* | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: * Leaf litter

## SOIL

Sampling Point: TP15

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 2/1 | 100 | — | — | — | — | Mu | |
| 4-5 | 10YR 2/1 | 100 | — | | | | MuS | |
| 5-20 | 10Y 2.5/1 | 85 | 5YR 3/4 | 15 | C | PL | S | |
| 20-24+ | N 2.5/ | 100 | — | — | — | — | S | |

[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)
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Sandy Mucky Mineral (S1)
__ Sandy Gleyed Matrix (S4)
X Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Loamy Mucky Mineral (F1) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

X 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ 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 X No ____

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

__ Surface Water (A1)
X High Water Table (A2)
X Saturation (A3)
__ Water Marks (B1)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
X Sparsely Vegetated Concave Surface (B8)
__ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
__ Salt Crust (B11)
__ Aquatic Invertebrates (B13)
__ Hydrogen Sulfide Odor (C1)
X Oxidized Rhizospheres along Living Roots (C3)
__ Presence of Reduced Iron (C4)
__ Recent Iron Reduction in Tilled Soils (C6)
__ Stunted or Stressed Plants (D1) **(LRR A)**
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
__ Drainage Patterns (B10)
X Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
X Geomorphic Position (D2)
__ Shallow Aquitard (D3)
X FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) **(LRR A)**
__ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes X No ____ Depth (inches): 6"
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): Surface

**Wetland Hydrology Present?** Yes X No ____

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa / Humboldt Sampling Date: 6/4/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 16

Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA - 4B Lat: 40.815168° Long: -124.186805° Datum: WGS 84

Soil Map Unit Name: 1014 - Urban Land - Anthraltic Xerorthents Assn. 0-2% 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 X No ____ | Is the Sampled Area within a Wetland? Yes X No ____ |
| Hydric Soil Present? | Yes X No ____ | |
| Wetland Hydrology Present? | Yes X No ____ | |

Remarks:

### 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: 5ft) | | | |
| 1. Salix hookeriana | 15 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15 | = Total Cover | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Potentilla anserina | 15 | | OBL |
| 2. Holcus lanatus | 18 | ✓ | FAC |
| 3. Festuca arundinacea | 20 | ✓ | FAC |
| 4. Eleocharis macrostachya | 5 | | * NL (OBL) |
| 5. Lotus corniculatus | 35 | ✓ | FAC |
| 6. Trifolium repens | 1 | | FAC |
| 7. Mentha pulegium | 5 | | OBL |
| 8. Cynosurus echinatus | 2 | | NL |
| 9. Briza maxima | 1 | | NL |
| 10. Parentucellia viscosa | 1 | | FAC |
| 11. Cyperus eragrostis | 1 | | FACW |
| 12. Anthoxanthum odoratum | 8 | | FACU |
| 13. Festuca myuros | 1 | | FACU |
| 14. Rumex crispus | 1 | | FAC |
| | 114 | = Total Cover | 57 / 22.8 |

% Bare Ground in Herb Stratum Ø

Remarks: * Eleocharis macrostachya is not listed in USACE manual; however, obs of this species in the North coast region suggest OBL or FACW designation & is treated as such.

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

## SOIL

Sampling Point: TP16

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-1 | 10YR 2/2 | 100 | — | — | — | — | M | |
| 1-6 | 5Y 3/1 | 100 | — | — | — | — | VGrGSL | |
| 6-19 | 5Y 3/1 | 98 | 2.5YR 3/6 | 2 | C | PL | LS | Less gravel |
| 19-24+ | 5GY 2.5/1 | 100 | — | — | — | — | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- X 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes X No ___ Depth (inches): 1 in

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa/Humboldt Sampling Date: 6/4/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 17

Investigator(s): Sam Polly Joseph Saler Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.814160° Long: -124.187120°* Datum: WGS 84

Soil Map Unit Name: 1014-Urban Land-Anthraltic Xerorthents Assn. 0-2% 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 X No ___ | Is the Sampled Area within a Wetland? Yes X No ___ |
| Hydric Soil Present? | Yes X No ___ | |
| Wetland Hydrology Present? | Yes X No ___ | |

Remarks: * 2022 updated gps equipment = 40.8142420/-124.187113°
wetland occurs in Isolated depression over highly manipulated soils. Best described as: PSS1CsOn

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30ft) | | | |
| 1. Salix sitchensis | 70 | ✓ | FACW |
| 2. Salix hookeriana | 20 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 90 | = Total Cover 45/18 | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Festuca perennis | 7 | | FAC |
| 2. Lotus corniculatus | 50 | ✓ | FAC |
| 3. Mentha pulegium | 2 | | OBL |
| 4. Rumex crispus | 1 | | FAC |
| 5. Agrostis stolonifera | 1 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 61 | = Total Cover 30.5/12.2 | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 43% * | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:
* Leaf litter

## SOIL

Sampling Point: TP 17

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 2/1 | 100 | — | — | — | — | MS | |
| 4-5 | 10YR 2/1 | 100 | — | — | — | — | GVGrMCoS | |
| 5-13 | 10YR 2/1 | 100 | — | — | — | — | CoSL | |
| 13-18 | 5Y 2.5/1 | 96 | 2.5Y3/1 | 2 | C | M | GrLS | Brick + Debris Present |
| | | | 2.5Y3/2 | 2 | C | M | | |
| 18- | N 2.5/ | 100 | — | — | — | — | S | |

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 23 in.

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 5 in.

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

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Samoa / Humboldt Sampling Date: 6/4/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP18

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill/Industrial Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA - 4B Lat: 40.814078° Long: -124.187933°* Datum: WGS 84

Soil Map Unit Name: 1014 - Urban Land - Anthraltic Xerorthents Assn. 0-2% 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 X No ___ | | Is the Sampled Area within a Wetland? Yes X No ___ |
| Hydric Soil Present? Yes X No ___ | | |
| Wetland Hydrology Present? Yes X No ___ | | |

Remarks: * 2022 upgraded gps equipment 40.814034°/-124.187908°
Wetland occurs in shallow depression at base of slope. Best described as: PSS1C5On.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft) | | | |
| 1. Salix hookeriana | 27 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 27 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5ft) | | | |
| 1. Rubus ursinus | 40 | ✓ | FACU |
| 2. Rubus armeniacus | 3 | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 43 | = Total Cover 21.5 / 8.6 | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Holcus lanatus | 20 | ✓ | FAC |
| 2. Agrostis stolonifera | 18 | ✓ | FAC |
| 3. Lotus corniculatus | 10 | | FAC |
| 4. Sonchus oleraceus | 2 | | UPL |
| 5. Mentha pulegium | 2 | | OBL |
| 6. Geranium dissectum | 1 | | NL |
| 7. Epilobium ciliatum | 1 | | FACW |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 54 | = Total Cover 27 / 10.8 | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 10% | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:

## SOIL

Sampling Point: TP18

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 2/1 | 100 | — | — | — | — | MS | |
| 4-19 | 10YR 3/1 | 100 | — | — | — | — | LS | |
| 19-24+ | 10Y 2.5/1 | 100 | — | — | — | — | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes _____ No X Depth (inches): N/A

Water Table Present? Yes _____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes X No ______

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT I City/County: Humboldt Sampling Date: 6/4/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP19

Investigator(s): Joseph Saler, Sam Polly Section, Township, Range: Secs. 15, 16, +21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.811134° Long: -124.187263° Datum: WGS84

Soil Map Unit Name: 1014 - Urban Land - Anthraltic Xerorthents Assn. 0-2% 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 X No ___ | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: * 2022 upgraded GPS equipment = 40.811108° / -124.1872550

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 90 | ✓ | FACW |
| 2. Salix hookeriana | 5 | | FACW |
| 3. | | | |
| 4. | | | |
| | 95 | = Total Cover | 47.5 / 19 |
| **Sapling/Shrub Stratum** (Plot size: 5 ft) | | | |
| 1. Rubus armeniacus | 15 | ✓ | FAC |
| 2. Rubus ursinus | 15 | ✓ | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 30 | = Total Cover | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 100% * | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: * Dense shade, leaf litter

## SOIL

Sampling Point: TP 19

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 2/1 | 100 | — | — | — | — | SL | |
| 5-24+ | 10YR 3/1 | 100 | — | — | — | — | GrLS | Dredge spoils → shells and marine debris |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/19/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 19 update

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.811108 Long: -124.187255 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 1-2% 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 ✓ 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 X |
| Hydric Soil Present? | Yes ____ | No X |
| Wetland Hydrology Present? | Yes ____ | No X |
| Is the Sampled Area within a Wetland? | Yes ____ | No X |

Remarks: WETS normal rainfall
Updated to reflect changed conditions at TP 19 on account of minor tree removal.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus ursinus | 15 | ✓ | FACU |
| 2. Rubus armeniacus | 4 | | FAC |
| 3. Morella californica | 3 | | FACW |
| 4. | | | |
| 5. | | | |
| = Total Cover | 22 | | 4.4 |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Melilotus indicus | 18 | | FACU |
| 2. Parentucellia viscosa | 9 | | FAC |
| 3. Lotus corniculatus | 15 | | FAC |
| 4. Geranium dissectum | 1 | | NL |
| 5. Holcus lanatus | 30 | ✓ | FAC |
| 6. Cirsium vulgare | 30 | ✓ | FACU |
| 7. Juncus bufonius | 1 | | FACW |
| 8. Helminthotheca echioides | 3 | | FAC |
| 9. Sonchus oleraceus | 5 | | UPL |
| 10. Briza maxima | 1 | | NL |
| 11. | | | |
| = Total Cover | 113 | | 56.5 / 22.6 |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 10

**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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Dense herbaceous veg. Tree canopy removed at this location which has changed vegetation composition. No longer hydrophytic veg dominance.

## SOIL

Sampling Point: TP19 update

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

use RMT 1 TP19

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**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:

See RMT 1 TP19 for hydro conditions.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Humboldt County Sampling Date: 8/13/20
Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 20
Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15,16,+21, T5N, R1W, HBM
Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR): A, MLRA - 4B Lat: 40.807064° Long: -124.189517° Datum: WGS84
Soil Map Unit Name: 1014-Urban Land - Anthraltic Xerorthents Assn. 0-2% 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 X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X
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 X No ___ | | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? Yes ___ No X | | |
| Wetland Hydrology Present? Yes X No ___ | | |

Remarks: Wets data drier than normal
* Stormwater infrastructure present, including weirs, check dams, pipes, oil booms and screens. high soil volume of wood chips -wood retaining walls, excavated feature,

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5ft) | | | |
| 1. Salix hookeriana | 38 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 38 | = Total Cover | |
| **Herb Stratum** (Plot size: 5ft) | | | |
| 1. Alisma lanceolatum | 12 | ✓ | OBL |
| 2. Typha latifolia | 20 | ✓ | OBL |
| 3. Persicaria maculosa | 15 | ✓ | FACW |
| 4. Pseudognaphalium luteoalbum | 1 | | FACW |
| 5. Sonchus oleraceus | 1 | | UPL |
| 6. Epilobium ciliatum | 1 | | FACW |
| 7. Cyperus eragrostis | 4 | | FACW |
| 8. Hypochaeris radicata | 1 | | FACU |
| 9. Hordeum marinum | 1 | | FAC |
| 10. | | | |
| 11. | | | |
| | 56 | = Total Cover 23 / 11.2 | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 44% | | | |

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:

## SOIL

Sampling Point: TP20

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 2/1 | 100 | — | — | — | — | O | Organic |
| 3-12 | 7.5YR 2.5/2 | 100 | — | — | — | — | O | |
| 12-20 | 2.5Y 2.5/1 | 70 | 10YR2/2 | 30 | C | M | O | Reduced Matrix, large volume |
| 20-24+ | N 3/ | 100 | — | — | — | — | LS | undecomposed wood chips. |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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 X

Remarks: O horizon likely decomposed wood chips from adjacent pulpmill facility. - undecomposed wood chips at 12 inches.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

___ Surface Water (A1)
___ High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
X Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
X Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
X Geomorphic Position (D2)
___ Shallow Aquitard (D3)
X FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 12.5

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Humboldt County Sampling Date: 8/13/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 21

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16, + 21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.806915° Long: -124.191134° Datum: WGS 84

Soil Map Unit Name: 1014-Urban land-Anthraltic Xerorthents Assn. 0-2% 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 X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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 X | No ____ |
| Hydric Soil Present? | Yes ____ | No X |
| Wetland Hydrology Present? | Yes X | No ____ |

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: WETS data drier than normal. Better described in OHWM Sheet #1. Culverts empty into this swale & soil is mostly wood waste.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 20 | ✓ | FACW |
| 2. Salix hookeriana | 80 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 100 | = Total Cover | 50 / 20 |
| **Sapling/Shrub Stratum** (Plot size: 5 ft) | | | |
| 1. Rubus ursinus | 3 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 3 | = Total Cover | |
| **Herb Stratum** (Plot size: 5 ft) | | | |
| 1. Juncus effusus | 1 | ✓ | FACW |
| 2. Holcus lanatus | 1 | ✓ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 2 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 98% | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:

## SOIL

Sampling Point: TP21

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 3/2 | 100 | — | — | — | — | LS | Some % organic matter + roots |
| 10-24+ | 10YR 2/2 | 100 | — | — | — | — | O | Wood chips + Sawdust |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- __ 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) **(except MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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** X

Remarks:

## 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)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) **(LRR A)**
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) **(LRR A)**
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** **Yes** X **No** ______

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

Remarks:

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: RMT 1 City/County: Humboldt Sampling Date: 8/13/20

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 22

Investigator(s): Sam Polly, Joseph Saler Section, Township, Range: Secs. 15, 16+21, T5N, R1W, HBM

Landform (hillslope, terrace, etc.): Bayside Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A-MLRA 4B Lat: 40.807821° Long: -124.191760° Datum: WGS 84

Soil Map Unit Name: 1014-Urban Land-Anthraltic Xerorthents Asso. 0-2% 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 X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

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 X No ___ | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes X No ___ | |

Remarks: western most 4' culvert outlet ~100yd from old Green's office – 3 large culverts empty into swale. + Undecomposed mill waste/wood in soil
wets data drier than normal

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 80 | ✓ | FACW |
| 2. Salix lasiandra | 15 | | FACW |
| 3. | | | |
| 4. | | | |
| | 95 | = Total Cover | 47.5 / 19 |
| **Sapling/Shrub Stratum** (Plot size: 5ft) | | | |
| 1. Rubus armeniacus | 15 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15 | = Total Cover | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 100% | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:

## SOIL

Sampling Point: TP22

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-9 | 10YR 2/1 | 100 | — | — | — | — | L | |
| 9-17 | 5GY 2.5/1 | 100 | — | — | — | — | LS | |
| 17-24+ | 10YR 2/2 | 100 | — | — | — | — | LS | 70% saw dust/woody debris |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): N/A |
| Water Table Present? | Yes X | No ___ | Depth (inches): 14in |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): 9in |

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 4/29/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP23

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

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

Subregion (LRR): A, MLRA-4B Lat: 40.823699 Long: -124.174337 Datum: WGS 84

Soil Map Unit Name: 1009-Hydraquents-Wassents mucky SiL strong saline 0-3% 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 X | No ______ |
| Hydric Soil Present? | Yes X | No ______ |
| Wetland Hydrology Present? | Yes X | No ______ |

Is the Sampled Area within a Wetland? Yes X No ______

Remarks: WETS normal rainfall severe regional drought. Wetland #2 TP excavated at edge of Estuarine Wetland (E2US+EM1N3n) Higher elevation portions of the wetland supports diverse saltmarsh. Lower elevation mud flats.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Spartina densiflora | 5 | | OBL |
| 2. Jaumea carnosa | 40 | ✓ | OBL |
| 3. Salicornia pacifica | 3 | | OBL |
| 4. Limonium californicum | 1 | | OBL |
| 5. Distichlis spicata | 5 | | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 54 | 27/ | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 46*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ______

Remarks:
*Muck and bare soil from perennial saturation + inundation.

## SOIL

Sampling Point: TP23

SVR Consulting Engineers & Geologists, Inc

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-11 | N 2.5/ | 100 | | | | | S | |
| 11-14+ | 2.5Y 3/2 | 100 | | | | | MuS | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- X Hydrogen Sulfide (A4)
- __ 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) **(except MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- __ Salt Crust (B11)
- __ Aquatic Invertebrates (B13)
- X Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) **(LRR A)**
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) **(LRR A)**
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes X No ___ Depth (inches): 0.5

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 4/29/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP24

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): fill slope Local relief (concave, convex, none): None Slope (%): 40

Subregion (LRR): A, MLRA-4B Lat: 40.823726 Long: -124.174348 Datum: WGS 84

Soil Map Unit Name: 1009-Hydraquents-Wassents mucky SiL strongsaline 0-3% 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 X | | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? Yes ___ No X | | |
| Wetland Hydrology Present? Yes ___ No X | | |

Remarks: WETS normal rainfall

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Briza maxima | 30 | ✓ | NL |
| 2. Bromus diandrus | 4 | | NL |
| 3. Parapholis incurva | 10 | | FACU |
| 4. Distichlis spicata | 10 | | FACW |
| 5. Anthoxanthum odoratum | 2 | | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 56 | = Total Cover | 28 |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 44 | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ___ (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks: Bare sand slope

Consulting Engine[ers] & Geologists, Inc

## SOIL

Sampling Point: TP 24

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Redox Features Type[1] | Redox Features Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-27 | 10YR 4/2 | 100 | — | — | — | — | S | <1% 5YR 4/6 @ 26 inch depth |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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** X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 4/29/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP25

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.823340 Long: -124.175161 Datum: WGS 84

Soil Map Unit Name: 1014- Urbanland-Anthraltic Xerorthents assoc. 0-2% slope 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 ✓ 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 X | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | |
| Wetland Hydrology Present? | Yes ____ No X | |

Remarks: WETS normal rainfall
TP excavated west of Vance avenue in depression.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 55 | ✓ | FACW |
| 2. Malus pumila | 30 | ✓ | NL |
| 3. | | | |
| 4. | | | |
| | 85 | = Total Cover | 42.5 / 17 |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 12 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 12 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Vicia sativa | 40 | ✓ | UPL |
| 2. Fragaria vesca | 11 | | FACU |
| 3. Geranium dissectum | 3 | | NL |
| 4. Vicia tetrasperma | 4 | | NL |
| 5. Anthoxanthum odoratum | 15 | | FACU |
| 6. Bromus diandrus | 1 | | NL |
| 7. Briza maxima | 1 | | NL |
| 8. Symphyotrichum chilense | 1 | | FAC |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 76 | = Total Cover | 38 / 15.2 |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 24* | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks: litter + woody debris

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## SOIL

Sampling Point: TP25

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 2/2 | 100 | 2.5Y | | | | LS | |
| 6-21 | 10YR 4/2 | 89 | 2.5Y 4/3 | 1 | C | M | S | |
| | 10YR 3/2 | 10 | | | | | | Mixed matrix |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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:

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

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

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks:

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 4/29/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP26

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.824108° Long: -124.174208° Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland-Anthraltic Xerorthents assoc. 0-2% slope NWI classification: None, PEM1C nearby

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 ✓ 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 X | No ___ |
| Hydric Soil Present? | Yes X | No ___ |
| Wetland Hydrology Present? | Yes X | No ___ |
| **Is the Sampled Area within a Wetland?** | Yes X | No ___ |

Remarks: WETS normal rainfall. Wetland #1
TP excavated at edge of Palustrine scrubshrub wetland (PSS3F+Dx 0+3g) Channelized conditions connecting natural wetlands (west) to tidal wetlands (east). Tidegate at Vance Avenue

**VEGETATION – Use scientific names of plants.**

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 100 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 100 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 100%

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: No herbaceous or shrub layers within perennially flooded wetland. Sparsely vegetated concave surface

## SOIL

Sampling Point: TP26

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8+ | 2.5Y 2.5/1 | 100 | — | — | — | — | M | Black. No exact color match in book |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- X Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- X 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks: strong HS smell
- High organic content

