State Aquatic Resources Delineation

Humboldt Bay Offshore Wind Heavy Lift Marine Terminal

New Navy Base Road
Eureka, California

Prepared for:

Moffatt & Nichol

January 2024

022054.400

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Reference: 022054.400

Summary of Results

The purpose of this report is to document the presence and extent of potential aquatic resources protected by Section 401 of the Clean Water Act (CWA), the Porter-Cologne Water Quality Control Act, Sections 1600–1607 of the California Fish and Game Code (CFGC), and the California Coastal Act (CCA) for the Humboldt Bay Offshore Wind Heavy Lift Marine Terminal (Project).

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, 211.665 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.

The following aquatic resources were documented within the project area for CWA Section 401, CFGC Sections 1600–1607, and the CCA and are summarized in Table 1.

- **CWA Section 401 and Porter-Cologne Water Quality Control Act:** A total of 1.915 acres of wetlands and 5.198 acres of non-wetland waters were identified in the survey area as potentially meeting the criteria of CWA Section 401 and waters of the state, under the jurisdiction of the Regional Water Quality Control Board (RWQCB; Appendix 1).
- **CFGC Sections 1600–1607:** There are no features identified in the survey area as potentially meeting the criteria of CFGC Sections 1600–1607, under the jurisdiction of the California Department of Fish and Wildlife.
- **CCA:** A total of 1.915 acres of wetlands, 5.977 acres of non-wetland waters (which includes 1- and 2- parameter coastal features), were identified in the survey area as potentially meeting the criteria of the CCA, under the jurisdiction of the California Coastal Commission (CCC; Appendix 1).

Table 1. State Aquatic Resources Summary Table

Aquatic Resource Type	Area within Study Area (acres)	Length within Study Area (linear feet)	401 (acres)	1600–1607 (acres)	CCA (acres)
Wetlands					
Palustrine Forested Wetland	0.187	N/A	0.187	0	0.187
Palustrine Scrub-Shrub Wetland	0.297	N/A	0.297	0	0.297
Palustrine Emergent Wetland	0.066	N/A	0.066	0	0.066
Estuarine Wetland	0.813	N/A	0.813	0	0.813
Artificial Aquatic Features	0.552	N/A	0.552	0	0.552
Wetlands Subtotal	**1.915**	**N/A**	**1.915**	**0**	**1.915**
Non-Wetland Waters					
Estuarine Intertidal Shoreline	5.198	12,272	5.198	0	5.198
Other Waters of the State	0.780	N/A	0	0	0.780
Non-Wetland Waters Subtotal	**5.977**	**12,272**	**5.198**	**0**	**5.977**
Total Wetlands and Waters	**7.892**	**12,272**	**7.113**	**0**	**7.892**

Table of Contents

Page

Summary of Results i
Table of Contents ii
List of Illustrations iii
Abbreviations and Acronyms iv
1.0 Introduction 1
1.1 Project Location 1
1.2 Study Area 1
2.0 Project Description 1
3.0 Methods 4
3.1 Delineation Methods 4
3.2 Data Sources 5
3.3 Regulatory Framework 5
3.3.1 Clean Water Act Section 401 and Porter-Cologne Water Quality Control Act 5
3.3.2 California Fish and Game Code Sections 1600–1607 6
3.3.3 California Coastal Act 6
3.4 Delineation Field Work 7
3.4.1 Delineation Field Work Methods 7
3.4.2 MHHW Delineation Field Methods 8
3.4.3 Drought Conditions Wetland Hydrology 8
3.4.4 Delineation Personnel and Dates 9
3.4.5 Delineation Field work Limitations 9
4.0 Environmental Setting 9
4.1 Land Use 9
4.2 Climate 10
4.3 Topography 12
4.4 Site Hydrology 12
4.5 National Hydrography Dataset (NHD) 12
4.6 National Wetlands Inventory 13
4.7 Soils Data 13
4.8 Vegetation 14
4.8.1 Asphalt and Pavement (mostly unvegetated) 15
4.8.2 Ruderal/Nonnative Species-Dominated 15
4.8.3 Non-native Grassland 15
4.8.4 Coastal Dune Willow-Sitka Willow Thickets 16
4.8.5 Wax Myrtle Scrub 16
4.8.6 Mid-High Elevation Salt Marsh 16
4.8.7 Beach Pine Forest 17
4.8.8 Pacific Willow Groves 17
4.8.9 Dune Mat 17
4.8.10 Low Elevation Salt Marsh 17
4.8.11 Pickleweed Mat 18
4.8.12 Sand Dune Sedge Marsh 18
4.8.13 Pacific Silverweed Marsh 18
5.0 Results 18
5.1 Clean Water Act Section 401 19

5.1.1 Wetlands 19
5.1.2 Non-Wetland Waters 30
5.1.3 Non-Aquatic Resources 31
5.2 California Fish and Game Code Sections 1600–1607 32
5.2.1 Jurisdictional Features 32
5.2.2 Non-Jurisdictional Features 32
5.3 California Coastal Act 32
5.3.1 Jurisdictional Features 33
5.3.2 Other Aquatic Coastal Features 33
5.3.3 Non-Jurisdictional Features 40
6.0 References Cited 42

Appendices

1. Potential Wetland Waters of the U.S. in the Study Area
2. Aquatic Resources Delineation Maps
3. National Hydrography Dataset, National Wetland Inventory, Soil, and Drought Monitoring Maps
4. Wetland Determination Data Forms
5. Site Photographs
6. Plant List
7. Wetland Datapoint Descriptions

List of Illustrations

Figures **Follows Page**

1. Project Location Map 1

Tables **Page**

1. State Aquatic Resources Summary Table i
2. Survey Personnel and Dates 9
3. WETS Rainfall Data, 2020 and 2022, Hydrological Analysis 11
4. National Wetland Inventory Habitat Present in the Study Area 13
5. Soil Map Units in the Study Area 13

Abbreviations and Acronyms

Terms of Measurement

Term	Definition
°C	Celsius
°F	Fahrenheit
DBH	diameter at breast height

Additional Terms

Term	Definition
AAD	Alpha-alpha dipyridyl
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDP	coastal development permit
CFGC	California Fish and Game Code
CWA	Clean Water Act
DI	drainage inlet
EPA	U.S. Environmental Protection Agency
ESHA	Environmentally Sensitive Habitat Areas
FAC	facultative plant species
FACU	facultative-upland plant species
FACW	facultative-wetland plant species
GPS	global positioning system
LCP	local coastal program
LSAA	Lake or Streambed Alteration Agreements
MF	Manufacturing/Fabrication
MHHW	mean higher high water
MLLW	mean lower low water
NAD 83	North American datum, 1983
NADM	North American Drought Monitor
NAVD88	North American vertical datum, 1988
NDMC	National Drought Mitigation Center

Term	Definition
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
OF	coastal feature
OHWM	ordinary high water mark
Project	Humboldt Bay Offshore Wind Heavy Lift Marine Terminal
RWQCB	Regional Water Quality Control Board
S&I	Staging and Integration
SWRCB	State Water Resources Control Board
TNW	Traditional Navigable Waterway
TP	test pit
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States 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 State Aquatic Resources Delineation for the Humboldt Bay Harbor, Recreation, and Conservation District to document the presence and extent of aquatic resources potentially protected by Section 401 of the Clean Water Act (CWA), the Porter-Cologne Water Quality Control Act, Sections 1600–1607 of the California Fish and Game Code (CFGC), and the California Coastal Act (CCA) within the study area of the Humboldt Bay Offshore Wind Heavy Lift Marine Terminal (Project) in Eureka, California (Figure 1). 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). It is less than 1 mile west of the City of Eureka and is located on the west shore of Humboldt Bay, facing the City.