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes X No ___ Depth (inches): 1 in

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks: Culvert under vance Avenue has tide gate.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 4/29/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 27

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Fill Slope Local relief (concave, convex, none): None Slope (%): 15%

Subregion (LRR): A, MLRA-4B Lat: 40.824121 Long: -124.174162 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic xerorthents assoc. 0-2% slope NWI classification: Freshwater Emergent wetland

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 X | Is the Sampled Area within a Wetland? | Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | | |
| Wetland Hydrology Present? | Yes ____ No X | | |

Remarks: WETS normal rainfall
TP excavated on fillslope above wetland approx 12 ft from TP 26.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Eucalyptus globulus | 80 | ✓ | NL |
| 2. Morella californica | 30 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 110 | = Total Cover 55/22 | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 8 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 8 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Scrophularia californica | 8 | | FAC |
| 2. Briza maxima | 55 | ✓ | NL |
| 3. Oxalis pes-caprae | 4 | | NL |
| 4. Vicia sativa | 10 | | UPL |
| 5. Crocosmia xcrocosmiiflora | 5 | | FAC |
| 6. Avena barbata | 1 | | NL |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 83 | = Total Cover 41.5/16.6 | |
| **Woody Vine Stratum** (Plot size: 5ft) | | | |
| 1. Lonicera japonica | 5 | ✓ | FAC |
| 2. | | | |
| | 5 | = Total Cover | |

% Bare Ground in Herb Stratum 20% *

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks: * Leaf litter from Eucalyptus

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## SOIL

Sampling Point: TP27

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 3/3 | 100 | | | | | L | Many roots |
| 2-12 | 10YR 3/2 | 100 | | | | | L | |
| 12-24+ | 2.5Y 4/3 | 100 | | | | | S | <1% 7.5YR 5/8 @23 inches Conc. M. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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 X

Remarks:

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks: Well drained, sandy fillslope.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP28

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill. Local relief (concave, convex, none): concave Slope (%): 2-3

Subregion (LRR): A, MLRA-4B Lat: 40.822388 Long: -124.175811 Datum: WGS 84

Soil Map Unit Name: Urban land Anthraltic Xerorthents assoc. 0-2% 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 X |
| Hydric Soil Present? | Yes ____ | No X |
| Wetland Hydrology Present? | Yes ____ | No X |

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: WETS normal rainfall - willow depression between Vance Rd & Humboldt Bay

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Salix hookeriana | 90 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 90 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 8 | ✓ | FACU |
| 2. Lupinus arboreus | 6 | ✓ | UPL |
| 3. Lonicera involucrata | 1 | | FAC |
| 4. | | | |
| 5. | | | |
| | 15 | = Total Cover 15/3 | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Anthoxanthum odoratum | 27 | ✓ | FACU |
| 2. Holcus lanatus | 2 | | FAC |
| 3. Vicia tetrasperma | 2 | | NL |
| 4. Vicia sativa | 3 | | UPL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 34 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 66*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* litter and duff under dense willow canopy.

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## SOIL

Sampling Point: TP28

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-9 | 10YR 3/2 | 100 | — | — | — | — | L | |
| 9-13 | 10YR 4/3 | 100 | — | — | — | — | Gr LS | fill |
| 13-20 | 10YR 5/2+ | 80 | — | — | — | — | Gr S | fill |
| — | 10YR 4/3 | 20 | — | — | — | — | — | Mixed matrices |
| 20-25+ | 2.5Y 5/2 | 90 | 10YR 4/3+ | 10 | C | M | S | Native horizon |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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 X

Remarks: Fill w/ cobbles

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A
Water Table Present? Yes ___ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks: Well drained loamy/sandy/gravelly fill soils

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 29 (Veg)

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.822197 Long: -124.176220 Datum: WGS 84

Soil Map Unit Name: 1014 Urbanland Anthraltic Xerorthents assoc. 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
veg sample within willow patch. See TP 28 for soil & hydrology representative conditions

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 85 | ✓ | FACW |
| 2. Morella californica | 10 | | FACW |
| 3. | | | |
| 4. | | | |
| | 95 | = Total Cover | 47.5 / 19 |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus ursinus | 75 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 75 | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Polystichum munitum | 15 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 85% *

**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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks:
Litter and duff from willow and rubus.

## SOIL

Sampling Point: 29 (veg)

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

Veg only
See TP 28 for representative conditions

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

See TP 28 for representative soil conditions

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Veg only
See TP 28 for representative conditions

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**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:

See TP 28 for representative soil conditions.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP30 veg

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): bayside fill Local relief (concave, convex, none): None Slope (%): 1%

Subregion (LRR): A, MLRA-4B Lat: 40.821591 Long: -124.177492 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assoc 0-2%    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 X | | Is the Sampled Area within a Wetland? Yes ______ No X |
| Hydric Soil Present? Yes ______ No X | | |
| Wetland Hydrology Present? Yes ______ No X | | |

Remarks: WETS normal rainfall
Veg sampled only. See TP 3 for representative soil and hydrologic conditions

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Salix hookeriana | 95 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 95 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 75 | ✓ | FACU |
| 2. Rubus armeniacus | 10 | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 85 | = Total Cover | 42.5, 17 |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 100* | | | |

**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 | ______ | x 3 = ______ |
| FACU species | ______ | x 4 = ______ |
| UPL species | ______ | x 5 = ______ |
| Column Totals: | ______ (A) | ______ (B) |

Prevalence Index = B/A = ______

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
*Litter and duff from willow and rubus.

## SOIL

Sampling Point: TP 30 Veg

**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 |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

See TP 3 for Veg Data

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:
Veg only. See TP 3 for representative soil conditions.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): ______

Water Table Present? Yes ___ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ______

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

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

Remarks:
Veg only. See TP 3 for representative soil conditions.
No evidence of hydrology.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP31

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): concave Slope (%): 3-5

Subregion (LRR): A, MLRA-4B Lat: 40.820944 Long: -124.177503 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested/Shrub wetland

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 ✓ 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 X No ___ |
| Hydric Soil Present? Yes X No ___ | | |
| Wetland Hydrology Present? Yes X No ___ | | |

Remarks: WETS normal rainfall. Wetland occurs in densely vegetated swale. TP excavated near center of Palustrine forested wetland (PFO1Es On). Some portions scrub-shrub. Brackish water intrusion likely near connection to Humboldt Bay.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Morella californica | 50 | ✓ | FACW |
| 2. Salix hookeriana | 50 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 100 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 7 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 7 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 100* | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (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:**

__ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: * Litter

## SOIL

Sampling Point: TP31

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-13 | 2.5Y 2.5/1 | 100 | — | — | — | — | SiL | fill: buried bricks + |
| 13-~~20~~19 | 2.5Y 3/1 | >99 | 10YR 5/8 | <1 | C | M | SL | Woody debris, pockets of muck |
| 19-21+ | 2.5Y 3/1 | 95 | 10YR 5/8 | 5 | C | M | SL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks: Hit solid layer @ 20-21" - concrete? Tried TP next to TP31 - same issue
Maybe A12, but cannot excavate deep enough to determine. Could be potentially an A12 but not able to dig deep enough to find out. Professional judgement = hydric

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): ~~13~~ 12" 1hr later

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 32

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

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

Subregion (LRR): A, MLRA-4B Lat: 40.820907 Long: -124.177639 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested/Shrub wetland

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 X No ___ | Is the Sampled Area within a Wetland? Yes X No ___ |
| Hydric Soil Present? | Yes X No ___ | |
| Wetland Hydrology Present? | Yes X No ___ | |

Remarks: WETS normal rainfall

TP excavated in swale below fill mound. Connects to Humboldt Bay. Palustrine forested wetland (PFO1Es0n).

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Alnus rubra | 90 | ✓ | FAC |
| 2. Salix hookeriana | 20 | | FACW |
| 3. | | | |
| 4. | | | |
| | 110 | = Total Cover 55/22 | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus armeniacus | 85 | ✓ | FAC |
| 2. Rubus ursinus | 5 | | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 90 | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 100% *

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: * litter and duff. Extremely dense Rubus cover.

## SOIL

Sampling Point: TP 32

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-11 | 2.5Y 3/1 | 100 | — | — | — | — | SiL | |
| 11-24+ | 2.5Y 4/1 | 85 | 10YR 4/6 | 15 | C | M | SCL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- [x] 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) **(except MLRA 1)**
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- [ ] 2 cm Muck (A10)
- [ ] Red Parent Material (TF2)
- [ ] Very Shallow Dark Surface (TF12)
- [ ] 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 X No ____

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- [ ] Salt Crust (B11)
- [ ] 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)
- [ ] Stunted or Stressed Plants (D1) **(LRR A)**
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [x] Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Raised Ant Mounds (D6) **(LRR A)**
- [ ] Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): 14"

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 11 in

**Wetland Hydrology Present?** Yes X No ____

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP33

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill terrace Local relief (concave, convex, none): none Slope (%): 5-10

Subregion (LRR): A, MLRA-4B Lat: 40.820793 Long: -124.177880 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested/Shrub Wetland

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 X | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | |
| Wetland Hydrology Present? | Yes ____ No X | |

Remarks: WETS normal rainfall
TP excavated in upland area approx. 8 ft from wetland TP (exploratory). Conditions representative of upland conditions around wetland.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Alnus rubra | 80 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 80 = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 90 | ✓ | FACU |
| 2. Rubus armeniacus | 10 | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 100 = Total Cover | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Polystichum munitum | 15 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 15 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |
| % Bare Ground in Herb Stratum 85* | | | |

**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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* litter + duff from dense Rubus cover

## SOIL

Sampling Point: TP33

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 2/1 | 100 | — | — | — | — | SiL | |
| 5-10 | 10YR 3/1 | 100 | — | — | — | — | SiL | gradational color change |
| 10-24 | 10YR 3/2 | 100 | — | — | — | — | SiL | w/woody debris |
| 21-24+ | 10YR 4/1 | 97 | 10YR 6/6 | 3 | C | M | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A
Water Table Present? Yes ___ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks: Well drained soils, slightly elevated above wetland documented @ TP 32.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP34

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

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

Subregion (LRR): A, MLRA-4B Lat: 40.821082 Long: -124.177511 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested/Shrub wetland

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 ✓ 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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |
| Is the Sampled Area within a Wetland? | Yes ___ | No X |

Remarks: WETS normal rainfall
TP excavated within willow stand. Flat ground, no hydrology

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Salix hookeriana | 85 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | 85 | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 40 | ✓ | FACU |
| 2. Malus fusca | 1 | | NL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 100 *

**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 | | x 3 = | |
| FACU species | | x 4 = | |
| UPL species | | x 5 = | |
| Column Totals: | (A) | | (B) |

Prevalence Index = B/A = ______

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* Litter and debris from willow and rubus.

## SOIL

Sampling Point: TP 34

Consulting Engineers & Geologists, Inc

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 2.5Y 2.5/1 | 100 | — | — | — | — | SiL | |
| 5-13 | 10YR 3/1 | 100 | — | — | — | — | SL | |
| 13-23.5 | 5Y 4/1 | 97 | 2.5Y 5/6 | 3 | C | M | S | |
| 23.5-24+ | 2.5Y 2.5/1 | 100 | — | — | — | — | GrS | Bottom ash + burned debris Very compacted. |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP35

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.821749 Long: -124.177533 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents 0-2% 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 X | No ______ |
| Hydric Soil Present? | Yes ______ | No X |
| Wetland Hydrology Present? | Yes ______ | No X |

Is the Sampled Area within a Wetland? Yes ______ No X

Remarks: WETS normal rainfall

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 10 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Baccharis pilularis ssp. consanguinea | 10 | ✓ | UPL |
| 2. Rubus armeniacus | 20 | ✓ | FAC |
| 3. Rubus ursinus | 8 | ✓ | FACU |
| 4. | | | |
| 5. | | | |
| | 38 | = Total Cover | 76 / 19 |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Carex harfordii | 80 | ✓ | OBL |
| 2. Anthoxanthum odoratum | 20 | | FACU |
| 3. Vicia sativa | 3 | | UPL |
| 4. Juncus lescurii | 1 | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 104 | = Total Cover | 20.5 / 51.5 |
| **Woody Vine Stratum (Plot size: ______)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum Ø

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ______

Remarks: Carex dominant in small localized area

## SOIL

Sampling Point: TP35

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-7 | 2.5Y 3/2 | 100 | — | — | — | — | LS | |
| 7-16 | 10YR 4/1 | 70 | 7.5YR 5/6 | 30 | C | m | S | |
| 16-24+ | 5Y 4/4 | 100 | — | — | — | — | S | |

[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)
__ 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) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ 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 X

Remarks:

## 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)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Sparsely Vegetated Concave Surface (B8)
__ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
__ Salt Crust (B11)
__ 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)
__ Stunted or Stressed Plants (D1) **(LRR A)**
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) **(LRR A)**
__ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ____ No X

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

Remarks:
flat, fill area, sandy soils.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/4/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP36

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): ______ Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.821711 Long: -124.177883 Datum: WGS 84

Soil Map Unit Name: 1014 Urban land Anthraltic Xerorthents 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ______ No X |
| Hydric Soil Present? | Yes ______ No X | |
| Wetland Hydrology Present? | Yes ______ No X | |

Remarks: WETS normal rainfall
TP excavated in isolated, hydrophytic veg present, but not dominant.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 35 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 35 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Baccharis pilularis ssp. consanguinea | 20 | ✓ | UPL |
| 2. Rubus ursinus | 18 | ✓ | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 38 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Juncus effusus | 8 | | FACW |
| 2. Phalaris arundinacea | 8 | | FACW |
| 3. Juncus balticus ssp. ater | 40 | ✓ | FACW |
| 4. Cardamine oligosperma | 5 | | FAC |
| 5. Galium aparine | 1 | | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 62 | = Total Cover | 13.8 |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 38* | | | |

**Dominance Test worksheet:**

| | | |
|---|---|---|
| Number of Dominant Species That Are OBL, FACW, or FAC: | 2 | (A) |
| Total Number of Dominant Species Across All Strata: | 4 | (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 ______ | x 3 = ______ |
| FACU species ______ | x 4 = ______ |
| UPL species ______ | x 5 = ______ |
| Column Totals: ______ (A) | ______ (B) |

Prevalence Index = B/A = ______

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks:
Thatch + Litter.

SYN Consulting Engineers & Geologists, Inc

## SOIL

Sampling Point: TP 3

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-1 | 2.5Y 2.5/1 | 100 | — | — | — | — | LS | |
| 1-9 | 10YR 4/6 | 50 | — | — | — | — | S | Mixed matrices |
| — | 10YR 4/3 | 50 | — | | | | — | |
| 9-21 | 10YR 4/2 | 90 | 2.5Y 4/4 | 10 | C | M | S | Gradation between horizons |
| 21-23+ | 5Y 2.5/1 | 100 | — | — | — | — | GrS | |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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 X

Remarks: Too deep for S

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A
Water Table Present? Yes ___ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks: well drained, no hydrology in sandy soil.

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/5/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP37

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

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

Subregion (LRR): A, MLRA-4B Lat: 40.821384° Long: -124.179684° Datum: WGS 84

Soil Map Unit Name: Urban land-Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested/Shrub wetlands

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 X | No ____ |
| Hydric Soil Present? | Yes X | No ____ |
| Wetland Hydrology Present? | Yes X | No ____ |

Is the Sampled Area within a Wetland? Yes X No ____

Remarks: WETS normal rainfall

TP excavated w/i steep sloped hollow. transitions abruptly from 3p to upland. Best described as (PFO3EOg)

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 70 | ✓ | FACW |
| 2. Salix hookeriana | 20 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 90 | = Total Cover | 45/18 |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Carex obnupta | 1 | | OBL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 1 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 99% *

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- __ 3 - Prevalence Index is ≤3.0[1]
- __ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ 5 - Wetland Non-Vascular Plants[1]
- __ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:
* Litter and duff from dense Morella cover.

## SOIL

Sampling Point: TP 37

**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 | 2.5Y 2.5/1 | 100 | | | | | L | |
| 3-7 | 2.5Y 2.5/1 | 100 | | | | | Peat | |
| 7-16 | 2.5Y 2.5/1 | 100 | | | | | Mu | |
| 16-24+ | 10Y 2.5/1 | 100 | | | | | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- __ 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) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- X 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 X No ____

Remarks:

Positive AAD reation @ 9in.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes X No ____ Depth (inches): 1in (12 in from TP)

Water Table Present? Yes X No ____ Depth (inches): 9 in

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

**Wetland Hydrology Present?** Yes X No ____

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

Remarks:

Steep walled hollow approx. 10 ft deep with wetland at bottom.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/5/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 38

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside alluvium fill Local relief (concave, convex, none): Slope, none Slope (%): 48

Subregion (LRR): A, MLRA-4B Lat: 40.821421 Long: -124.179723 Datum: WGS 84

Soil Map Unit Name: Urban land-Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested/Shrub wetlands

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 ✓ 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
TP excavated on hollow slope above wetland. Representative of upland conditions.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Morella californica | 60 | ✓ | FACW |
| 2. Salix hookeriana | 10 | | FACW |
| 3. | | | |
| 4. | | | |
| | 70 | = Total Cover 35/14 | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 7 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 7 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Polystichum munitum | 15 | ✓ | FACU |
| 2. Hypochaeris radicata | 1 | | FACU |
| 3. Rumex acetosella | 3 | ✓ | FACU |
| 4. Epilobium ciliatum | 1 | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 20 | = Total Cover 1.3/3 | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 80* | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Litter + Duff from Morella and polystichum. Bare soils ~ 15%

## SOIL

Sampling Point: TP 38

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 2.5Y 2.5/1 | 100 | — | — | — | — | SL | |
| 6-24+ | 5Y 4/3 | 100 | | | | | LS | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- __ 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) **(except MLRA 1)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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** X

Remarks:

## 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)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) **(LRR A)**
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5) x
- __ Raised Ant Mounds (D6) **(LRR A)**
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): N/A |
| Water Table Present? | Yes ___ | No X | Depth (inches): N/A |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): N/A |

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

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

Remarks:

Well drained soils, sloping.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/5/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 39

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): A, MLRA-4B Lat: 40.820668° Long: -124.178999° Datum: WGS 84

Soil Map Unit Name: Urbanland-Anthraltic Xerorthents assoc. 0-2% 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 X | No ___ |
| Hydric Soil Present? | Yes X | No ___ |
| Wetland Hydrology Present? | Yes X | No ___ |
| Is the Sampled Area within a Wetland? | Yes X | No ___ |

Remarks: WETS normal rainfall
In drainage swale w/ direct above ground connection to OT. Best described as PSS1CxDg

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 75 | ✓ | FACW |
| 2. Morella californica | 10 | | FACW |
| 3. | | | |
| 4. | | | |
| | 85 | = Total Cover | 42.5/17 |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 22 | ✓ | FAC |
| 2. Rubus ursinus | 2 | | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 24 | = Total Cover | 12/4.8 |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Holcus lanatus | 13 | ✓ | FAC |
| 2. Equisetum arvense | 3 | | FAC |
| 3. Scirpus micro.carpus | 2 | | OBL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 18 | = Total Cover | 9/3.6 |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 82*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: Litter and duff from willow, Densely shaded.

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## SOIL

Sampling Point: TP39

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 2.5Y 2.5/1 | 100 | | | | | Peat | |
| 2-26+ | 2.5Y 4/2 | 60 | 7.5YR 4/6 | 5 | C | M | S | 2.5Y 4/2 increases w/depth |
| | | | 2.5Y 4/4 | 35 | C | M | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 13"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10 in

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

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

Remarks:
Depression holds water. Appears to be hydrologic input from DI and grating which connect to humboldt bay via other wetlands.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 4/5/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 40

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): A, MLRA-4B Lat: 40.820650° Long: -124.179053° Datum: WGS 84

Soil Map Unit Name: Urbanland-Anthaltic Xerorthents assoc. 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
TP excavated within flat area just above swale containing wetland as documented by TP39. Conditions represent upland

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 3 | | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 3 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Anthoxanthum odoratum | 80 | ✓ | FACU |
| 2. Aira caryophyllea | 1 | | FACU |
| 3. Bromus diandrus | 3 | | NL |
| 4. Vicia sativa | 1 | | UPL |
| 5. Rumex acetosella | 3 | | FACU |
| 6. Bromus hordeaceus | 1 | | FACU |
| 7. Festuca bromoides | 4 | | NL |
| 8. Equisetum arvense | <1 | | FAC |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 93 | = Total Cover | 46.5/18.6 |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 7*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* Sand.

## SOIL

Sampling Point: TP40

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 2.5Y 2.5/1 | 100 | | | | | LS | |
| 2-24+ | 2.5Y 4/2+ | 99 | 7.5YR 4/6 | 1 | C | M | S | other redox staining around metal pieces. |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks: Iron chunks found in TP creating iron staining (railroad spikes, chunks of iron, nails, etc)

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | X | N/A |
| Water Table Present? | | X | N/A |
| Saturation Present? (includes capillary fringe) | | X | N/A |

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

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

Remarks: Dry upland, well drained soils, fill.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/5/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 41

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill, swale Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.820351° Long: -124.178848° Datum: WGS 84

Soil Map Unit Name: Urban land-Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested/Shrub wetland

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 X No ___ | Is the Sampled Area within a Wetland? Yes X No ___ |
| Hydric Soil Present? | Yes X No ___ | |
| Wetland Hydrology Present? | Yes X No ___ | |

Remarks: WETS normal rainfall
TP excavated w/i swale, likely connected to wetland @ TP39 through buried culvert. Best described as PSS4ExOn. Connected to Hum Bay.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 80 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 80 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus armeniacus | 50 | ✓ | FAC |
| 2. Rubus ursinus | 10 | | FACU |
| 3. Lonicera involucrata | 15 | ✓ | FAC |
| 4. | | | |
| 5. | | | |
| | 75 | = Total Cover 37.5 / 15 | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 100* | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Litter and Duff from dense Morella canopy and rubus.

## SOIL

Sampling Point: TP4

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR3/1 | 100 | — | — | — | — | SL | |
| 5-9 | 10YR3/2 | 100 | — | — | — | — | LS | |
| 9-22+ | 2.5Y4/1 | 97 | 10YR4/6 | 3 | C | M | S | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- X 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 X No ___

Remarks: Positive AAD @ w/i 12in. Many roots.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5) ✓
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 3 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks: Swale within fill and upland areas.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/5/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP42

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): none Slope (%): 25-30

Subregion (LRR): A, MLRA-4B Lat: 40.820367° Long: -124.178802° Datum: WGS 84

Soil Map Unit Name: Urban land-Anthraltic Xerorthents assoc. 0-2% 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 ✓ 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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS normal rainfall Upland pit for TP41 on swale bank

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 50 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus armeniacus | 70 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | 70 | | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Cortaderia jubata | 40 | ✓ | FACU |
| 2. Scirpus microcarpus | 10 | | OBL |
| 3. Epilobium ciliatum | 2 | | FACW |
| 4. Anthoxanthum odoratum | 7 | | FACU |
| 5. Polystichum munitum | 20 | ✓ | FACU |
| 6. Achillea millefolium | 5 | | FACU |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover 42/16.8 | 84 | | |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 16*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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 | ___ | x 3 = ___ |
| FACU species | ___ | x 4 = ___ |
| UPL species | ___ | x 5 = ___ |
| Column Totals: | ___ (A) | ___ (B) |

Prevalence Index = B/A = ___

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Litter and duff from morella + Rubus

## SOIL

Sampling Point: TP42

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-27 | 10YR 3/2 | 100 | 7.5YR 4/6 | <1 | C | M | SL | occ. gravel |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks: Bricks - Fill.
Brick, cobble

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 27

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 22

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

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

Remarks: Dry swale bank approx. 2ft from wetland edge.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT    City/County: Humboldt    Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District    State: CA    Sampling Point: TP43

Investigator(s): Joseph Saler, Cindy Wilcox    Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill    Local relief (concave, convex, none): Concave    Slope (%): 0-1

Subregion (LRR): A, MLRA-4B    Lat: 40.819992    Long: -124.178802    Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents 0-2%    NWI classification: Freshwater Forested Shrub wetland

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 X No ___ | Is the Sampled Area within a Wetland? Yes X No ___ |
| Hydric Soil Present? | Yes X No ___ | |
| Wetland Hydrology Present? | Yes X No ___ | |

Remarks: WETS normal rainfall. See TP4 + TP44 for upland conditions surrounding. TP excavated in 3p slough/drainage way. Best described as PFO1Hx+hOg.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 85 | ✓ | FACW |
| 2. Frangula purshiana ssp. purshiana | 20 | | FAC |
| 3. Salix hookeriana | 10 | | FACW |
| 4. | | | |
| | 115 | = Total Cover | 57.5 / 34.5 |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 25 | ✓ | FAC |
| 2. Baccharis glutinosa | 22 | ✓ | OBL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 47 | = Total Cover | 23.5 / 9.4 |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Sonchus oleraceus | 5 | ✓ | UPL |
| 2. Cardamine oligosperma | 4 | ✓ | FAC |
| 3.–11. | | | |
| | 9 | = Total Cover | 4.5 / 1.8 |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 91

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: * Muck and peat. Sparsely vegetated concave surface.

## SOIL

Sampling Point: Tp 43

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | Black | 90 | | | | | Peat | W/ pockets of muck |
| | 2.5Y 2.5/1 | 10 | | | | | Mu | Much color |
| 10-13+ | 10Y 2.5/1 | 100 | | | | | LS | |

[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)
- X Hydrogen Sulfide (A4)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- X 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:
Positive AAD reaction within 12 in of soil surface.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes X No ___ Depth (inches): 1

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks:
Standing water within excavated drainage / slough channel.

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 44

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bayside fill Local relief (concave, convex, none): None Slope (%): 20

Subregion (LRR): A, MLRA-4B Lat: 40.819952 Long: -124.178839 Datum: WGS 84

Soil Map Unit Name: 1014 Urbanland Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested/Shrub wetland

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 X | Is the Sampled Area within a Wetland? | Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | | |
| Wetland Hydrology Present? | Yes ____ No X | | |

Remarks: WETS normal rainfall
TP excavated ~30 inches above standing water and 36 inches south of wetland edge.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Frangula purshiana ssp. purshiana | 30 | ✓ | FAC |
| 2. Salix hookeriana | 50 | ✓ | FACW |
| 3. Morella californica | 15 | | FACW |
| 4. | | | |
| | 95 | = Total Cover | 47.5 / 19 |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus ursinus | 50 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 50 | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Polystichum munitum | 30 | ✓ | FACU |
| 2. Galium aparine | 4 | | FACU |
| 3. Sonchus oleraceus | 4 | | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 38 | = Total Cover | 19 / 7.6 |
| **Woody Vine Stratum (Plot size: ______)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 62*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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 ______ | x 3 = ______ |
| FACU species ______ | x 4 = ______ |
| UPL species ______ | x 5 = ______ |
| Column Totals: ______ (A) | ______ (B) |

Prevalence Index = B/A = ______

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks:
* Litter and duff.

Sampling Point: TP44

## SOIL

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-14 | 2.5Y 2.5/1 | 100 | | | | | SL | |
| 14-21 | 2.5Y 3/2 | 99 | 7.5YR 5/8 | 1 | | | SL | |
| 21-28 | 2.5Y 5/2 | 80 | 7.5YR 5/8 | 20 | C | M | LS | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 45

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Bay side Peninsula spit Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819634° Long: -124.179067° Datum: WGS 84

Soil Map Unit Name: 1014 Urban land Anthraltic Xerorthents 0-2% NWI classification: Freshwater Forested Shrub wetland

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 X | No ____ |
| Hydric Soil Present? | Yes X | No ____ |
| Wetland Hydrology Present? | Yes X | No ____ |

Is the Sampled Area within a Wetland? Yes X No ____

Remarks: WETS normal rainfall
TP excavated in small, isolated depression. Best described as PSS1A+Bs+X On

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 42 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 42 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus armeniacus | 20 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 20 | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Oenanthe sarmentosa | 85 | ✓ | OBL |
| 2. Rumex crispus | 2 | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 87 | = Total Cover | |
| **Woody Vine Stratum (Plot size: 5ft)** | | | |
| 1. Lonicera hispidula | 2 | | |
| 2. | | | |
| | 2 | = Total Cover | |

% Bare Ground in Herb Stratum 13*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: * Litter + duff

## SOIL

Sampling Point: TP 45

SYTN Consulting Engineers & Geologists, Inc

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-7 | 2.5Y 2.5/1 | 100 | | | | | Peat | |
| 7-12 | 2.5Y 3/1 | 100 | | | | | SiL | |
| 12-17+ | 2.5Y 4/1 | 85 | 10YR 5/8 | 15 | C | M | 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)
- ✓ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- X 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 X No ___

Remarks:

Positive AAD reaction w/i 12 inches of surface (9-12 in)

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 4in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): surface

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 46

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/Spit, Bayside Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.819624 Long: -124.179131 Datum: WGS 84

Soil Map Unit Name: 1014 Urban land Anthraltic xerorthents assoc. 0-2% NWI classification: Freshwater forested shrub wetland

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 X | Is the Sampled Area within a Wetland? | Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | | |
| Wetland Hydrology Present? | Yes ___ No X | | |

Remarks: WETS normal rainfall

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Baccharis pilularis ssp. consanguinea | 20 | ✓ | UPL |
| 2. Salix hookeriana | 30 | ✓ | FACW |
| 3. Rubus armeniacus | 30 | ✓ | FAC |
| 4. | | | |
| 5. | | | |
| | 80 | = Total Cover | 40 / 16 |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Briza maxima | 8 | | UPL |
| 2. Anthoxanthum odoratum | 7 | | FACU |
| 3. Vicia sativa | 10 | ✓ | UPL |
| 4. Myosotis discolor | 3 | | FAC |
| 5. Plantago major | 1 | | FAC |
| 6. Rumex crispus | 1 | | FAC |
| 7. Sonchus oleraceus | 1 | | UPL |
| 8. Geranium dissectum | 3 | | UPL |
| 9. Plantago lanceolata | 3 | | FACU |
| 10. Holcus lanatus | 1 | | FAC |
| 11. Galium aparine | 3 | | FACU |
| | 41 | = Total Cover | 20.5 / 8.2 |
| **Woody Vine Stratum (Plot size: 5ft)** | | | |
| 1. Lonicera hispidula | 20 | ✓ | FACU |
| 2. | | | |
| | 20 | = Total Cover | |

% Bare Ground in Herb Stratum 59*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ 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 X

Remarks:
* Litter, duff from Rubus + shrubs. Some bare gravels

## SOIL

Sampling Point: TP46

SYN Consulting Engineers & Geologists, Inc

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-15 | 10YR 3/2 | 100 | | | | | SiL | w/ occ gravel |
| 15-24+ | 5Y 4/1 | 90 | mixed matrix | | Fill | | grts | compacted gravel |
| | 10YR 3/2 | 10 | | | | | | w/ pockets of clay |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
__ 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) **(except MLRA 1)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ 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 X

Remarks:

Old road surface 15-24+?

## 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)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Sparsely Vegetated Concave Surface (B8)
__ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
__ Salt Crust (B11)
__ 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)
__ Stunted or Stressed Plants (D1) **(LRR A)**
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
__ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) **(LRR A)**
__ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A
Water Table Present? Yes ___ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:

Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP47

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR): A, MLRA-4B Lat: 40.819178 Long: -124.179663 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic xerorthents 0-2% NWI classification: Freshwater Forested Shrub wetland

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 ✓ 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 X | No ___ |
| Hydric Soil Present? | Yes X | No ___ |
| Wetland Hydrology Present? | Yes X | No ___ |
| Is the Sampled Area within a Wetland? | Yes X | No ___ |

Remarks: WETS normal rainfall No above ground connectivity to Humboldt Bay. Best described as Culvert outflow depression. Cobbles. swpp feature? PEM1A+BxOn

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 5 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | 5 | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Agrostis stolonifera | 93 | ✓ | FAC |
| 2. Lotus corniculatus | 5 | | FAC |
| 3. Cyperus eragrostis | 2 | | FACW |
| 4. Festuca perennis | 1 | | FAC |
| 5. Leontodon saxatilis | 1 | | FACU |
| 6. Trifolium repens | 3 | | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 105 | | 52.5 / 21 |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: Dense herbaceous cover within depression.

## SOIL

Sampling Point: TP47

Consulting Engineers & Geologists, Inc

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 3/2 | 100 | — | — | — | — | L | |
| 3-12+ | 2.5Y 4/2 | 100 | — | — | — | — | CoLS | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- X 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 X No ___

Remarks:
- Positive AAD reaction in upper 12 inches.
- Extremely compacted cobble and boulders @ 12 in.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 7 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks:
Hydrology confined to small depression at end of culvert

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP48

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit, bayside Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819159 Long: -124.179666 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% NWI classification: Freshwater Forested Shrub wetland

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 ✓ 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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS normal rainfall
upland for TP47

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 20 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | 20 | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Anthoxanthum odoratum | 35 | ✓ | FACU |
| 2. Cortaderia jubata | 25 | ✓ | FACU |
| 3. Leontodon saxatilis | 6 | | FACU |
| 4. Holcus lanatus | 15 | | FAC |
| 5. Plantago lanceolata | 2 | | FACU |
| 6. Lotus corniculatus | 10 | | FAC |
| 7. Cirsium vulgare | 1 | | FACU |
| 8. Vicia villosa | 12 | | UPL |
| 9. Festuca arundinacea | 3 | | FAC |
| 10. Symphyotrichum chilense | 5 | | FAC |
| 11. Daucus carota | 1 | | FACU |
| = Total Cover | 115 | | 57.5 / 23 |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks: Dense herbaceous veg.

## SOIL

Sampling Point: TP 48

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 3/2 | 100 | | | | | SL | |
| 3-23 | 10YR 3/2 | 100 | | | | | gr SL | compacted |
| 23-24+ | 2.5Y 4/1 | 95 | 10YR 3/2 | 5 | – | – | gr SCL | very compacted |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 24"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 16"

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP49

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.818947 Long: -124.180274 Datum: WGS 84

Soil Map Unit Name: 1014 Urbanland Anthraltic Xerorthents assoc. 0-2% 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 ✓ 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 X No ~~____~~ | Is the Sampled Area within a Wetland? | Yes ____ No X *Meets CCC wetland definition |
| Hydric Soil Present? | Yes ____ No X | | |
| Wetland Hydrology Present? | Yes X No ____ | | |

Remarks: WETS normal rainfall
TP excavated in mowed industrial field. In slight depression

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Mentha pulegium | 55 | ✓ | OBL |
| 2. Rumex crispus | 20 | ✓ | FAC |
| 3. Festuca perennis | 2 | | FAC |
| 4. Cyperus eragrostis | 1 | | FACW |
| 5. Eleocharis macrostachya | 5 | | NL |
| 6. Leontodon saxatilis | 1 | | FACU |
| 7. Lotus corniculatus | 2 | | FAC |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 86 = Total Cover | 43 / 17.2 | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |

% Bare Ground in Herb Stratum 30*

Remarks:
*Bare soils, likely reflecting compacted gravel.

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

## SOIL

Sampling Point: TP 49

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/1 | 100 | | | | | SL | |
| 6-16 | 2.5Y5/1 | 99 | 10YR 4/6 | 1 | | | gravels very compacted w/ clay pockets | |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks: clay pockets have low % of redox, mostly gravel & cobbles.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 4"

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

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

Remarks: Soils become drier the deeper the hole - perched saturation, but no water table. most likely from current rainfall - not attached to a water table. Not likely sustained after current rains.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP50

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): convex Slope (%): 10

Subregion (LRR): A, MLRA-4B Lat: 40.818988 Long: -124.180302 Datum: WGS 84

Soil Map Unit Name: 1014 Urbanland Anthraltic Xerorthents assoc. 0-2% 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 ✓ 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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS normal rainfall
Upland pit for TP49 in upland vegetation

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Briza maxima | 25 | ✓ | UPL |
| 2. Plantago lanceolata | 15 | | FACU |
| 3. Hypochaeris radicata | 5 | | FACU |
| 4. Linum bienne | 10 | | UPL |
| 5. Anthoxanthum odoratum | 2 | | FACU |
| 6. Leontodon saxatilis | 1 | | FACU |
| 7. Hypochaeris glabra | 2 | | UPL |
| 8. Bromus hordaceus | 5 | | FACU |
| 9. Festuca myuros | 20 | ✓ | FACU |
| 10. Aira caryophyllea | 5 | | FACU |
| 11. Silene gallica | 4 | | UPL |
| = Total Cover | 94 | 47 / 18.8 | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 6 *

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* Moss and gravel.

## SOIL

Sampling Point: TP50

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 3/1 | 100 | | | | | SL | |
| 5-16 | 2.5Y 5/1 | 100 | | | | | grlcobblyLS | very compacted |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- __ 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) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X

Remarks: Same soils as TP49, but no redox

## 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)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ____ No X

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

Remarks: Gravelly upland.

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP51

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): slight concave Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.819118 Long: -124.180744 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% 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 X | No ____ |
| Hydric Soil Present? | Yes ____ | No X |
| Wetland Hydrology Present? | Yes X | No ____ |

Is the Sampled Area within a Wetland? Yes ____ No X*

Remarks: WETS normal rainfall
slight depression in industrial mowed field. Possibly the remains of a hot burn pile.
* Meets CCC 1-p definition

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Salix hookeriana | 8 | ✓ | FACW |
| 2. Rubus armeniacus | 10 | ✓ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | 18 | | 9 / 3.6 |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Festuca perennis | 4 | | FAC |
| 2. Mentha pulegium | 1 | | OBL |
| 3. Lotus corniculatus | 15 | | FAC |
| 4. Taraxacum officinale | 2 | | FACU |
| 5. Anthoxanthum odoratum | 5 | | FACU |
| 6. Agrostis stolonifera | 35 | ✓ | FAC |
| 7. Ranunculus repens | 30 | ✓ | FAC |
| 8. Trifolium repens | 15 | | FAC |
| 9. Rumex crispus | 1 | | FAC |
| 10. | | | |
| 11. | | | |
| = Total Cover | 109 | | 54.5 / 21.8 |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum Ø

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Dense herbaceous veg within slight depression.

## SOIL

Sampling Point: TPS1

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2.5/1 | 100 | | | | | Loam | |
| 10-17+ | 10YR 3/2 | 100 | | | | | SiCL | slag ~ 99% of horizon |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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** X

Remarks: In grassy field, thick topsoil. over burn slag pile

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): N/A |
| Water Table Present? | Yes ___ | No X | Depth (inches): N/A |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): N/A |

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

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

Remarks: No evidence of wetland hydrology, however hydrophytic vegetation dominance by non-native/invasive species meets FAC-Neutral test criteria

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 52 (veg)

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/Spit, Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819156 Long: -124.180682 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% 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 ✓ 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 X |
| Hydric Soil Present? | Yes ____ | No X |
| Wetland Hydrology Present? | Yes ____ | No X |
| Is the Sampled Area within a Wetland? | Yes ____ | No X |

Remarks: WETS normal rainfall

Veg only. See TP 51 for representative soils and hydrology.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 5') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Rubus armeniacus | 4 | | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 4 | = Total Cover | |

| Herb Stratum (Plot size: 5') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Anthoxanthum odoratum | 40 | ✓ | FACU |
| 2. Trifolium repens | 40 | ✓ | FAC |
| 3. Daucus carota | 12 | | FACU |
| 4. Achillea millefolium | 1 | | FACU |
| 5. Plantago lanceolata | 6 | | FACU |
| 6. Lotus corniculatus | 8 | | FAC |
| 7. Holcus lanatus | 10 | | FAC |
| 8. Fragaria chiloensis | 1 | | FACU |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 118 | = Total Cover 23.6 59 | |

| Woody Vine Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 0

**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 | ____ | x 3 = ____ |
| FACU species | ____ | x 4 = ____ |
| UPL species | ____ | x 5 = ____ |
| Column Totals: | ____ (A) | ____ (B) |

Prevalence Index = B/A = ____

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks: Dense vegetation cover. Shrub stratum not counted in dominance calc as it is less than 5% cover.