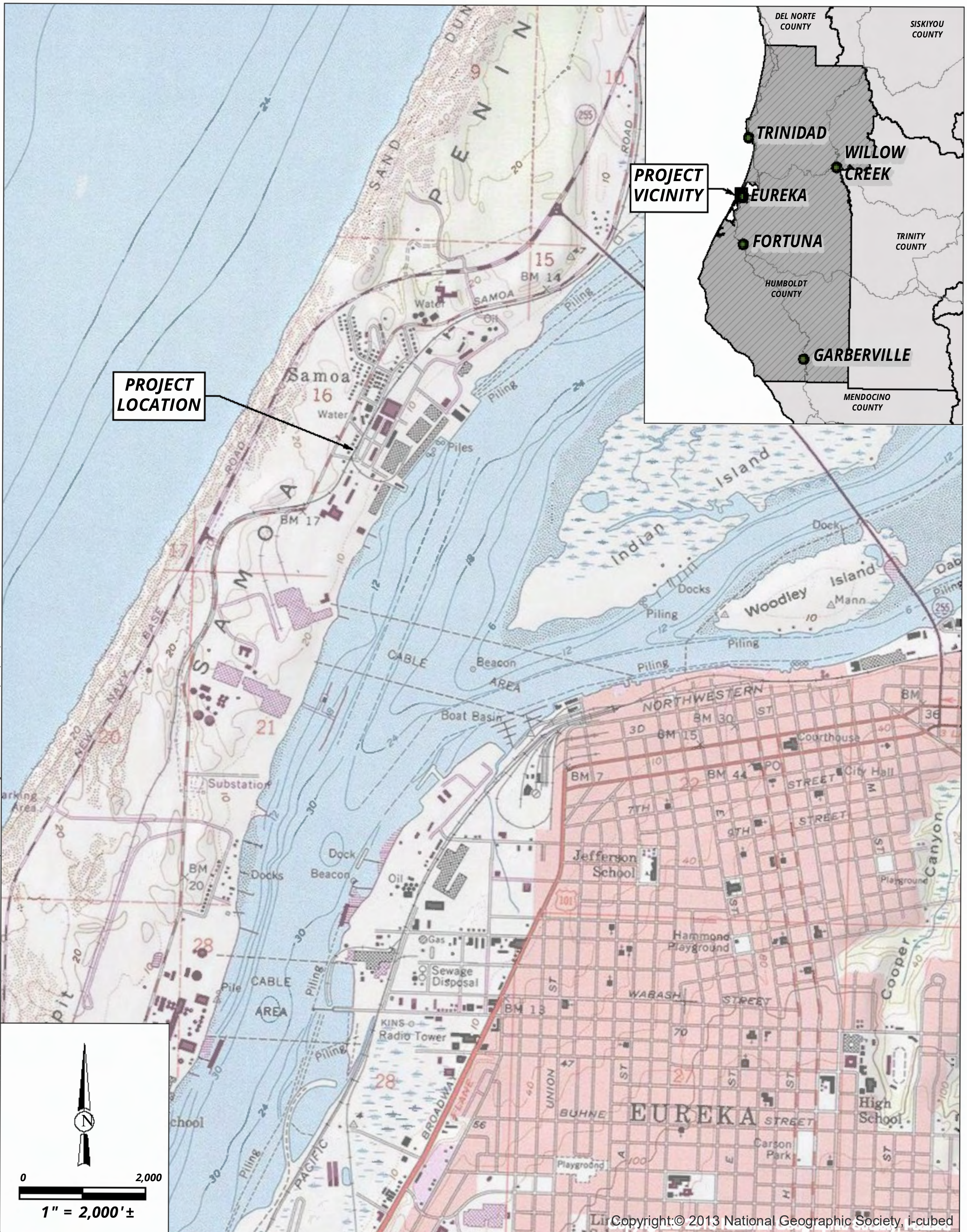
The project is in the Eureka Geological Survey (USGS) 7.5-minute quadrangle Sections 15, 16, and 21 Township 5 North, and Range 01 West (USGS, 2022a; Figure 1). The project extends from approximately 40.804109°, -124.190579° in the south to 40.824341°, -124.173410° in the north. The project area is accessed via multiple entry points off New Navy Base Road, which is accessed via State Route 255 from U.S. Highway 101 in Eureka from the south or Arcata from the north.