## SOIL

Sampling Point: TP 52 (veg)

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks: Veg sampled only. See TP 51 for representative soils.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks: Veg sampled only. see TP 51 for representative hydrologic conditions

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/12/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP53

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, bayside Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819489 Long: -124.180644 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic xerorthents assoc. 0-2% 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 ✓ 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 X No ___ | | Is the Sampled Area within a Wetland? Yes X No ___ |
| Hydric Soil Present? Yes X No ___ | | |
| Wetland Hydrology Present? Yes X No ___ | | |

Remarks: WETS normal rainfall
Isolated 3p wetland. Best described as PSS1BsOn.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Salix hookeriana | 25 | ✓ | FACW |
| 2. Salix sitchensis | 15 | ✓ | FACW |
| 3. Rubus armeniacus | 25 | ✓ | FAC |
| 4. | | | |
| 5. | | | |
| | 65 | = Total Cover | 13/32.5 |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Festuca arundinacea | 20 | ✓ | FAC |
| 2. Symphyotrichum chilense | 7 | | FAC |
| 3. Holcus lanatus | 12 | | FAC |
| 4. Carex harfordii | 15 | | OBL |
| 5. Achillea millefolium | 3 | | FACU |
| 6. Anthoxanthum odoratum | 30 | ✓ | FACU |
| 7. Lotus corniculatus | 5 | | FAC |
| 8. Trifolium repens | 4 | | FAC |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 96 | = Total Cover | 19.2/48 |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 4%* | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:
* litter and thatch

SOIL

Sampling Point: TP 53

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-7 | 2.5Y 2.5/1 | 100 | — | — | — | — | SL | |
| 7-16 | 10YR 4/1 | 90 | 7.5YR 4/6 | 10 | C | M | SCL | bits of charcoal |
| 16-24+ | N 3/ | 100 | — | — | — | — | S | |

[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)
- ✓ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 21

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP54

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.819499 Long: -124.180599 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assc. 0-2% 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 ✓ 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 X | No ___ |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS normal rainfall
Next to railroad line, just outside of willow depression described in TP53

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Salix sitchensis | 15 | ✓ | FACW |
| 2. Salix hookeriana | 10 | ✓ | FACW |
| 3. Rubus armeniacus | 10 | ✓ | FAC |
| 4. | | | |
| 5. | | | |
| = Total Cover | 35 | 17.5 / 7 | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Juncus lescurii | 70 | ✓ | FACW |
| 2. Symphyotrichum chilense | 25 | ✓ | FAC |
| 3. Potentilla anserina | 4 | | OBL |
| 4. Holcus lanatus | 2 | | FAC |
| 5. Lotus corniculatus | 1 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 102 | 51 / 20.4 | |
| **Woody Vine Stratum (Plot size: )** | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Juncus lescurii dominance represents extent of 1p feature. See TP 55 (veg) for upland veg conditions.

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## SOIL

Sampling Point: TP5

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 3/2 | 100 | / | / | / | / | L | |
| 5-7 | 10YR 4/2 | 100 | | | / | / | Cogr LS | |
| 7-13 | 10YR 4/2 | 99 | 7.5YR 5/8 | 1 | C | M | S | pockets of brick, not redox + iron chunks |
| 13-19 | 10YR 2/1 | 100 | / | / | / | / | SiL | Slag, brick + debris ~80% |
| 19-24+ | 5GY 3/1 | 99 | 10YR 4/6 | 1 | C | m | C | w/ black organic flecks |
| | | | | | | | | no Hydrogen peroxide rxn. |
| | | | | | | | | |
| | | | | | | | | |

[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)
- __ 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) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X

Remarks:

## 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)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) (LRR A)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (LRR A)
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ____ No X

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

Remarks:

Upland fill. No hydrology.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP55 (veg)

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Peninsula/Spit, Baysidefill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819469 Long: -124.180532 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | |
| Wetland Hydrology Present? | Yes ____ No X | |

Remarks: WETS normal rainfall
Veg sample only.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 2 | | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Anthoxanthum odoratum | 80 | ✓ | FACU |
| 2. Holcus lanatus | 22 | | FAC |
| 3. Vicia tetrasperma | 1 | | UPL |
| 4. Vicia sativa | 4 | | UPL |
| 5. Daucus carota | 1 | | FACU |
| 6. Symphyotrichum chilense | 2 | | FAC |
| 7. Briza maxima | 10 | | UPL |
| 8. Lotus corniculatus | 4 | | FAC |
| 9. Geranium dissectum | 1 | | UPL |
| 10. Carex harfordii | 2 | | OBL |
| 11. | | | |
| | 127 | = Total Cover | 25.4 / 63.5 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 0 | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Multiple layers of herbaceous veg. Dense.

## SOIL

Sampling Point: TP55 (veg)

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

Veg sample only. See TP 54 for representative soil conditions.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:

Veg sample only. See TP 54 for representative soil conditions.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP56

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula Spit Local relief (concave, convex, none): none Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819379 Long: -124.180675 Datum: WGS 84

Soil Map Unit Name: 1014 Urbanland Anthraltic Xerorthents assoc 0-2% 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 X | No ____ |
| Hydric Soil Present? | Yes ____ | No X |
| Wetland Hydrology Present? | Yes ____ | No X |

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: WETS normal rainfall
Veg + hydrology sampled only. See TP51 for representative soil conditions.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Agrostis stolonifera | 35 | ✓ | FAC |
| 2. Festuca perennis | 25 | ✓ | FAC |
| 3. Rumex crispus | 14 | | FAC |
| 4. Lotus corniculatus | 25 | ✓ | FAC |
| 5. Geranium dissectum | 15 | | UPL |
| 6. Mentha pulegium | 3 | | OBL |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 117 | | 58.5 / 23.4 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- __ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- __ 3 - Prevalence Index is ≤3.0[1]
- __ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ 5 - Wetland Non-Vascular Plants[1]
- __ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Dense herbaceous veg. Regularly mowed as a fire break.

see TP 51

**SOIL** Sampling Point: TP56

Consulting Engineers & Geologists, Inc.

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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: prelim invest - soils similar to TP 51
See TP 51 for Soils

**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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A
Water Table Present? Yes ___ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP57

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, Bayside, fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819395 Long: -124.179674 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assoc. 0-2% 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 X | No ______ |
| Hydric Soil Present? | Yes X | No ______ |
| Wetland Hydrology Present? | Yes X | No ______ |
| Is the Sampled Area within a Wetland? | Yes X | No ______ |

Remarks: WETS normal rainfall
TP excavated within 3P wetland, best described as PEM1A+BsOg

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Distichlis spicata | 80 | ✓ | FACW |
| 2. Alopecurus geniculatus | 12 | | OBL |
| 3. Eleocharis macrostachya | 5 | | * NL (OBL) |
| 4. Rumex crispus | 3 | | FAC |
| 5. Festuca perennis | 1 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 101 | = Total Cover | 50.5 / 20.2 |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 5%*

**Dominance Test worksheet:**

| | | |
|---|---|---|
| Number of Dominant Species That Are OBL, FACW, or FAC: | 1 | (A) |
| Total Number of Dominant Species Across All Strata: | 1 | (B) |
| Percent of Dominant Species That Are OBL, FACW, or FAC: | 100% | (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:**

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ______

Remarks: * Standing water/mulch. * Eleocharis macrostachya most likely OBL even though it is NL!

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## SOIL

Sampling Point: TP 57

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 2.5Y 3/1 | 100 | — | — | — | — | MuP | Many roots |
| 5-16+ | N5/ | 100 | — | — | — | — | CoS | Many cobbles. |

[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)
- ✓ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes X No ___ Depth (inches): 0.5 in

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks: Hydrology present within slight depression containing wetland.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 58

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819346 Long: -124.179781 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assoc. 0-2% 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 X | No |
| Hydric Soil Present? | Yes | No X |
| Wetland Hydrology Present? | Yes X | No |

Is the Sampled Area within a Wetland? Yes ____ No X*

Remarks: WETS normal rainfall

TP excavated at slightly higher elevation than 3p. wetland.

* Meets CCC 1-p definition.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Alopecurus geniculatus | 25 | ✓ | OBL |
| 2. Mentha pulegium | 10 | | OBL |
| 3. Juncus bufonius | 35 | ✓ | FACW |
| 4. Leontodon saxatilis | 10 | | FACU |
| 5. Festuca perennis | 7 | | FAC |
| 6. Isolepis cernua | 1 | | OBL |
| 7. Lotus corniculatus | 8 | | FAC |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 96 | 48 / 19.2 | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 5%

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: Hydrophytic veg restricted to slightly lower elevation, including higher than 3p wetland recorded at TP 57

## SOIL

Sampling Point: TP 58

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-1 | 10YR3/2 | 100 | | | | | Peat | |
| 1-9 | 10YR3/2 | 100 | | | | | GrLS | |
| 9-14+ | 10Y 4/1 | 100 | | | | | VGoGrLS | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:
Extremely compacted boulder /cabble at 14 in. Cannot excavate beyond 14 in depth.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 12.5

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 6 in

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

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

Remarks:
Wetland hydrology diminishing away from 3p wetland shown at TP57

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP59

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): none Slope (%): 3-5

Subregion (LRR): A, MLRA-4B Lat: 40.819364 Long: -124.179829 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic xerorthents assoc 0-2% 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 ✓ 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 X | Is the Sampled Area within a Wetland? Yes ____ No X | |
| Hydric Soil Present? Yes ____ No X | | |
| Wetland Hydrology Present? Yes ____ No X | | |

Remarks: WETS normal rainfall
TP excavated approx. 3ft from Hydrophytic veg dominance shown in TP 58.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Briza maxima | 60 | ✓ | UPL |
| 2. Plantago lanceolata | 10 | | FACU |
| 3. Geranium dissectum | 3 | | UPL |
| 4. Anthoxanthum odoratum | 25 | ✓ | FACU |
| 5. Bromus diandrus | 2 | | UPL |
| 6. Trifolium subterraneum | 2 | | UPL |
| 7. Vicia sativa | 1 | | UPL |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 103 | | 51.5 / 20.6 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |
| % Bare Ground in Herb Stratum 0 | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks: Upland veg dominance reflective of majority of grassy, former industrial field.

## SOIL

Sampling Point: TP59

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/1 | 100 | | | | | SCL | |
| 12-16+ | 10Y 4/1 | >99 | 10YR4/6 | <1% | C | M/PL | ExCoGrLS | redox on cobble surfaces |

[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)
___ 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) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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 X

Remarks:

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) **(LRR A)**
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) **(LRR A)**
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): see note.

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

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

Remarks:
Slightly raised above TP 58. No hydrology present. Pockets of saturation from 10-12 in above compacted gravel layer. likely a result of recent rainfall.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP60

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819883 Long: -124.179390 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc 0-2% NWI classification: Freshwater Forested/Shrub wetland

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 X No ______ | Is the Sampled Area within a Wetland? Yes X No ______ | |
| Hydric Soil Present? Yes X No ______ | | |
| Wetland Hydrology Present? Yes X No ______ | | |

Remarks: WETS normal rainfall
Slight swale through willow/blackberry veg. community. Best described as PSS1+4B50g No aboveground connectivity

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 85 | ✓ | FACW |
| 2. Salix hookeriana | 20 | | FACW |
| 3. | | | |
| 4. | | | |
| | 105 | = Total Cover | 52.5 / 21 |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 40 | ✓ | FAC |
| 2. Rubus ursinus | 2 | | FACU |
| 3. Lonicera involucrata | 5 | | FAC |
| 4. | | | |
| 5. | | | |
| | 47 | = Total Cover | 23.5 / 9.4 |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 100% * | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ______

Remarks:
Duff, litter + debris from dense tree and shrub canopy. No herbaceous species present.

## SOIL

Sampling Point: TP60

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 4/1 | 100 | | | | | MU Peat | |
| 2-16 | 2.5Y 3/1 | 100 | | | | | MUS | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ✓ 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 X No ___

Remarks:
Other - a.a.d. reaction w/in 12"

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 4"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 1"

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

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 61

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/Spit, Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819930 Long: -124.179396 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents 0-2% NWI classification: Freshwater Forested/Shrub wetland

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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
TP excavated approx. 5ft from low pt. containing wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 90 | ✓ | FACW |
| 2. Morella californica | 5 | | FACW |
| 3. | | | |
| 4. | | | |
| | 95 = Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus ursinus | 25 | ✓ | FACU |
| 2. Rubus armeniacus | 30 | ✓ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 55 = Total Cover | 27.5 / 11 | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Anthoxanthum odoratum | 12 | ✓ | FACU |
| 2. Cortaderia jubata | 10 | ✓ | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 22 = Total Cover | 11 / 4.4 | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. Hedera helix | 2 | | |
| 2. | | | |
| | 2 = Total Cover | | |

% Bare Ground in Herb Stratum 78*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* Duff, Litter from willow and shrubs. Veg composition representative of area surrounding the wetland.

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## SOIL

Sampling Point: TP61

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 3/1 | 100 | | | | | SCL | |
| 5-15 | 2.5Y 4/2 | 100 | | | | | Gr LS | compacted |
| 15-28+ | 2.5Y 4/2 | 87 | 10YR 5/6 | 10 | C | M | S | |
| | | | 7.5Y 4/6 | 3 | C | M | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 25 in

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 22 in

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

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

Remarks:
TP excavated approx. 12 in elev. above 3p wetland. No hydrology observed

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/13/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP62

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit-bayside Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.819122 Long: -124.182003 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents Assoc. 0-20% 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
TP excavated within willow patch at lowest point.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix sitchensis | 80 | ✓ | FACW |
| 2. Pinus radiata | 10 | | UPL |
| 3. Morella californica | 10 | | FACW |
| 4. | | | |
| | 100 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Cortaderia jubata | 50 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 50 | = Total Cover | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. Hedera helix | 2 | | |
| 2. | | | |
| | 2 | = Total Cover | |

% Bare Ground in Herb Stratum 50%*

**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 ___ | x 3 = ___ |
| FACU species ___ | x 4 = ___ |
| UPL species ___ | x 5 = ___ |
| Column Totals: ___ (A) | ___ (B) |

Prevalence Index = B/A = ___

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* Litter, duff + thatch from willows and pampas grass

## SOIL

Sampling Point: TP62

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**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 |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 2/1 | 100 | — | — | — | — | L | |
| 5-17 | 10YR 3/2 | 100 | — | — | — | — | LS | Mixed fill |
| 17-24+ | 10YR 4/2 | 90 | 5Y 4/2 | 10 | D | m | S | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:
Well drained, No hydrology indicators.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/14/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP63 (veg)

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819585 Long: -124.182949 Datum: WGS 84

Soil Map Unit Name: Urban land-Anthraltic Xerothents assoc 0-2% 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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS normal rainfall
Veg sample only. See TP 62 for representative soil + Hydrology.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 80 | ✓ | FACW |
| 2. Morella californica | 10 | | FACW |
| 3. Pinus radiata | 10 | | UPL |
| 4. | | | |
| | 100 | = Total Cover | 50 / 20 |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 12 | ✓ | FACU |
| 2. Cotoneaster lacteus | 8 | ✓ | UPL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 20 | = Total Cover | 50 / 4 |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Anthoxanthum odoratum | 5 | | FACU |
| 2. Holcus lanatus | 6 | | FAC |
| 3. Cortaderia jubata | 20 | ✓ | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 31 | = Total Cover | 15.5 / 6.2 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. Hedera helix | 1 | | |
| 2. | | | |
| | 1 | = Total Cover | |

% Bare Ground in Herb Stratum 69*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks:
Veg representative of upland willow patches in the area
* Litter and duff from willow and Cortaderia

## SOIL

Sampling Point: TP 63 (veg)

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Veg only. See TP 62 for representative soil conditions.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**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:

Veg only. See TP 62 for representative hydrology conditions.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/14/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP64

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.819481 Long: -124.183652 Datum: WGS 84

Soil Map Unit Name: Urbanland-Anthraltic Xerorthents assoc. 0-2% 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 X | No ___ |
| Hydric Soil Present? | Yes X | No ___ |
| Wetland Hydrology Present? | Yes X | No ___ |

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: WETS normal rainfall TP excavated within depressed foundation of former industrial facilities. Surrounded by concrete.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix lasiandra | 60 | ✓ | FACW |
| 2. Morella californica | 10 | | FACW |
| 3. | | | |
| 4. | | | |
| | 70 | = Total Cover 35/14 | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Typha latifolia | 8 | ✓ | OBL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 8 | = Total Cover | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 92*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:
* Litter and mulch/peat.

## SOIL

Sampling Point: TP 64

Consulting Engineers & Geologists, Inc

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/1 | 100 | | | | | MuP | |
| 6-12 | 2.5Y 3/2 | 100 | | | | | MuS | |
| 12-18+ | 10Y 3/1 | 100 | — | — | — | — | S | |

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- X 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 X No ___

Remarks:

* Positive AAD at 4inch depth

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): N/A |
| Water Table Present? | Yes X | No ___ | Depth (inches): 3 in |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): Surface |

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

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

Remarks:

wetland hydrology restricted to rectangular, depressed former foundation.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/14/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP65

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, fill. Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR): A, MLRA-4B Lat: 40.819480 Long: -124.183669 Datum: WGS 84

Soil Map Unit Name: Urban land-Anthraltic Xerorthents assoc. 0-2% 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 ✓ 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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS normal rainfall
Cut face slope at edge of concrete

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Morella californica | 20 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 20 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Cortaderia jubata | 40 | ✓ | FACU |
| 2. Anthoxanthum odoratum | 7 | | FACU |
| 3. Holcus lanatus | 25 | ✓ | FAC |
| 4. Briza maxima | 5 | | UPL |
| 5. Lotus corniculatus | 2 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 79 | = Total Cover 39.5 / 15.8 | |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. Hedera helix | 5 | ✓ | FACU |
| 2. | | | |
| | 5 | = Total Cover | |

% Bare Ground in Herb Stratum 21*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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 | ___ | x 3 = ___ |
| FACU species | ___ | x 4 = ___ |
| UPL species | ___ | x 5 = ___ |
| Column Totals: | ___ (A) | ___ (B) |

Prevalence Index = B/A = ___

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* Duff + gravel
* Willow rooted in wetland not representative of upland conditions surrounding wetland with former foundation.

## SOIL

Sampling Point: TP 65

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 2.5Y 2.5/1 | 100 | | | | | L | Many fine roots |
| 3-24+ | 2.5Y 4/2 | 100 | | | | | GrLS | with wood, charcoal |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks:

No hydrology. Hydrology restricted to depression as recorded at TP 64.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/14/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP66

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

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

Subregion (LRR): A, MLRA-4B Lat: 40.818237 Long: -124.185179 Datum: WGS 84

Soil Map Unit Name: Urban land - Anthraltic Xerorthents assoc. 0-2% 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 ✓ 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
upland pit for EMTI TP7. On hillslope above drainage

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Salix sitchensis | 50 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 50 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 40 | ✓ | FAC |
| 2. Rubus ursinus | 2 | | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 42 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Cortaderia jubata | 70 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 70 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: 5) | | | |
| 1. Hedera helix | 5 | ✓ | FACU |
| 2. | | | |
| | 5 | = Total Cover | |

% Bare Ground in Herb Stratum 30*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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 ___ | x 3 = ___ |
| FACU species ___ | x 4 = ___ |
| UPL species ___ | x 5 = ___ |
| Column Totals: ___ (A) | ___ (B) |

Prevalence Index = B/A = ___

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Litter, duff and thatch, primarily from cortaderia. Veg composition representative of upland around 3p wetland.

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## SOIL

Sampling Point: TP66

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 3/1 | 100 | | | | | SL | |
| 3-24 | 10YR 4/2 | 100 | | | | | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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 X

Remarks:

uniform sandy soils

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:

Well drained sandy slope.

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/14/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP67

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Peninsula, Ind. fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.817353 Long: -124.185955 Datum: WGS 84

Soil Map Unit Name: Urbanland - Anthraltic Xerorthents assoc 0-2% 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 X No ____ | Is the Sampled Area within a Wetland? | Yes ____ No X* Meets CCC wetland definition |
| Hydric Soil Present? Yes ____ No X | | |
| Wetland Hydrology Present? Yes X No ____ | | |

Remarks: WETS normal rainfall
High Base of hillslope, slight drainage parallel to N Bay View st. W/ slightly depressed swale.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus armeniacus | 15 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15 | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Juncus effusus | 20 | ✓ | FACW |
| 2. Holcus lanatus | 50 | ✓ | FAC |
| 3. Agrostis stolonifera | 15 | | FAC |
| 4. Anthoxanthum odoratum | 10 | | FACU |
| 5. Equisetum laevigatum | 1 | | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 96 | = Total Cover | 48 / 19.2 |
| **Woody Vine Stratum (Plot size: ____)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 5*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:
* Thatch

SNR Consulting Engineers & Geologists, Inc

## SOIL

Sampling Point: TPL7

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 2/1 | 100 | — | — | — | — | MuP | Decomposing sawdust/wood. |
| 3-11 | 2.5Y 4/2 | 100 | — | — | — | — | GrLS | w/ woody debris, brick + cobble |
| 11-24+ | 2.5Y 4/2 | 80 | 2.5Y 4/3 | 20 | C | M | S | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 11.75 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10 in

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

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

Remarks:

Hydrology indicators restricted to swale.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/14/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP68

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 7

Subregion (LRR): A, MLRA-4B Lat: 40.817366 Long: -124.185976 Datum: WGS 84

Soil Map Unit Name: Urban land-Anthraltic Xerorthents assoc 0-2%  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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS normal rainfall
Hillslope above TP67

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 30 | ✓ | FAC |
| 2. Cotoneaster lacteus | 25 | ✓ | UPL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | 55 | 27.5 / 11 | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Anthoxanthum odoratum | 65 | ✓ | FACU |
| 2. Fragaria vesca | 34 | ✓ | FACU |
| 3. Holcus lanatus | 8 | | FAC |
| 4. Geranium dissectum | 1 | | UPL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 108 | 54 / 21.6 | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Vegetation composition representative of upland slope.

## SOIL

Sampling Point: TP 68

Consulting Engineers & Geologists, Inc

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | | | | | SL | |
| 2-16 | 2.5Y 3/2 | 100 | | | | | LS | |
| 16-24+ | 2.5Y 4/2 | 100 | | | | | S | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks:
well drained sandy slope.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/17/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 69

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/Spit, Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.815338 Long: -124.185182 Datum: WGS 84

Soil Map Unit Name: Urbanland-Anthraltic Xerothents assoc. 0-2% slopes 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 X | Is the Sampled Area within a Wetland? | Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | | |
| Wetland Hydrology Present? | Yes ____ No X | | |

Remarks: WETS normal rainfall

TP excavated in upland site approx. 5-10 ft from wetland edge.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus ursinus | 7 | ✓ | FACU |
| 2. Rubus armeniacus | 15 | ✓ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 22 | = Total Cover | 11 / 4.4 |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Anthoxanthum odoratum | 84 | ✓ | FACU |
| 2. Holcus lanatus | 6 | | FAC |
| 3. Helminthotheca echioides | 2 | | FAC |
| 4. Vicia sativa | 3 | | UPL |
| 5. Geranium dissectum | 1 | | UPL |
| 6. Lotus corniculatus | 4 | | FAC |
| 7. Juncus xiphioides | T | | OBL |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 100 | = Total Cover | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum Ø

**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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:

Some woody debris present ~10% cover. Veg. composition representative of open mowed, former industrial field.

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | | | | | SL | |
| 2-9 | 2.5Y 3/2 | 100 | | | | | LS | |
| 9-20 | 2.5Y 4/2 | 100 | | | | | CoGr LS | |
| 20-24+ | 2.5Y 4/2 | >99 | | | | | | w/ charcoal + shells |
| | 10YR 5/8 | <1 | | | | | | mixed fill |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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:
Mixed fill soils. Asphalt @ 18 inches

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A
Water Table Present? Yes ___ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:
Well drained upland location ~ 12 inches elevation above wetland as recorded on TP 13.

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/17/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP70

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.814670 Long: -124.185678 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assoc. 0-2% 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 ✓ 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes X No ___ | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
TP excavated in flat sandy area.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 20 | ✓ | FACU |
| 2. Lupinus arboreus | 15 | ✓ | UPL |
| 3. Rubus armeniacus | 3 | | FAC |
| 4. | | | |
| 5. | | | |
| | 38 | = Total Cover | 19 / 7.6 |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Potentilla anserina | 20 | ✓ | OBL |
| 2. Polystichum munitum | 20 | ✓ | FACU |
| 3. Equisetum arvense | 3 | | FAC |
| 4. Juncus breweri | 5 | | FACW |
| 5. Anthoxanthum odoratum | 30 | ✓ | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 78 | = Total Cover | 39 / 15.6 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 22* | | | |

Remarks: * Litter + Duff present.

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

## SOIL

Sampling Point: TP10

Consulting Engineers & Geologists, Inc

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 2.5Y 3/1 | 100 | | | | | SL | |
| 5-16 | 2.5Y 4/2 | 95 | 7.5YR 4/6 | 5 | C | M | LS | |
| 16-26+ | 2.5Y 4/2 | 80 | 7.5YR 4/6 | 2 | C | M | S | |
| | | | 7.5YR 5/8 | 18 | C | M | | |

[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)
- ✓ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks: Sandy soils appear to be developing hydric soil conditions on account of flat, fill topography. Saturation and water table too deep.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): 22

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): 19

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

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

Remarks: Elevated sandy soils. No evidence of hydrology.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/17/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 71

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA 4B Lat: 40.814903 Long: -124.185132 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% 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 X |
| Hydric Soil Present? | Yes ____ | No X |
| Wetland Hydrology Present? | Yes ____ | No X |

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: WETS normal rainfall
TP excavated in upland, mowed, fill, former industrial

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Cortaderia jubata | 15 | ✓ | FACU |
| 2. Distichlis spicata | 15 | ✓ | FACW |
| 3. Anthoxanthum odoratum | 40 | ✓ | FACU |
| 4. Holcus lanatus | 10 | | FAC |
| 5. Briza maxima | 5 | | UPL |
| 6. Avena barbata | 8 | | UPL |
| 7. Lotus corniculatus | 6 | | FAC |
| 8. Trifolium subterraneum | 5 | | UPL |
| 9. Geranium dissectum | 3 | | UPL |
| 10. Medicago polymorpha | 11 | | FACU |
| 11. Daucus carota | 2 | | FACU |
| = Total Cover | 123 | | 24.6 61.5 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Dense herbaceous veg. Regularly mowed.

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## SOIL

Sampling Point: TP 77

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Redox Features Type[1] | Redox Features Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 2.5Y3/1 | 100 | | | | | L | |
| 5-18 | 2.5Y4/1 | 92 | | | | | GrLS | Mixed fill. |
| | 10Y3/1 | 3 | | | | | | pockets throughout. |
| | 10YR4/3 | 5 | | | | | | pockets of fill/Shells |
| 18-24+ | 2.5Y4/1 | 100 | | | | | GrLS | Shells + fill, more compacted. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): 21 in

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

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

Remarks:
Elevated fill prism.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/17/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP72

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, bayside fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.814851 Long: -124.185277 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents 0-2% 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 X | No ___ |
| Hydric Soil Present? | Yes X | No ___ |
| Wetland Hydrology Present? | Yes X | No ___ |
| Is the Sampled Area within a Wetland? | Yes X | No ___ |

Remarks: WETS normal rainfall
TP excavated in depression adjacent to DI w/ saltmarsh vegetation. No tidegate at outfall.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Distichlis spicata | 90 | ✓ | FACW |
| 2. Potentilla anserina | 5 | | OBL |
| 3. Atriplex prostrata | 5 | | FAC |
| 4. Hordeum brachyantherum | 3 | | FACW |
| 5. Agrostis stolonifera | 10 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | 113 | | |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks:
Extremely dense saltgrass cover. DI adjacent with no tidegate at outfall pt. likely providing tidal influence.

## SOIL

Sampling Point: TP 72

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 7.5YR 2.5/1 | 100 | — | — | — | — | mu | |
| 2-16 | 10YR 8/2 | 99 | 10YR 4/6 | 1 | C | m | LS | w/ wood chunks, cobbles |
| 16-19+ | 10Y 4/1 | 100 | | | | | S | |

[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)
- [ ] 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) (**except MLRA 1**)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- [x] 2 cm Muck (A10)
- [ ] Red Parent Material (TF2)
- [ ] Very Shallow Dark Surface (TF12)
- [ ] 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 X No ___

Remarks: Hydric soils restricted to low point around DI.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- [ ] Salt Crust (B11)
- [ ] 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)
- [ ] Stunted or Stressed Plants (D1) (**LRR A**)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [x] FAC-Neutral Test (D5)
- [ ] Raised Ant Mounds (D6) (**LRR A**)
- [ ] Frost-Heave Hummocks (D7)

**Field Observations:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | X | N/A |
| Water Table Present? | | X | N/A |
| Saturation Present? (includes capillary fringe) | X | | 10 in |

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

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

Remarks:

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/17/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP13

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Peninsula/spit, bayside fill Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.814826 Long: -124.185185 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic Xerorthents assoc. 0-2% 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 X | No ____ |
| Hydric Soil Present? | Yes ____ | No X |
| Wetland Hydrology Present? | Yes X | No ____ |

Is the Sampled Area within a Wetland? Yes ____ No X * Meets CCC 1-p definition

Remarks: WETS normal rainfall
TP excavated in high salt marsh associated with DIS.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Spartina densiflora | 20 | ✓ | OBL |
| 2. Potentilla anserina | 8 | | OBL |
| 3. Atriplex prostrata | 15 | | FAC |
| 4. Salicornia pacifica | 15 | | OBL |
| 5. Distichlis spicata | 3 | | FACW |
| 6. Hordeum brachyantherum | 1 | | FACW |
| 7. Lotus corniculatus | 5 | | FAC |
| 8. Festuca perennis | 18 | ✓ | FAC |
| 9. Agrostis stolonifera | 30 | ✓ | FAC |
| 10. Bromus hordeaceus | 2 | | FACU |
| 11. | | | |
| | 116 | = Total Cover 23.2/58 | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Dense herbaceous vegetation. 5 saltmarsh indicator species present accounting for 61% of the cover.

## SOIL

Sampling Point: TP ~~7~~3

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR2/1 | 100 | — | — | — | — | L | |
| 3-9 | 10YR3/1 | 100 | | | | | LS | Fill |
| 9-24+ | 2.5Y2.5/1 | 90 | matrix Fill material | | | | LS | dark material -glyash? |
| | 10YR3/1 | 10 | | | | | | Occ. shells. Charcoal pieces |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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: Not A12 - 2.5Y/1 due to fill material brought in, not o.material accumulated onsite. recently disturbed? chose this site for the depression. Possibly

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes X No ______ Depth (inches): 8-13" 20" and below for watertable.

**Wetland Hydrology Present?** Yes X No ______

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

Remarks: could be tidally influenced - saturation depth not as strong @ low tide.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/17/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 74

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, Bayside fill Local relief (concave, convex, none): None Slope (%): 1%

Subregion (LRR): A, MLRA-4B Lat: 40.814275 Long: -124.185450 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic xerorthents assoc. 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
TP excavated in slightly raised area above wetland w/i willow patch. See TP 15 for wetland conditions

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Salix lasiandra | 50 | ✓ | FACW |
| 2. Salix hookeriana | 30 | ✓ | FACW |
| 3. Morella californica | 10 | | FACW |
| 4. | | | |
| | 90 | = Total Cover 45/18 | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 10 | ✓ | FACU |
| 2. Rubus armeniacus | 20 | ✓ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 30 | = Total Cover 15/6 | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Cortaderia jubata | 25 | ✓ | FACU |
| 2. Equisetum laevigatum | 1 | | FACW |
| 3. Juncus effusus | 3 | | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 29 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. Hedera helix | 40 | ✓ | FACU |
| 2. | | | |
| | 40 | = Total Cover | |

% Bare Ground in Herb Stratum 71*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (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 | ___ | x 3 = ___ |
| FACU species | ___ | x 4 = ___ |
| UPL species | ___ | x 5 = ___ |
| Column Totals: | ___ (A) | ___ (B) |

Prevalence Index = B/A = ___

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* litter, duff and hedera helix cover. Veg composition representative of upland portions of willow patch.

## SOIL

Sampling Point: TP74

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | — | — | — | — | Peat | w/ wood chunks |
| 2-3 | 10YR 2/1 | 100 | — | — | — | — | MS | |
| 3-9 | 10YR 2/1 | 100 | — | — | — | — | LS | |
| 9-24+ | 10YR 4/1 | 90 | 10YR 4/2 | 10 | C | M | S | |

[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)
___ 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) (**except MLRA 1**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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 X

Remarks:

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) (**LRR A**)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) (**LRR A**)
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks: Raised, no evidence of hydrology

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/18/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP75

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit, bayside fill Local relief (concave, convex, none): slight concavity Slope (%): 2-5

Subregion (LRR): A, MLRA-4B Lat: 40.814273 Long: -124.187155 Datum: WGS 84

Soil Map Unit Name: Urbanland - Anthraltic xerorthents 0-2% 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 ✓ 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 X | No ___ |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes X | No ___ |

Is the Sampled Area within a Wetland? Yes ___ No X

* Meets CCC 1-p definition

Remarks: WETS normal rainfall

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 80 | ✓ | FACW |
| 2. Salix sitchensis | 15 | | FACW |
| 3. | | | |
| 4. | | | |
| | 95 | = Total Cover | 47.5 / 19 |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Eleocharis macrostachya | 15 | ✓ | NL (OBL) |
| 2. Lotus corniculatus | 10 | ✓ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 25 | = Total Cover | 12.5 / 5 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ______

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- X 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ___

Remarks: Eleocharis macrostachya is not listed in ACOE manual, however obs. of this species in the north coast region suggest FACW or OBL designation and it is treated as such.

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## SOIL

Sampling Point: TP15

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 2/1 | 100 | — | — | — | — | Peat | |
| 3-4 | 10YR 3/1 | 100 | — | — | — | — | GrLS | |
| 8-14 | 2.5Y 2.5/1 | 100 | Fill | — | — | — | CoGrLS | w/ bricks, charcoal, bottom ash? |
| — | black charcoal ash? | | — | — | — | — | — | |
| 14-36 | 2.5Y 2.5/1 | | — | — | — | — | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

Stopped @ 36". A12 - not organic 2.5Y 2.5/1 color is sand color pm

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes X No ____

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

Remarks:

TP excavated within depression

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/18/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 76

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit, Bayside fill Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.814272 Long: -124.187374 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% 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 X No ______ | Is the Sampled Area within a Wetland? Yes ______ No X |
| Hydric Soil Present? | Yes X No ______ | |
| Wetland Hydrology Present? | Yes ______ No X | |

Remarks: WETS normal rainfall
TP excavated in Carex obnupta patch, slightly sloping.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30') | | | |
| 1. Salix hookeriana | 90 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 90 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Baccharis pilularis | 15 | ✓ | UPL |
| 2. Morella californica | 1 | | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 16 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Carex obnupta | 90 | ✓ | OBL |
| 2. Vicia sativa | 1 | | UPL |
| 3. Vicia villosa | 2 | | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 93 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. Hedera helix | 1 | | FACU |
| 2. | | | |
| | 1 | = Total Cover | |

% Bare Ground in Herb Stratum 17*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ______

Remarks:
* Litter and duff. Dense Carex obnupta cover.

Sampling Point: TP 7

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## SOIL

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 3/1 | 100 | — | — | — | — | Peat | |
| 8-24+ | 10YR 4/1 | 60 | 7.5YR 4/6 | 40 | C | M | S | 7.5YR5/8 brick fill chunks |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
✓ 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) (**except MLRA 1**)
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

__ 2 cm Muck (A10)
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ 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 X No ____

Remarks:

## 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)
__ Sediment Deposits (B2)
__ Drift Deposits (B3)
__ Algal Mat or Crust (B4)
__ Iron Deposits (B5)
__ Surface Soil Cracks (B6)
__ Inundation Visible on Aerial Imagery (B7)
__ Sparsely Vegetated Concave Surface (B8)
__ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
__ Salt Crust (B11)
__ 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)
__ Stunted or Stressed Plants (D1) (**LRR A**)
__ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

__ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
__ Drainage Patterns (B10)
__ Dry-Season Water Table (C2)
__ Saturation Visible on Aerial Imagery (C9)
__ Geomorphic Position (D2)
__ Shallow Aquitard (D3)
✓ FAC-Neutral Test (D5)
__ Raised Ant Mounds (D6) (**LRR A**)
__ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ____ No X

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

Remarks:

Sloping, no evidence of pooling or standing water at any time.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT  City/County: Humboldt  Sampling Date: 5/18/22

Applicant/Owner: Humboldt Bay Harbor District  State: CA  Sampling Point: TP77

Investigator(s): Joseph Saler, Cindy Wilcox  Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula, spit  Local relief (concave, convex, none): Concave  Slope (%): 0-1

Subregion (LRR): A, MLRA-4B  Lat: 40.814261  Long: -124.187129  Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents Assoc. 0-2%  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 X | No ___ |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes X | No ___ |

Is the Sampled Area within a Wetland? Yes ___ No X* Meets CCC 1-p definition

Remarks: WETS normal rainfall

TP excavated in depression low point. Depression exists between concrete/asphalt

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 30 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 30 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Lotus corniculatus | 40 | ✓ | FAC |
| 2. Eleocharis macrostachya | 1 | | * NL (OBL) |
| 3. Rumex crispus | 5 | | FAC |
| 4. Alopecurus | 5 | | OBL |
| 5. Mentha pulegium | 15 | | OBL |
| 6. Agrostis stolonifera | 45 | ✓ | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 111 | = Total Cover | 55.5 / 22.2 |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum Ø

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 5 - Wetland Non-Vascular Plants[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:

Dense herbaceous veg within depression.

* Eleocharis macrostachya not in USACE manual but obs. in North Coast region suggest OBL or FACW

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## SOIL

Sampling Point: TP 77

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-0.5 | 10YR 3/2 | 100 | | | | | SiL | Recent sediment deposit |
| 0.5-5 | 10YR 2/2 | 100 | | | | | MuP | |
| 5-12 | 10YR 4/1 | 100 | | | | | GrLS | |
| 12-21 | 2.5Y 4/1 | 70 | 2.5Y 4/2 | 30 | C | M | S | |
| 21-24+ | 2.5Y 2.5/1 | 100 | | | | | S | |

[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)
- __ 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) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ 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 X

Remarks:

## 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)
- X Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): N/A

Water Table Present? Yes ____ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes X No ____

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

Remarks:
TP excavated at low spot within depression appears to have received sediment from nearby dirt roads and development.