1.2 Study Area

The study area encompasses 211.665 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.



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SHN	Humboldt Bay Harbor, Rec., & Cons. District H. B. Offshore Wind Hvy. Lift Marine Terminal Eureka, California	**Project Location Map** **CWA Sec. 401 Aquatic Res. Delineation** November 2023 - 022054.400	**Figure** **1**

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.
    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 as:

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 North American vertical datum, 1988 (NAVD88; such as: +12.66 to +16.66 mean lower low water [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 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 feet 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 approximately 6-acre wooden dock at Terminal I and No Name Dock.
2. Construct up to three wharfs totaling a maximum of approximately 2,500 feet 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 feet MLLW for deep draft cargo vessel access and WTD construction activities.
4. Dredge a sinking basin to approximately -60 feet MLLW to accommodate semi-submersible vessel operations for device float off.
5. 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 feet 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* (U.S. Army Corp of Engineers [USACE], 2010)
- *USACE Regulatory Guidance Letter No. 05-05* (USACE, 2005)
- *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Resources Control Board, 2021)
- California Coastal Commission's (CCC) *Definition and Delineation of Wetlands in the Coastal Zone* (California Coastal Commission [CCC], 2011)
- California Coastal Commission's Wetland Workshop Presentation: Technical Wetland Delineation Overview. (California Coastal Commission, April 2016)
- National Wetland Plant List: 2020 Wetland Ratings (USACE, 2020)

- *Updated Map and Drawing Standards for the South Pacific Regulatory Program* (USACE, 2016)
- California Native Plant Society's (CNPS) *Vegetation Rapid Assessment Protocol* (CNPS, 2007)
- California Department of Fish and Wildlife's (CDFW) and CNPS's *Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form* (CDFW and CNPS, 2023)

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 Regulatory Framework

This section discusses the laws associated with aquatic resources.

3.3.1 Clean Water Act Section 401 and Porter-Cologne Water Quality Control Act

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Under CWA Section 401, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which verifies that the project will be in compliance with State water-quality standards. These certifications are obtained from the appropriate Regional Water Quality Control Board (RWQCB).

According to Section II of *California's State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*[1], the State Water Resources Control Board (SWRCB) defines an area as *wetlands* as follows:

> "An area is wetland if, under normal circumstances,
> (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;
> (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and
> (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation." (SWRCB, 2021)

Waters of the state are defined broadly in the Porter-Cologne Water Quality Control Act and include:

> "…any surface water or groundwater, including saline waters, within the boundaries of the state." "Waters of the state" includes all "waters of the U.S." The following wetlands are waters of the state:

[1] The California Water Board's State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State was adopted April 2, 2019, and revised April 6, 2021.

1. Natural wetlands,
2. Wetlands created by modification of a surface water of the state, and
3. Artificial wetlands…" (SWRCB, 2022)

Because the RWQCB accepts the USACE definition of wetlands, delineations from a final, USACE-verified aquatic-resource report can be used to determine the extent of wetlands and waters of the U.S. Any wetlands or waters not delineated in the USACE-verified report would be performed in a similar method to delineations of federal wetlands and waters. A federal aquatic resources delineation was conducted across the site for this project. Results are included within the Federal Resources Delineation Report (SHN, 2023).

This report groups waters of the state regulated under CWA Section 401 and Porter-Cologne Water Quality Control Act and refers to the group as *CWA Section 401 resources*.