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## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT  City/County: Humboldt  Sampling Date: 5/19/22

Applicant/Owner: Humboldt Bay Harbor District  State: CA  Sampling Point: TP78

Investigator(s): Joseph Saler, Cindy Wilcox  Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit  Local relief (concave, convex, none): none  Slope (%): 0-3

Subregion (LRR): A, MLRA-4B  Lat: 40.813996  Long: -124.188143  Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents Assoc. 0-2%  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 ✓ 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 X | Is the Sampled Area within a Wetland? | Yes ____ No X |
| Hydric Soil Present? | Yes X No ____ | | |
| Wetland Hydrology Present? | Yes ____ No X | | |

Remarks: WETS normal rainfall
TP excavated ~5ft from 3p wetland edge, slightly elevated.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix sitchensis | 70 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 11 | ✓ | FACU |
| 2. Morella californica | 4 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15 | = Total Cover | 7.5 / 3 |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Anthoxanthum odoratum | 17 | ✓ | FACU |
| 2. Holcus lanatus | 6 | | FAC |
| 3. Cortaderia jubata | 15 | ✓ | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 38 | = Total Cover | 19 / 7.6 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 62*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* Litter duff and thatch.

SOIL

Sampling Point: TP78

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 7.5YR 2.5/1 | 100 | | | | | MUS | |
| 4-24+ | 2.5Y 4/2 | 80 | 7.5YR 4/4 | 5 | C | M | S | ← Redox color increases w/depth |
| | | | 10YR 4/6 | 15 | C | M | | |

[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)
- ✓ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ______

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks: Elevated above adjacent 3P wetland. Hydrology unlikely to ever be present.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/19/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP79

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.813892 Long: -124.188202 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% 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 X | No ___ |
| Hydric Soil Present? | Yes X | No ___ |
| Wetland Hydrology Present? | Yes X | No ___ |

Is the Sampled Area within a Wetland? Yes X No ___

Remarks: WETS normal rainfall
TP excavated at low point in isolated depression. Best described as PSS1CsOg.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Alnus rubra | 30 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Holcus lanatus | 50 | ✓ | FAC |
| 2. Potentilla anserina | 4 | ✓ | OBL |
| 3. Carex obnupta | 25 | ✓ | OBL |
| 4. Lysimachia arvensis | 10 | | FAC |
| 5. Trifolium repens | 2 | | FAC |
| 6. Lotus corniculatus | 6 | | FAC |
| 7. Geranium dissectum | 2 | | UPL |
| 8. Mentha pulegium | 1 | | OBL |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 100 | = Total Cover 50/20 | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 2

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:
Hydrophytic veg dominance reflective of small depressional wetland.

## SOIL

Sampling Point: TP 79

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-7 | 10YR 3/1 | 100 | — | — | — | — | Peat | |
| 7-24+ | 2.5Y 4/1 | 70 | 7.5YR 4/6 | 30 | C | M | S | |

[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)
- ✓ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No ___

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:
TP excavated within small, isolated depression

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/19/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 80

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula, spit Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR): A, MLRA-4B Lat: 40.813864 Long: -124.188213 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents assoc. 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
TP excavated within raised area surrounding 3p depressional wetland. Conditions representative of upland in this area.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Alnus rubra | 10 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Salix hookeriana | 5 | | FACW |
| 2. Lupinus arboreus | 23 | ✓ | UPL |
| 3. Rubus ursinus | 18 | ✓ | FACU |
| 4. Rubus armeniacus | 3 | | FAC |
| 5. | | | |
| | 49 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Holcus lanatus | 74 | ✓ | FAC |
| 2. Geranium dissectum | 9 | | UPL |
| 3. Lotus corniculatus | 10 | | FAC |
| 4. Sonchus oleraceus | 2 | | UPL |
| 5. Daucus carota | 6 | | FACU |
| 6. Bromus diandrus | 1 | | UPL |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 102 | = Total Cover | 51 / 20.4 |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 0 | | | |

**Dominance Test worksheet:**

| | | |
|---|---|---|
| Number of Dominant Species That Are OBL, FACW, or FAC: | 2 | (A) |
| Total Number of Dominant Species Across All Strata: | 4 | (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 | ___ | x 3 = ___ |
| FACU species | ___ | x 4 = ___ |
| UPL species | ___ | x 5 = ___ |
| Column Totals: | ___ (A) | ___ (B) |

Prevalence Index = B/A = ___

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Holcus dominance creates weak hydrophytic veg in herbaceous layer. Upland shrubs dominant.

## SOIL

Sampling Point: TP 80

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR3/1 | 100 | — | — | — | — | P | |
| 5-24+ | 2.5Y 4/1 | 90 | 2.5Y 4/2 | 10 | C | M | S | asphalt chunks |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks:

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT  City/County: Humboldt  Sampling Date: 05/19/22

Applicant/Owner: Humboldt Bay Harbor District  State: CA  Sampling Point: TP 81

Investigator(s): Joseph Saler, Cindy Wilcox  Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Peninsula/spit  Local relief (concave, convex, none): Concave  Slope (%): 2

Subregion (LRR): A, MLRA-4B  Lat: 40.811574  Long: -124.187973  Datum: WGS 84

Soil Map Unit Name: 1014-urbanland Anthraltic Xerorthents assoc. 0-2%  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 ✓ 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 X | No ____ |
| Hydric Soil Present? | Yes X | No ____ |
| Wetland Hydrology Present? | Yes X | No ____ |
| Is the Sampled Area within a Wetland? | Yes X | No ____ |

Remarks: WETS normal rainfall
TP excavated in erosional depression caused by failure of culvert, tidal. Best described as E2F03Nx3g

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 50 | ✓ | FACW |
| 2. Salix lasiandra | 50 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| = Total Cover | | | |
| Woody Vine Stratum (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 100%

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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:**

X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:
No herbaceous veg. Sparsely vegetated concave surface.

## SOIL

Sampling Point: TP 8

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-1 | 2.5Y2.5/1 | 100 | — | — | — | — | MuP | |
| 1-16 | 2.5Y2.5/1 | 30 | mixed matrices | | | | LS | Mixed eroded fill |
| | 2.5Y4/1 | 35 | | | | | LS | Mixed eroded fill, |
| | 7.5YR2.5/1 | 25 | | | | | P | peat pocket, mixed eroded |

[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)
- __ 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) (**except MLRA 1**)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- __ 2 cm Muck (A10)
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- X 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 X No ___

Remarks: *pockets of mixed matrices. Peat pockets from fly ash & woodchips decomposed from ~30yrs ago. saltwater influence from broken culvert. problematic with this type of hydrology - anticipate hydric indicators

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- __ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- __ Salt Crust (B11)
- __ 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)
- __ Stunted or Stressed Plants (D1) (**LRR A**)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- __ Raised Ant Mounds (D6) (**LRR A**)
- __ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes X No ___ Depth (inches): 9 inches

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

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

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

Remarks: Hydrology influenced by failure of culvert — eroding overlaying soils and allowing for tidal influence of the eroded depression.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/19/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP82

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula/spit Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.811570 Long: -124.187969 Datum: WGS 84

Soil Map Unit Name: 1014 - Urbanland Anthraltic Xerothents Assoc. 1-2% 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 X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ No X | |
| Wetland Hydrology Present? | Yes ___ No X | |

Remarks: WETS normal rainfall
TP excavated just outside erosional depression 3P wetland. Upland conditions representative of large willow patch.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 40 | ✓ | FACW |
| 2. Salix lasiandra | 60 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 100 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus ursinus | 30 | ✓ | FACU |
| 2. Rubus armeniacus | 5 | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 35 | = Total Cover | 17.5 / 7 |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. Polystichum munitum | 12 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 12 | = Total Cover | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 88% *

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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 | ___ | x 3 = ___ |
| FACU species | ___ | x 4 = ___ |
| UPL species | ___ | x 5 = ___ |
| Column Totals: | ___ (A) | ___ (B) |

Prevalence Index = B/A = ___

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks:
* Litter and duff from tree and shrub layer.

## SOIL

Sampling Point: TP 82

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-36 | 2.5Y3/1 | 100 | — | — | — | — | SL | fill. |
| | | | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks: Elevated, approx. 46 inches above water table.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/19/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP83

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR): A, MLRA-4B Lat: 40.811343 Long: -124.187553 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerorthents Assoc. 1-20% 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 ✓ 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 X |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |
| Is the Sampled Area within a Wetland? | Yes ___ | No X |

Remarks: WETS normal rainfall
TP excavated within center of willow patch. Conditions representative of willow patch.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 95 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 95 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 70 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 70 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum** (Plot size: 5') | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 100 * | | | |

**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 | ___ | x 3 = ___ |
| FACU species | ___ | x 4 = ___ |
| UPL species | ___ | x 5 = ___ |
| Column Totals: | ___ (A) | ___ (B) |

Prevalence Index = B/A = ___

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* Litter + duff from tree and shrub layers.

## SOIL

Sampling Point: TP 83

SYTI Consulting Engineers & Geologists, Inc

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-7 | 10YR 2/1 | 100 | | | | | mu Peat | not insitu material* |
| 7-9 | black asphalt | 100 | | | | | Asphalt | |
| 9-18 | 2.5Y 3/2 | 100 | | | | | grco. LS | very compacted |
| 18-24+ | 10YR 4/3 | 70 | | | | | GrLS | |
| | 2.5Y 3/2 | 30 | | | | | | mixed matrix |

[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) NO
- ___ Black Histic (A3) NO
- ___ Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks: * Peat in this area is from decomposed woodchips/fly ash from local industry - not from leaf litter derived from onsite vegetation - not using A2 or A3. ~30 yrs old This material is placed on very compacted gravel pad. Typical for this willow patch.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (LRR A)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (LRR A)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ______ No X Depth (inches): N/A

Water Table Present? Yes ______ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ______ No X Depth (inches): N/A

**Wetland Hydrology Present?** Yes ______ No X

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

Remarks: well drained, raised, representative of willow patch.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/19/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP84

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): concave Slope (%): 2-4

Subregion (LRR): A, MLRA-4B Lat: 40.811566 Long: -124.188400 Datum: WGS 84

Soil Map Unit Name: 1014-Urbanland Anthraltic Xerothents Assoc 1-2% 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 ✓ 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 X | No ___ |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes X | No ___ |

Is the Sampled Area within a Wetland? Yes ___ No X

* Meets CCC 1-p definition

Remarks: WETS normal rainfall

Fly ash basin

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 60 | ✓ | FACW |
| 2. Salix lasiandra | 40 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus armeniacus | 30 | ✓ | FAC |
| 2. Rubus ursinus | 10 | ✓ | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 40 | = Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 100%

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: No herb stratum on account of dense shade and deep litter and duff.

## SOIL

Sampling Point: TP84

Consulting Engineers & Geologists, Inc.

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-15 | N2.5/ | 100 | blacker, but no color chip | | | | SiCL | fly ash turning into soil |
| 15-27 | 2.5Y 4/2 | 97 | 10YR 4/6 | 3 | C | m | S | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

Ash brought in & formed a basin around site. Not A12 - not organic matter from in situ contributions.

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): N/A |
| Water Table Present? | Yes ___ | No X | Depth (inches): N/A |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): N/A |

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

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

Remarks:

Well drained soils with deep flyash. No evidence of saturation or surface water at any time.

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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 5/20/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 85

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Peninsula, spit Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR): A, MLRA-4B Lat: 40.812666 Long: -124.190178 Datum: WGS 84

Soil Map Unit Name: 1014-Urban land Anthraltic xerorthents Assoc. 0-2% 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 X |
| Hydric Soil Present? | Yes ______ | No X |
| Wetland Hydrology Present? | Yes ______ | No X |

Is the Sampled Area within a Wetland? Yes ______ No X

Remarks: WETS normal rainfall
TP excavated within willow patch. Representative of conditions therein.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 90 | ✓ | FACW |
| 2. Morella californica | 10 | | FACW |
| 3. | | | |
| 4. | | | |
| | 100 | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 5')** | | | |
| 1. Rubus armeniacus | 25 | ✓ | FAC |
| 2. Rubus ursinus | 12 | ✓ | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 37 | = Total Cover | 18.5 / 7.4 |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | | = Total Cover | |
| **Woody Vine Stratum (Plot size: 5')** | | | |
| 1. Hedera helix | 6 | ✓ | FACU |
| 2. | | | |
| | 6 | = Total Cover | |

% Bare Ground in Herb Stratum 100*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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 | ______ | x 3 = ______ |
| FACU species | ______ | x 4 = ______ |
| UPL species | ______ | x 5 = ______ |
| Column Totals: | ______ (A) | ______ (B) |

Prevalence Index = B/A = ______

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ 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 X

Remarks:
Veg mosaic of Rubus ursinus and armeniacus in understory. Dominance varies.

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## SOIL

Sampling Point: TP 85

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 7.5YR 2.5/1 | 100 | | | | | Peat | |
| 2-8 | 10YR 2/1 | 100 | | | | | SiCL | |
| 8-16+ | 10YR 3/2 | 70 | | | | | GrSL | |
| | 10YR 4/6 | 20 | | | | | | Mixed fill |
| | 10YR 4/2 | 10 | | | | | | |

[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)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:
Well drained fill soils. Immediately adj. to railroad tracks.

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 7/29/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 86

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Drainageway Slope Local relief (concave, convex, none): None Slope (%): 40

Subregion (LRR): A, MLRA-4B Lat: 40.807815° Long: -124.191796° Datum: WGS 84

Soil Map Unit Name: Urban land-Anthraltic Xerorthents assoc. 0-3% 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 X | No ___ |
| Hydric Soil Present? | Yes ___ | No X |
| Wetland Hydrology Present? | Yes ___ | No X |

Is the Sampled Area within a Wetland? Yes ___ No X

Remarks: WETS above normal rainfall
TP excavated on slope immediately above drainage way, within excavated stormwater feature. See TP 22 for drainageway conditions

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix lasiandra | 98 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 98 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus armeniacus | 45 | ✓ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 45 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Polystichum munitum | 7 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 7 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum 93*

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks:
* litter and duff over ~50% cover w/ ~43% bare soils.
Vegetation restricted to drainageway and associated slopes.

**SOIL** Sampling Point: TP 86

**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 |
|---|---|---|---|---|---|---|---|---|
| 0-7.5 | 10YR 3/2 | 100 | | | | | LS | deposition surface on slope |
| 7.5-13 | 7.5YR 3/2 | 100 | | | | | L | buried w/ garbage surface |
| 13-20+ | 10YR 3/4 | 100 | | | | | grLS | fill very compacted |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:
Fill. Bottom of pit. compacted rock w/ some 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:
TP excavated in well drained slope immediately above drainage way floor. Anthropogenic in origin and constructed as a stormwater feature.

SHN Consulting Engineers & Geologists, Inc.

## WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 7/29/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 87

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Drainage way Local relief (concave, convex, none): Slope Slope (%): 35

Subregion (LRR): A, MLRA-4B Lat: 40.800913° Long: -124.191132° Datum: WGS 84

Soil Map Unit Name: Urbanland - Anthraltic Xerorthents assoc. 0-2% 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 X | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | |
| Wetland Hydrology Present? | Yes ____ No X | |

Remarks: WETS above normal rainfall TP excavated on slope of anthropogenic drainageway for stormwater collection
upland pit to TP21 (RMTZ)

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Morella californica | 45 | ✓ | FACW |
| 2. Salix lasiandra | 45 | ✓ | FACW |
| 3. | | | |
| 4. | | | |
| | 90 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 25 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 25 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Polystichum munitum | 5 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 5 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |
| % Bare Ground in Herb Stratum 95* | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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 | ____ | x 3 = ____ |
| FACU species | ____ | x 4 = ____ |
| UPL species | ____ | x 5 = ____ |
| Column Totals: | ____ (A) | ____ (B) |

Prevalence Index = B/A = ____

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
* 50% litter and 45% bare ground

## SOIL

Sampling Point: TP87

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-0.5 | 7.5YR2.5/2 | 100 | — | — | — | — | O | |
| 0.5-26+ | 2.5Y4/2 | 99 | — | — | — | — | S | |
| | 10YR3/1 | 1 | — | — | — | — | SiL | occ. inclusion |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
- ___ 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) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

## 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ 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)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A

Water Table Present? Yes ___ No X Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:
Dry, well-drained slope of anthropogenic drainageway for stormwater collection

SHN Consulting Engineers & Geologists, Inc.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Humboldt Bay Harbor District-RMMT City/County: Humboldt Sampling Date: 8/2/22

Applicant/Owner: Humboldt Bay Harbor District State: CA Sampling Point: TP 88

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ____

Landform (hillslope, terrace, etc.): Peninsula spit Local relief (concave, convex, none): None Slope (%): 58

Subregion (LRR): A, MLRA-4B Lat: 40.807040° Long: -124.189535° Datum: WGS 84

Soil Map Unit Name: Urbanland - Anthraltic Xerorthents assoc. 0-3% slope 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 X | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ No X | |
| Wetland Hydrology Present? | Yes ____ No X | |

Remarks: WETS above normal rainfall
TP excavated on cut bank of stormwater conveyance feature. See TP 20 for conditions at bottom of feature.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Salix hookeriana | 62 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 62 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 5') | | | |
| 1. Rubus ursinus | 30 | ✓ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 30 | = Total Cover | |
| **Herb Stratum** (Plot size: 5') | | | |
| 1. Juncus effusus | 5 | | FACW |
| 2. Briza maxima | 30 | ✓ | UPL |
| 3. Holcus lanatus | 2 | | FAC |
| 4. Vicia sativa | 2 | | UPL |
| 5. Raphanus sativus | 3 | | UPL |
| 6. Symphyotrichum chilense | 1 | | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 43 | = Total Cover 21.5 8.6 | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ____

**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:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ 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 X

Remarks:
Vegetation composition representative of stormwater feature slopes to pavement edge.

## SOIL

Sampling Point: TP 88

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 2.5Y 3/2 | 100 | — | — | — | — | LS | |
| 3-27 | 5Y 4/3 | 100 | — | — | — | — | S | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[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)
___ 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) **(except MLRA 1)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ 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 X

Remarks:
Uniform sands.

## 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)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
___ Salt Crust (B11)
___ 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)
___ Stunted or Stressed Plants (D1) **(LRR A)**
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Saturation Visible on Aerial Imagery (C9)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)
___ Raised Ant Mounds (D6) **(LRR A)**
___ Frost-Heave Hummocks (D7)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): N/A
Water Table Present? Yes ___ No X Depth (inches): N/A
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): N/A

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

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

Remarks:
well drained sandy soils, steeply sloping. No evidence of hydrology

# Site Photographs 5


Photo 1: An example of a Palustrine Forested Wetland- Wetland 05, located near TP31. Photo taken on May 5, 2022.


Photo 2: An example of a Palustrine Forested Wetland- Wetland 06, located near TP37. Photo taken on May 5, 2022.

Photo 3: An example of a Palustrine Forested Wetland- Wetland 09, located near TP43. Photo taken on May 12, 2022.

Photo 4: An example of a Palustrine Scrub-Shrub Wetland- Wetland 07, located near TP39. Photo taken May 5, 2022.

Photo 5: An example of a Palustrine Scrub-Shrub Wetland- Wetland 08, located near TP41. Photo taken May 5, 2022.

Photo 6: An example of a Palustrine Scrub-Shrub Wetland- Wetland 11, located near TP45. Photo taken May 12, 2022.

Photo 7: An example of a Palustrine Scrub-Shrub Wetland- Wetland 14, located near TP53. Photo taken May 12, 2022.

Photo 8: An example of a Palustrine Scrub-Shrub Wetland- Wetland 21, located near TP78. Photo taken May 19, 2022.

Photo 9: An example of a Palustrine Emergent Wetland- Wetland 12, located near TP57. Photo taken May 13, 2022.

Photo 10: An example of a Palustrine Emergent Wetland- Wetland 13, located near TP47. Photo taken May 12, 2022.

Photo 11: An example of an Estuarine Wetland- Wetland 03, located near TP23. Photo taken April 29, 2022.

Photo 12: An example of an Estuarine Wetland- Wetland 03, located near TP23. Photo taken July 6, 2022.

Photo 13: An example of an Estuarine Wetland- Wetland 01, with Pt. Reyes Bird's Beak in the foreground. Photo taken July 7, 2022.

Photo 14: An example of an Estuarine Wetland- Wetland 01, located above the MHHW in the northern portion of the study area. Photo taken July 6, 2022.

Photo 15: An example of an Estuarine Wetland- Wetland 23, located near TP81. Photo taken May 19, 2022.

Photo 16: An example of Estuarine Intertidal Shoreline, looking west toward Wetland 15. Note narrow band of estuarine wetland between the MHHW and upland conditions. Photo taken April 5, 2022.


Photo 17: An example of Estuarine Intertidal Shoreline, east of Wetland 03, looking across Humboldt Bay towards Eureka.  Photo taken July 7, 2022.


Photo 18: An example of Intertidal Shoreline with saltmarsh vegetation within armored shoreline, east of TP71, looking north. Note MHHW demarked roughly by the wrack line between the saltmarsh vegetation and upland ruderal vegetation.Photo taken July 8, 2022.

Photo 19: An example of Intertidal Shoreline, with armored shoreline east of TP71, looking east towards Eureka. Photo taken August 2, 2022.

Photo 20: Potential non-jurisdictional feature at TP64 and TP65- an abandoned concrete vault and foundation that has developed into a three-parameter wetland.

Photo 21: Potential non-jurisdictional feature- abandoned drying shed foundations beginning to incorporate three parameters. Photo taken May 28, 2020.

Photo 22: Potentially non-jurisdictional features- abandoned drying shed foundations beginning to incorporate three parameters. Photo taken May 28, 2020.

Photo 23: Potentially non-jurisdicitonal feature- stormwater collection system at TP86. Culvert drains impervious surfaces formerly used for chip storage. Photo taken on June 28, 2022.

Photo 24: Potentially non-jurisdicitonal feature- stormwater collection system near TP87. One of several stormwater culverts that drain into this feature. Photo taken on June 29, 2022.

Photo 25: Potentially non-jurisdicitonal feature-stormwater collection system near TP88. Photo taken on August 2, 2022.

Photo 26: Potentially non-jurisdicitonal feature-stormwater collection system near TP88, near one of weirs before the entrance to Humboldt Bay. Photo taken on August 2, 2022.

# Plant List 6

| Botanical Species Observed 4/28/2020, 6/4/2020, and 4/5-4/8, 4/13-4/19, 5/3-5/6/2022 and 7/7/2022<br>RMMT Biological Assessment, Samoa CA | | | |
|---|---|---|---|
| **Scientific Name** | **Common Name** | **Family** | **Native?** |
| **Trees** | | | |
| *Acacia melanoxylon* | blackwood acacia | Fabaceae | I[1] |
| *Alnus rubra* | red alder | Betulaceae | Y[2] |
| *Cordyline australis* | cabbage tree | Laxmanniaceae | N[3] |
| *Eucalyptus globulus* | bluegum | Myrtaceae | I |
| *Hesperocyparis macrocarpa* | Monterey cypress | Cuppressaceae | N |
| *Ilex aquifolium* | English holly | Aquifoliaceae | I |
| *Malus fusca* | Oregon apple | Rosaceae | Y |
| *Malus pumila* | wild apple | Rosaceae | N |
| *Picea sitchensis* | Sitka spruce | Pinaceae | Y |
| *Pinus contorta* var. *contorta* | beach pine | Pinaceae | Y |
| *Pinus radiata* | Monterey pine | Pinaceae | N |
| *Populus trichocarpa* | black cottonwood | Salicaceae | Y |
| *Prunus cerasifera* | wild plum | Rosaceae | I |
| *Prunus persica* | wild peach | Rosaceae | N |
| *Pseudotsuga menziesii var. menziesii* | Douglas fir | Pinaceae | Y |
| *Salix hookeriana* | coast willow | Salicaceae | Y |
| *Salix lasiandra* var. *lasiandra* | pacific willow | Salicaceae | Y |
| *Salix scouleriana* | Scouler's willow | Salicaceae | Y |
| *Salix sitchensis* | Sitka willow | Salicaceae | Y |
| **Shrubs** | | | |
| *Arctostaphylos uva-ursi* | bear mat | Ericaceae | Y |
| *Baccharis pilularis* ssp. *consanguinea* | coyote brush | Asteraceae | Y |
| *Ceanothus prostrates* var. *prostratus* | mahala mat | Rhamnaceae | Y |
| *Cistus salvifolius* | rock rose | Cistaceae | N |
| *Cotoneaster franchetii* | Franchet’s cotoneaster | Asteraceae | I |
| *Cotoneaster lacteus* | milk flower cotoneaster | Asteraceae | I |
| *Cotoneaster simonsii* | Simon’s cotoneaster | Asteraceae | N |
| *Crataegus monogyna* | English hawthorn | Rosaceae | I |
| *Cydonia oblonga* | quince | Rosaceae | N |
| *Cytisus scoparius* | Scotch broom | Fabaceae | I |
| *Elaeagnus ebbingei* | lemon leaf | Elaeagnaceae | N |
| *Escallonia rubra* | red escallonia | Grossulariaceae | N |
| *Frangula purshiana* ssp. *purshiana* | cascara | Rhamnaceae | Y |
| *Fuchsia magellanica* | hardy fuchsia | Onagraceae | N |
| *Garrya elliptica* | coast silk tassel | Garryaceae | Y |
| *Genista monspessulana* | French broom | Fabaceae | I |
| *Juniperus chinensis* | Chinese juniper | Cupressaceae | N |
| *Lavandula stoechas* | French lavender | Lamiaceae | N |
| *Ligustrum ovalifolium* | California privet | Oleaceae | N |
| *Lonicera involucrata* var. *ledebourii* | coast twinberry | Caprifoliaceae | Y |
| *Lupinus arboreus* | yellow bush lupine | Fabaceae | N |
| *Morella californica* | California wax myrtle | Myricaceae | Y |
| *Ribes menziesii* var. *menziesii* | canyon gooseberry | Grossulariaceae | Y |
| *Ribes sanguineum* var. *glutinosum* | flowering currant | Grossulariaceae | Y |
| *Rosa rubiginosa* | sweetbriar | Rosaceae | N |
| *Rosa sp.* | | | Y |

| Botanical Species Observed 4/28/2020, 6/4/2020, and 4/5-4/8, 4/13-4/19, 5/3-5/6/2022 and 7/7/2022 RMMT Biological Assessment, Samoa CA | | | |
|---|---|---|---|
| **Scientific Name** | **Common Name** | **Family** | **Native?** |
| *Rubus armeniacus* | Himalayan berry | Rosaceae | I |
| *Rubus ursinus* | California blackberry | Rosaceae | Y |
| *Vaccinium ovatum* | evergreen huckleberry | Ericaceae | Y |
| **Ferns and Allies** | | | |
| *Athyrium filix-femina* var. *cyclosorum* | western lady fern | Woodsiaceae | Y |
| *Dryopteris arguta* | California wood fern | Dryopteridaceae | Y |
| *Equisetum arvense* | common horsetail | Equisetaceae | Y |
| *Equisetum laevigatum* | smooth scouring rush | Equisetaceae | Y |
| *Equisetum telmateia* ssp. *braunii* | giant horsetail | Equisetaceae | Y |
| *Pentagramma triangularis* ssp. *triangularis* | gold back fern | Pteridaceae | Y |
| *Polypodium californicum* | California polypody | Polypodiaceae | Y |
| *Polypodium glycyrrhiza* | licorice fern | Polypodiaceae | Y |
| *Polystichum munitum* | sword fern | Dryopteridaceae | Y |
| *Pteridium aquilinum* var. *pubescens* | bracken fern | Pteridaceae | Y |
| *Sceptridium multifidum* | leather grape fern | Ophioglossaceae | Y |
| *Woodwardia fimbriata* | western chain fern | Blechnaceae | Y |
| **Sedges and Rushes** | | | |
| *Carex harfordii* | Harford's sedge | Cyperaceae | Y |
| *Carex leptopoda* | slender foot sedge | Cyperaceae | Y |
| *Carex obnupta* | slough sedge | Cyperaceae | Y |
| *Carex pansa* | sand dune sedge | Cyperaceae | Y |
| *Cyperus eragrostis* | tall flatsedge | Cyperaceae | Y |
| *Eleocharis macrostachya* | spikerush | Cyperaceae | Y |
| *Isolepis cernua* | low clubrush | Cyperaceae | Y |
| *Juncus balticus* ssp. *ater* | Baltic rush | Juncaceae | Y |
| *Juncus bolanderi* | Bolander's rush | Juncaceae | Y |
| *Juncus breweri* | Brewer's rush | Juncaceae | Y |
| *Juncus bufonius* var. *bufonius* | toad rush | Juncaceae | Y |
| *Juncus capitatus* | leafy bracted dwarfrush | Juncaceae | N |
| *Juncus effusus* ssp. *pacificus* | common rush | Juncaceae | Y |
| *Juncus ensifolius* | sword leaf rush | Juncaceae | Y |
| *Juncus hesperius* | coast rush | Juncaceae | Y |
| *Juncus lescurii* | dune rush | Juncaceae | Y |
| *Juncus patens* | spreading rush | Juncaceae | Y |
| *Juncus phaeocephalus* var. *phaeocephalus* | brown headed rush | Juncaceae | Y |
| *Juncus xiphioides* | iris-leaved rush | Juncaceae | Y |
| *Luzula subsessilis* | Pacific woodrush | Juncaceae | Y |
| *Schoenoplactus americanus* | chairmakers bulrush | Cyperaceae | Y |
| *Schoenoplectus pungens* var. *longispicatus* | three square | Cyperaceae | Y |
| *Scirpus microcarpus* | panicled bulrush | Cyperaceae | Y |
| **Grasses** | | | |
| *Agrostis gigantea* | giant bentgrass | Poaceae | N |
| *Agrostis stolonifera* | creeping bentgrass | Poaceae | I |
| *Aira caryophyllea* | silver hairgrass | Poaceae | N |
| *Alopecurus geniculatus* | marsh foxtail | Poaceae | Y |

| Botanical Species Observed 4/28/2020, 6/4/2020, and 4/5-4/8, 4/13-4/19, 5/3-5/6/2022 and 7/7/2022<br>RMMT Biological Assessment, Samoa CA | | | |
|---|---|---|---|
| **Scientific Name** | **Common Name** | **Family** | **Native?** |
| *Ammophila arenaria* | European beachgrass | Poaceae | I |
| *Anthoxanthum odoratum* | sweet vernal grass | Poaceae | I |
| *Avena barbata* | wild oat | Poaceae | I |
| *Briza maxima* | large quaking grass | Poaceae | I |
| *Briza minor* | small quaking grass | Poaceae | N |
| *Bromus diandrus* | ripgut brome | Poaceae | I |
| *Bromus hordeaceus* | soft chess | Poaceae | I |
| *Bromus racemosus* | smooth brome | Poaceae | N |
| *Bromus sitchensis* var. *carinatus* | California brome | Poaceae | Y |
| *Cortaderia jubata* | jubata grass | Poaceae | I |
| *Cynodon dactylon* | bermuda grass | Poaceae | I |
| *Cynosurus echinatus* | dogtail grass | Poaceae | I |
| *Dactylis glomerata* | orchard grass | Poaceae | I |
| *Deschampsia caespitosa* ssp. *holciformis* | coast tufted hairgrass | Poaceae | Y |
| *Digitaria sanguinalis* | hairy crabgrass | Poaceae | N |
| *Distichlis spicant* | salt grass | Poaceae | Y |
| *Elymus mollis* ssp. *mollis* | American dune grass | Poaceae | Y |
| *Festuca arundinacea* | tall fescue | Poaceae | I |
| *Festuca bromoides* | brome fescue | Poaceae | N |
| *Festuca idahoensis* | Idaho fescue | Poaceae | Y |
| *Festuca myuros* | six-weeks grass | Poaceae | I |
| *Festuca perennis* | Italian wildrye | Poaceae | I |
| *Festuca rubra* ssp. *pruinosa* | red fescue | Poaceae | Y |
| *Gastridium phleoides* | nit grass | Poaceae | N |
| *Glyceria declinata* | waxy mannagrass | Poaceae | I |
| *Holcus lanatus* | velvet grass | Poaceae | I |
| *Hordeum brachyantherum* ssp. *brachyantherum* | meadow barley | Poaceae | Y |
| *Hordeum marinum* var. *gussoneanum* | barley | Poaceae | N |
| *Hordeum murinum* ssp. *murinum* | wall barley | Poaceae | N |
| *Panicum acuminatum* | panic grass | Poaceae | Y |
| *Parapholis incurva* | sicklegrass | Poaceae | N |
| *Phalaris arundinacea* | canary reedgrass | Poaceae | I |
| *Poa annua* | annual bluegrass | Poaceae | N |
| *Poa confinus* | beach bluegrass | Poaceae | Y |
| *Poa trivialis* | rough bluegrass | Poaceae | N |
| *Polypogon monspeliensis* | annual beardgrass | Poaceae | I |
| *Rytidoperma penicillatum* | hairy oatgrass | Poaceae | I |
| *Spartina densiflora* | dense cordgrass | Poaceae | I |
| **Herbs** | | | |
| *Abronia latifolia* | yellow sand verbena | Nyctaginaceae | Y |
| *Achillea millefolium* | yarrow | Asteraceae | Y |
| *Acmispon americanus* var. *americanus* | American bird's foot trefoil | Fabaceae | Y |
| *Acmispon parviflorus* | hill lotus | Fabaceae | Y |
| *Agapanthus praecox* | African lily | Liliaceae | N |

| Botanical Species Observed 4/28/2020, 6/4/2020, and 4/5-4/8, 4/13-4/19, 5/3-5/6/2022 and 7/7/2022 RMMT Biological Assessment, Samoa CA | | | |
|---|---|---|---|
| **Scientific Name** | **Common Name** | **Family** | **Native?** |
| *Alisma lanceolatum* | lanceleaf water plantain | Alismataceae | N |
| *Alisma triviale* | northern water plantain | Alismataceae | Y |
| *Allium triquetrum* | white flowered onion | Alliaceae | N |
| *Ambrosia chamissonis* | silver beachweed | Asteraceae | Y |
| *Anaphalis margaritacea* | pearly everlasting | Asteraceae | Y |
| ***Angelica lucida*** | **seacoast angelica** | **Apiaceae** | **Y** |
| *Anthemis cotula* | dog fennel | Asteraceae | N |
| *Aphanes occidentalis* | lady's mantle | Rosaceae | Y |
| *Arctotheca prostrata* | creeping capeweed | Asteraceae | I |
| *Armeria maritima* ssp. *californica* | sea thrift | Plumbaginaceae | Y |
| *Artemisia douglasii* | California mugwort | Asteraceae | Y |
| *Artemisia pycnocephala* | beach sagewort | Asteraceae | Y |
| *Atriplex prostrata* | fat-hen | Chenopodiaceae | N |
| *Baccharis glutinosa* | saltmarsh baccharis | Asteraceae | Y |
| *Barbarea vulgaris* | yellow rocket | Brassicaceae | N |
| *Bellardia trixago* | Mediterranean linseed | Orobanchaceae | I |
| *Bellis perennis* | English daisy | Brassicaceae | N |
| *Bergenia crassifolia* | elephant ear saxifrage | Saxifragaceae | N |
| *Brassica nigra* | black mustard | Brassicaceae | I |
| *Brassica rapa* | common mustard | Brassicaceae | I |
| *Cakile maritima* | sea rocket | Brassicaceae | I |
| *Calandrinia menziesii* | red maids | Montiaceae | Y |
| *Callitriche heterophylla* var. *heterophylla* | starwort | Plantaginaceae | Y |
| *Calystegia silvatica* | false bindweed | Convolvulaceae | N |
| *Calystegia soldanella* | beach morning glory | Convolvulaceae | Y |
| *Camissoniopsis cheiranthifolia* ssp. *cheiranthifolia* | beach evening primrose | Onagraceae | Y |
| *Centaurium erythraea* | European centaury | Gentianaceae | N |
| *Capsella bursa-pastoris* | shepherd's purse | Brassicaceae | N |
| *Cardamine oligosperma* | bittercress | Brassicaceae | Y |
| *Cardionema ramosissimum* | sand mat | Caryophyllaceae | Y |
| *Carduus pycnocephalus* ssp. *pycnocephalus* | Italian thistle | Asteraceae | I |
| *Carpobrotus chilensis* | seafig | Aizoaceae | I |
| *Carpobrotus edulis* | iceplant | Aizoaceae | I |
| ***Castilleja ambigua*** **var. *humboldtiensis*** | **Humboldt Bay owl's clover** | **Orobanchaceae** | **Y** |
| *Castilleja attenuata* | narrowleaf owl's clover | Orobanchaceae | Y |
| *Centranthus ruber* | red valerian | Valerianaceae | N |
| *Cerastium fontanum* ssp. *vulgare* | small mouse-ear | Caryophyllaceae | N |
| ***Chloropyron maritimum*** | **Point Reyes bird's-beak** | **Orobanchaceae** | **Y** |
| *Cirsium arvense* | Canada thistle | Asteraceae | I |
| *Cirsium vulgare* | bull thistle | Asteraceae | I |
| *Claytonia parviflora* ssp. *parviflora* | narrowleaf miner's lettuce | Monitaceae | Y |
| *Claytonia perfoliata* ssp. *perfoliata* | miner's lettuce | Montiaceae | Y |
| *Claytonia rubra* | redstem spring beauty | Montiaceae | Y |
| *Conium maculatum* | poison hemlock | Apiaceae | I |