3.3.2 California Fish and Game Code Sections 1600–1607

Under CFGC Sections 1600–1607, CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes by issuing Lake or Streambed Alteration Agreements (LSAAs). CDFW jurisdictional limits are usually delineated by the top of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Waters under USACE jurisdiction may or may not be included in the area covered by an LSAA. Additionally, marine intertidal areas are not jurisdictional under CFGC Sections 1600–1607.

3.3.3 California Coastal Act

The CCA of 1976 established the CCC to protect the coastline of California; policies include the protection, enhancement, and restoration of natural resources. The CCA also delegates to local governments the power to enact and implement their own local coastal programs (LCPs) on formal certification by the CCC. Any development within the Coastal Zone requires a coastal development permit (CDP) from either the CCC or the local government if an LCP is in place.

Wetlands, coastal waters, and streams are protected by the CCA (see §§ 30230–30233). The CCC also takes jurisdiction of riparian habitat associated with aquatic resources.

The CCC definition of wetlands differs from other agencies, such as the USACE. CCA Section 30121 defines wetlands as "lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."

Furthermore, California Code of Regulations (CCR) Section 13577(b) provides additional guidance regarding the definition of a wetland:

> "Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats." (CCR Section 13577(b))

The protocols the USACE developed are used to delineate wetlands for the CCC. There are situations where one or more of the wetland parameters may be missing. In these circumstances, the area needs to be closely examined to determine if and why indicators are missing, and if the area is functioning as a wetland with evidence of wetland hydrology under normal circumstances.

The Humboldt Bay Area Plan is the LCP land use plan for the Humboldt Bay area including the project area (Humboldt County, 1982). Under this plan the following are considered sensitive habitats:

1. Wetlands and estuaries, including Humboldt Bay and the mouth of the Mad River.
2. Vegetated dunes along the North Spit to the Mad River and along the South Spit.
3. Rivers, creeks, gulches, sloughs and associated riparian habitats, including Mad River Slough, Ryan Slough, Eureka Slough, Freshwater Slough, Liscom Slough, Fay Slough, Elk River, Salmon Creek, and other streams.
4. Critical habitats for rare and endangered species listed on state or federal lists.

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 state and federal guidelines to identify and map potential waters of the state to determine the extent of regulatory jurisdiction for the RWQCB, CDFW, and CCC:

- RWQCB jurisdiction includes all aquatic features under federal jurisdiction, including ephemeral, intermittent, and perennial streams as determined using ordinary high water mark (OHWM) indicators and three-parameter wetlands. In addition to federal aquatic resources, CWA Section 401 jurisdiction also includes isolated wetlands, riparian vegetation, isolated seeps and springs, and human-induced wetlands with natural conditions present.
- CDFW jurisdictional limits are usually delineated by the top of the stream or lake banks or the outer edge of riparian vegetation, whichever is wider. CDFW jurisdiction also includes wetlands that are connected to and immediately adjacent to any stream or lake.
- CCA jurisdiction includes all wetlands, waters, and streams. The CCA also takes jurisdiction of riparian habitat associated with aquatic resources, which are considered non-wetland Environmentally Sensitive Habitat Areas (ESHA).

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 state guidelines to identify and map potential wetlands and waters of the state to determine the extent of regulatory jurisdiction for the RWQCB, CDFW, and CCC.

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). All potential waters of the U.S. were classified using the Cowardin classification system (Federal Geographic Data Committee, 2013). Many of the CCA features lacking three wetland parameters did not meet the classifications of the Cowardin system.

3.4.2 MHHW Delineation Field Methods

The MHHW contour for this site calculated in North American datum, 1983 (NAD 83) and North American vertical datum, 1988 (NAVD88; 2011) as 6.65 feet, as available from the Datums for 9418817, Samoa, Humboldt Bay CA (NOAA, 2023) within the vicinity of the project. A contour for this elevation was generated from light detection and ranging (LiDAR) elevation data (City of Eureka, 2019), 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 National Oceanic and Atmospheric Administration (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 additional 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

Climatic conditions were drier than normal during an extended period of drought for the 2022 delineation period, requiring additional scrutiny for hydrology. Additional methods to address the drought conditions are described in Section 3.4.3. 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, remnants of abandoned stormwater features, and 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, 2022a; NOAA 2022b). The climate in the study area is characterized by mild year-round temperatures and long wet winters. The mean maximum temperature is 59.2 degrees Fahrenheit (°F)(15.1 degrees Celsius [°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. The Condition Value and Weight are multiplied together to calculate the Product Value.