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|---|---|---|---|
| **Scientific Name** | **Common Name** | **Family** | **Native?** |
| *Corethrogyne filaginifolia* var. *californica* | California sandaster | Asteraceae | Y |
| *Cotula coronopifolia* | brass buttons | Asteraceae | I |
| *Crassula connata* | sand pygmy weed | Crassulaceae | Y |
| *Crocosmia x crocosmiiflora* | montbretia | Liliaceae | I |
| *Cryptantha leiocarpa* | coast cryptantha | Boraginaceae | Y |
| *Cuscuta pacifica* var. *pacifica* | dodder | Convolvulaceae | Y |
| *Daucus carota* | Queen Anne's lace | Apiaceae | N |
| *Daucus pusillus* | American wild carrot | Apiaceae | Y |
| *Dipsacus fullonum* | teasel | Dipsacaceae | I |
| *Epilobium brachycarpum* | annual fireweed | Onagraceae | Y |
| *Epilobium ciliatum* ssp. *ciliatum* | willowherb | Onagraceae | Y |
| *Epilobium densiflorum* | willow herb | Onagraceae | Y |
| *Epipactis gigantea* | stream orchid | Orchidaceae | Y |
| *Erigeron canadensis* | Canada horseweed | Asteraceae | Y |
| *Eriogonum latifolium* | coast buckwheat | Polygonaceae | Y |
| *Erodium cicutarium* | coast heron's bill | Geraniaceae | I |
| *Erodium moschatum* | white stem filaree | Geraniaceae | N |
| *Eschscholzia californica* | California poppy | Papaveraceae | Y |
| *Euphorbia oblongata* | eggleaf spurge | Euphorbiaceae | N |
| *Euphorbia peplus* | petty spurge | Euphorbiaceae | N |
| *Foeniculum vulgare* | fennel | Apiaceae | I |
| *Fragaria chiloensis* | beach strawberry | Rosaceae | Y |
| *Fumaria officinalis* | fumitory | Papaveraceae | N |
| *Galium aparine* | cleaver plant | Rubiaceae | Y |
| *Galium parisiense* | wall bedstraw | Rubiaceae | N |
| *Gamochaeta ustulata* | featherweed | Asteraceae | Y |
| *Geranium dissectum* | cutleaf geranium | Geraniaceae | I |
| *Geranium molle* | cranes bill geranium | Geraniaceae | N |
| *Geranium robertianum* | Robert's geranium | Geraniaceae | N |
| *Grindelia stricta* var. *stricta* | coastal gumplant | Asteraceae | Y |
| *Helminthotheca echioides* | bristly ox-tongue | Asteraceae | I |
| *Hirschfeldia incana* | hoary mustard | Brassicaceae | I |
| *Hyacinthoides non-scripta* | blue bells | Asparagaceae | N |
| *Hypericum perforatum* ssp. *perforatum* | Klamathweed | Hypericaceae | I |
| *Hypochaeris glabra* | smooth cat's ear | Asteraceae | I |
| *Hypochaeris radicata* | hairy cat's-ear | Asteraceae | I |
| *Jaumea carnosa* | marsh jaumea | Asteraceae | Y |
| *Lamium purpureum* | purple dead nettle | Lamiaceae | N |
| *Lapsana communis* | common nipplewort | Asteraceae | N |
| *Lathyrus latifolius* | sweet pea | Fabaceae | N |
| *Lathyrus littoralis* | beach pea | Fabaceae | Y |
| *Lemna minor* | smaller duckweed | Araceae | Y |
| *Leontodon saxatilis* | hawkbit | Asteraceae | N |
| *Lepidium didymum* | lesser swinecress | Brassicaceae | N |
| *Leucanthemum vulgare* | oxeye daisy | Asteraceae | I |
| *Limonium californicum* | marsh rosemary | Plumbaginaceae | Y |

| Botanical Species Observed 4/28/2020, 6/4/2020, and 4/5-4/8, 4/13-4/19, 5/3-5/6/2022 and 7/7/2022<br>RMMT Biological Assessment, Samoa CA | | | |
|---|---|---|---|
| **Scientific Name** | **Common Name** | **Family** | **Native?** |
| *Linum bienne* | flax | Linaceae | N |
| *Lobularia maritima* | sweet alyssum | Brassicaceae | I |
| *Lotus corniculatus* | bird's foot trefoil | Fabaceae | N |
| *Lupinus bicolor* | annual lupine | Fabaceae | Y |
| *Lupinus rivularis* | riverbank lupine | Fabaceae | Y |
| *Lysimachia arvensis* | scarlet pimpernel | Myrsinaceae | N |
| *Lythrum hyssopifolia* | Hyssop loosestrife | Lythraceae | I |
| *Malva nicaeensis* | bull mallow | Malvaceae | N |
| *Malva parviflora* | cheeseweed mallow | Malvaceae | N |
| *Malva pseudolavatera* | Cretan mallow | Malvaceae | N |
| *Matricaria discoidea* | pineapple weed | Asteraceae | Y |
| *Medicago polymorpha* | bur clover | Fabaceae | I |
| *Melilotus albus* | white sweet clover | Fabaceae | N |
| *Melilotus indicus* | annual yellow sweetclover | Fabaceae | N |
| *Mentha pulegium* | pennyroyal | Lamiaceae | I |
| *Modiola caroliniana* | Carolina bristle mallow | Malvaceae | N |
| *Myosotis discolor* | forget-me-not | Boraginaceae | N |
| *Nasturtium officinale* | watercress | Brassicaceae | Y |
| *Navarretia squarrosa* | skunkweed | Polemoniaceae | Y |
| *Nuttallanthus canadensis* | toad flax | Scrophulariaceae | Y |
| *Oenanthe sarmentosa* | water parsley | Apiaceae | Y |
| *Oenothera glazioviana* | red sepal primrose | Onagraceae | N |
| *Oxalis corniculata* | creeping woodsorrel | Oxalidaceae | N |
| *Oxalis pes-caprae* | Bermuda buttercup | Oxalidaceae | I |
| *Oxalis purpurea* | purple wood sorrel | Oxalidaceae | N |
| *Parentucellia viscosa* | yellow glandweed | Orobanchaceae | I |
| *Persicaria hydropiper* | common smartweed | Polygonaceae | N |
| *Petrorhagia dubia* | windmill pink | Caryophyllaceae | N |
| *Piperia elegans* ssp. *elegans* | elegant piperia | Orchidaceae | Y |
| *Plantago coronopus* | buckhorn plantain | Plantaginaceae | N |
| *Plantago elongata* | coastal plantain | Plantaginaceae | Y |
| *Plantago erecta* | California plantain | Plantaginaceae | Y |
| *Plantago lanceolata* | English plantain | Plantaginaceae | I |
| *Plantago major* | common plantain | Plantaginaceae | N |
| *Plantago maritima* | maritime plantain | Plantaginaceae | Y |
| *Platystemon californicus* | cream cups | Papaveraceae | Y |
| *Plectritis congesta* ssp. *congesta* | sea blush | Valeriancaeae | Y |
| *Polycarpon tetraphyllum* var. *tetraphyllum* | four leaf allseed | Caryophyllaceae | N |
| *Polygonum aviculare* ssp. *aviculare* | prostrate knotweed | Polygonaceae | N |
| *Polygonum paronychia* | dune knotweed | Polygonaceae | Y |
| *Potentilla anserina* ssp. *pacifica* | silverweed | Rosaceae | Y |
| *Pseudognaphalium luteoalbum* | Jersey cudweed | Asteraceae | N |
| *Ranunculus muricatus* | buttercup | Ranunculaceae | N |
| *Ranunculus repens* | creeping buttercup | Ranunculaceae | I |
| *Raphanus sativus* | wild radish | Brassicaceae | I |
| *Rumex acetosella* | sheep sorrel | Polygonaceae | I |
| *Rumex conglomeratus* | clustered dock | Polygonaceae | N |

| Botanical Species Observed 4/28/2020, 6/4/2020, and 4/5-4/8, 4/13-4/19, 5/3-5/6/2022 and 7/7/2022 RMMT Biological Assessment, Samoa CA | | | |
|---|---|---|---|
| **Scientific Name** | **Common Name** | **Family** | **Native?** |
| *Rumex crispus* | curly dock | Polygonaceae | I |
| *Rumex salicifolius* | willow dock | Polygonaceae | Y |
| *Sagina apetala* | dwarf pearlwort | Caryophyllaceae | N |
| *Sagina decumbens* | western pearlwort | Caryophyllaceae | Y |
| *Sagina procumbens* | pearlwort | Caryophyllaceae | Y |
| *Salicornia depressa* | pickleweed | Chenopodiaceae | Y |
| *Salicornia pacifica* | pickleweed | Chenopodiaceae | Y |
| *Sanicula crassicaulis* | Pacific sanicle | Apiaceae | Y |
| *Scrophularia californica* | bee plant | Scrophulariaceae | Y |
| *Sedum album* | white stonecrop | Crassulaceae | N |
| *Senecio glomeratus* | cutleaf burnweed | Asteraceae | I |
| *Senecio minimus* | coast burnweed | Asteraceae | N |
| *Senecio vulgaris* | common groundsel | Asteraceae | N |
| *Silene gallica* | common catchfly | Caryophyllaceae | N |
| *Silybum marianum* | blessed milk thistle | Asteraceae | Y |
| *Solanum americanum* | common nightshade | Solanaceae | Y |
| *Solanum aviculare* | New Zealand nightshade | Solanaceae | I |
| *Solidago spathulata* | dune goldenrod | Asteraceae | Y |
| *Sonchus asper* | prickly sow thistle | Asteraceae | N |
| *Sonchus oleraceus* | sow thistle | Asteraceae | N |
| *Sparaxis tricolor* | wandflower | Iridaceae | N |
| *Spergula arvensis* | corn spurry | Caryophyllaceae | N |
| *Spergula marina* | saltmarsh sand spurry | Caryophyllaceae | Y |
| *Spergularia rubra* | pink sand-spurry | Caryophyllaceae | N |
| *Spiranthes romanzoffiana* | hooded ladies tresses | Orchidaceae | Y |
| *Stachys arvensis* | field hedgenettle | Lamiaceae | N |
| *Stachys rigida* var. *rigida* | rough hedge nettle | Lamiaceae | Y |
| *Symphyotrichum chilense* | pacific aster | Asteraceae | Y |
| *Tanacetum bipinnatum* | dune tansy | Asteraceae | Y |
| *Tanacetum parthenium* | feverfew | Asteraceae | N |
| *Taraxacum officinale* ssp. *officinale* | dandelion | Asteraceae | N |
| *Trifolium arvense* | rabbit foot clover | Fabaceae | N |
| *Trifolium dubium* | shamrock clover | Fabaceae | N |
| *Trifolium fragiferum* | strawberry clover | Fabaceae | N |
| *Trifolium glomeratum* | clustered clover | Fabaceae | N |
| *Trifolium repens* | white clover | Fabaceae | N |
| *Trifolium subterraneum* | subterranean clover | Fabaceae | N |
| *Triglochin maritima* | seaside arrow grass | Juncaginaceae | Y |
| *Triphysaria eriantha* ssp. *eriantha* | butter n' eggs | Orobanchaceae | Y |
| *Tropaeolum majus* | garden nasturtium | Tropaeolaceae | N |
| *Typha latifolia* | cattail | Typhaceae | Y |
| *Verbascum blattaria* | moth mullein | Scrophulariaceae | N |
| *Veronica arvensis* | speedwell | Plantaginaceae | N |
| *Vicia hirsuta* | hairy vetch | Fabaceae | N |
| *Vicia sativa* ssp. *sativa* | spring vetch | Fabaceae | N |
| *Vicia villosa* ssp. *villosa* | hairy vetch | Fabaceae | N |

| Botanical Species Observed 4/28/2020, 6/4/2020, and 4/5-4/8, 4/13-4/19, 5/3-5/6/2022 and 7/7/2022 RMMT Biological Assessment, Samoa CA | | | |
|---|---|---|---|
| **Scientific Name** | **Common Name** | **Family** | **Native?** |
| *Vinca major* | large vinca | Apocynaceae | I |
| *Zantedeschia aethiopica* | calla lily | Araceae | I |
| *Zostera marina* | eelgrass | Zosteraceae | Y |
| **Vines** | | | |
| *Hedera helix* | English ivy | Araliaceae | I |
| *Lonicera hispidula* | pink honeysuckle | Caprifoliaceae | Y |
| *Toxicodendron diversilobum* | poison oak | Anacardiaceae | Y |
| **Lichens, Bryophytes, Fungi** | | | |
| *Alsia californica* | California alsia | Leucodontaceae | Y |
| *Anthocerotophyta* sp. | hornwort species | Anthocerotophyta | Y? |
| *Antitrichia californica* | California antitrichia moss | Leucodontaceae | Y |
| *Armellea mellea* | honey fungus | Physalacriaceae | Y |
| *Bryum argenteum* | silver bryum | Bryaceae | Y |
| *Ceratodon purpureus* | purple shank moss | Ditrichaceae | Y |
| *Cetraria chlorophylla* | foliose lichen | Parmeliaceae | Y |
| *Cladonia cariosa* | split peg lichen | Cladoniaceae | Y |
| *Cladonia chlorophaea* | mealy pixie cup lichen | Cladoniaceae | Y |
| *Cladonia concinna* | slender ladder lichen | Cladoniaceae | Y |
| *Cladonia coniocraea* | powderhorn lichen | Cladoniaceae | Y |
| *Cladonia portentosa* | coastal reindeer lichen | Cladoniaceae | Y |
| *Cladonia verruculosa* | warty reindeer lichen | Cladoniaceae | Y |
| *Frullania nisquallensis* | millipede liverwort | Frulaniaceae | Y |
| *Gemmabryum caespiticum* | gemmabryum moss | Bryaceae | Y |
| *Homalothecium arenarium* | golden curl moss | Brachytheciaceae | Y |
| *Hypogymnia heterophylla* | tube lichen | Parmeliaceae | Y |
| *Isothecium cristatum* | cristate moss | Lembophyllaceae | Y |
| *Kindbergia oregana* | feather moss | Brachytheciaceae | Y |
| *Orthotrichum consimile* | orthotrichum moss | Orthotrichaceae | Y |
| *Parmotrema perlatum* | black stoneflower | Parmeliaceae | Y |
| *Physconia perisidiosa* | appressed foliose lichen | Phyciaceae | Y |
| *Polytrichum commune* | common haircap moss | Polytrichaceae | Y |
| *Porella navicularis* | tree ruffle liverwort | Porellaceae | Y |
| *Ramalina menziesii* | lace lichen | Ramalinaceae | Y |
| *Tortula muralis* | sidewalk moss | Pottiaceae | Y |
| *Usnea cornuta* | beard lichen | Parmeliaceae | Y |
| **346 Species** | | | **51% Native** |
| 1: Invasive species<br>2: Native species<br>3: Non-native species | | | |

# Wetland Datapoint Descriptions

# 7

# Wetland Datapoint Index

| Datapoint ID | Type | Associated Feature | Latitude (Datum-WGS 84) | Longitude (Datum-WGS 84) |
|---|---|---|---|---|
| TP1 | Upland | Upland | 40.821879° | -124.176923° |
| TP2 | Upland | Upland | 40.821107° | -124.177186° |
| TP3 | Upland | Upland | 40.821389° | -124.177534° |
| TP4 | Upland | Upland | 40.820092° | -124.178753° |
| TP5 | Wetland | Wetland 14 | 40.819471° | -124.180605° |
| TP6 | Upland | Upland | 40.818893° | -124.180425° |
| TP7 | Wetland | Wetland 16 | 40.818233° | -124.185136° |
| TP8 | Upland | Upland | 40.817859° | -124.185512° |
| TP9 | Wetland | Drying Shed Human Induced Feature | 40.817383° | -124.185802° |
| TP10 | Wetland | Drying Shed Human Induced Feature | 40.817066° | -124.185555° |
| TP11 | Wetland | Drying Shed Human Induced Feature | 40.816984° | -124.185024° |
| TP12 | Upland | Upland | 40.816128° | -124.183728° |
| TP13 | Wetland | Wetland 17 | 40.815435° | -124.185233° |
| TP14 | Upland | Upland | 40.814764° | -124.184870° |
| TP15 | Wetland | Wetland 19 | 40.814260° | -124.185571° |
| TP16 | Wetland | Upland | 40.815168° | -124.186805° |
| TP17 | Wetland | Wetland 20 | 40.814242° | -124.187113° |
| TP18 | Wetland | Wetland 21 | 40.814034° | -124.187908° |
| TP19 | Upland | Upland | 40.811108° | -124.187255° |
| TP20 | Upland | Stormwater Feature | 40.807064° | -124.189517° |
| TP21 | Upland | Stormwater Feature | 40.806915° | -124.191134° |
| TP22 | Upland | Stormwater Feature | 40.807821° | -124.191760° |
| TP23 | Wetland | Wetland 3 | 40.823699° | -124.174337° |
| TP24 | Upland | Wetland 3 | 40.823726° | -124.174348° |
| TP25 | Upland | Upland | 40.823340° | -124.175161° |
| TP26 | Wetland | Wetland 2 | 40.824108° | -124.174208° |
| TP27 | Upland | Wetland 2 | 40.824121° | -124.174162° |
| TP28 | Upland | Upland | 40.822388° | -124.175811° |
| TP29 | Upland | Upland | 40.822197° | -124.176220° |
| TP30 | Upland | Upland | 40.821591° | -124.177492° |
| TP31 | Wetland | Wetland 5 | 40.820944° | -124.177503° |
| TP32 | Wetland | Wetland 5 | 40.820907° | -124.177639° |

| Datapoint ID | Type | Associated Feature | Latitude (Datum-WGS 84) | Longitude (Datum-WGS 84) |
|---|---|---|---|---|
| TP33 | Upland | Wetland 5 | 40.820793° | -124.177880° |
| TP34 | Upland | Upland | 40.821082° | -124.177511° |
| TP35 | Upland | Upland | 40.821749° | -124.177533° |
| TP36 | Upland | Upland | 40.821711° | -124.177883° |
| TP37 | Wetland | Wetland 6 | 40.821384° | -124.179684° |
| TP38 | Upland | Wetland 6 | 40.821421° | -124.179723° |
| TP39 | Wetland | Wetland 7 | 40.820668° | -124.178999° |
| TP40 | Upland | Wetland 7 | 40.820650° | -124.179053° |
| TP41 | Wetland | Wetland 8 | 40.820351° | -124.178848° |
| TP42 | Upland | Wetland 8 | 40.820367° | -124.178882° |
| TP43 | Wetland | Wetland 9 | 40.819992° | -124.178802° |
| TP44 | Upland | Wetland 9 | 40.819952° | -124.178839° |
| TP45 | Wetland | Wetland 11 | 40.819634° | -124.179067° |
| TP46 | Upland | Wetland 11 | 40.819624° | -124.179131° |
| TP47 | Wetland | Wetland 13 | 40.819178° | -124.179663° |
| TP48 | Upland | Wetland 13 | 40.819159° | -124.179666° |
| TP49 | Upland | Upland | 40.818947° | -124.180274° |
| TP50 | Upland | Upland | 40.818988° | -124.180302° |
| TP51 | Upland | Upland | 40.819118° | -124.180744° |
| TP52 | Upland | Upland | 40.819156° | -124.180682° |
| TP53 | Wetland | Wetland 14 | 40.819489° | -124.180644° |
| TP54 | Upland | Wetland 14 | 40.819499° | -124.180599° |
| TP55 | Upland | Wetland 14 | 40.819469° | -124.180532° |
| TP56 | Upland | Upland | 40.819379° | -124.180675° |
| TP57 | Wetland | Wetland 12 | 40.819395° | -124.179674° |
| TP58 | Upland | Wetland 12 | 40.819346° | -124.179781° |
| TP59 | Upland | Wetland 12 | 40.819364° | -124.179829° |
| TP60 | Wetland | Wetland 10 | 40.819883° | -124.179390° |
| TP61 | Upland | Wetland 10 | 40.819930° | -124.179396° |
| TP62 | Upland | Upland | 40.819122° | -124.182003° |
| TP63 | Upland | Upland | 40.819585° | -124.182949° |
| TP64 | Wetland | Concrete Vault Human Induced Feature | 40.819481° | -124.183652° |
| TP65 | Upland | Anthropogenic Feature | 40.819480° | -124.183669° |
| TP66 | Upland | Wetland 16 | 40.818237° | -124.185179° |
| TP67 | Upland | Upland | 40.817353° | -124.185955° |

| Datapoint ID | Type | Associated Feature | Latitude (Datum-WGS 84) | Longitude (Datum-WGS 84) |
|---|---|---|---|---|
| TP68 | Upland | Upland | 40.817366° | -124.185976° |
| TP69 | Upland | Wetland 17 | 40.815338° | -124.185182° |
| TP70 | Upland | Upland | 40.814670° | -124.185678° |
| TP71 | Upland | Upland | 40.814903° | -124.185132° |
| TP72 | Wetland | Wetland 18 | 40.814851° | -124.185277° |
| TP73 | Upland | Upland | 40.814826° | -124.185185° |
| TP74 | Upland | Upland | 40.814275° | -124.185450° |
| TP75 | Upland | Wetland 20 | 40.814273° | -124.187155° |
| TP76 | Upland | Upland | 40.814272° | -124.187374° |
| TP77 | Upland | Upland | 40.814261° | -124.187729° |
| TP78 | Upland | Wetland 21 | 40.813996° | -124.188143° |
| TP79 | Wetland | Wetland 22 | 40.813892° | -124.188202° |
| TP80 | Upland | Wetland 22 | 40.813864° | -124.188213° |
| TP81 | Wetland | Wetland 23 | 40.811574° | -124.187973° |
| TP82 | Upland | Wetland 23 | 40.811570° | -124.187969° |
| TP83 | Upland | Upland | 40.811343° | -124.187553° |
| TP84 | Upland | Upland | 40.811566° | -124.188400° |
| TP85 | Upland | Upland | 40.812666° | -124.190178° |
| TP 86 | Upland | Stormwater Feature | 40.807810° | -124.191782° |
| TP 87 | Upland | Stormwater Feature | 40.806902° | -124.191117° |
| TP 88 | Upland | Stormwater Feature | 40.807035° | -124.189522° |

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