According to the WETS calculated 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**
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 2 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 3.4.3.

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 which contains the highest elevation within the study area, however 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 within 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 aboveground connectivity 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 (NHD)

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 10.8184 acres (Table 4).

Table 3. 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 4.

Table 4. 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 Clambeach: very poorly drained	Dunes	Oxyaquic udipsamments, unvegetated	Samoa: No Clambeach: Yes	1.5

Table 4. Soil Map Units in the Study Area

Soil Map Unit	Map Symbol	Textural Class	Drainage Class	Landform	Minor Components	Hydric Criteria	% of Study Area
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 that 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. Vegetation communities and the acreages occupied by each vegetation community includes:

- Asphalt and pavement (mostly unvegetated): 109.59 acres
- Ruderal/non-native dominated: 48.99 acres
- Non-native grassland: 12.18 acres
- Coastal dune willow-Sitka willow thickets: 5.30 acres
- Wax myrtle scrub: 1.81 acres
- Mid-high elevation salt marsh: 1.26 acres

- Beach pine forest: 0.62 acres
- Pacific willow groves: 0.55 acres
- Dune mat: 0.44 acres
- Low elevation salt marsh: 0.37 acres
- Pickleweed mats: 0.12 acres
- Sand dune sedge marsh: 0.02 acres
- Pacific silverweed marsh: 0.01 acres

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 species dominate 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 lupin, 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 where the canopy is denser. 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. Sand dune sedge marsh occurs in deflation plain wetlands west of the study area, but a small portion of this sand dune sedge marsh extends into 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.

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 chapter documents potentially jurisdictional aquatic resources under CWA Section 401, CFGC Sections 1600–1607, and the CCA.

Potential state aquatic resources and associated non-wetland riparian habitat 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 aquatic resources delineated within the study area, as well as a preliminary determination of jurisdiction. These results and the mapped extent of delineated features depicted on the maps in Appendices 1 and 2 are subject to verification by the regulatory agencies.

5.1 Clean Water Act Section 401

CWA Section 401 jurisdiction includes all aquatic features under federal jurisdiction, including perennial, intermittent, and ephemeral streams, as determined using OHWM indicators and features with all three wetland parameters (that is, dominance or prevalence of hydrophytic vegetation, hydric soils, and wetland hydrology). It also includes isolated wetlands, wetland areas without vegetation, riparian vegetation, isolated seeps and springs, and human-induced wetlands with natural conditions present (Appendices A and J). Many small, degraded wetlands occur within the study area, reflecting the history of industrial use and subsequent abandonment, and the proximity to the coast which results in a high-water table and low evaporation rates. Wetlands within the study area are relatively abundant but are typically small in size and have developed as a result of past development such as building footprint depressions that collect and retain stormwater from surrounding expanses of impervious surfaces. In addition, naturally occurring wetlands occur along the periphery of the site including remnant deflation plain wetlands to the west of the study area and expansive estuarine wetlands associated with Humboldt Bay in the northern portion of the study area. No streams occur within the study area because the narrow Samoa spit is comprised of well-drained aeolian sand deposits, which does not contain enough area with well-defined watersheds to support stream flows.

5.1.1 Wetlands

A total of 57,157 square feet (1.312 acres) of three-parameter wetlands occur in the study area (Appendices 1 and 2), including isolated three-parameter wetlands with no continuous surface connection to a Traditional Navigable Waterway (TNW) and artificial aquatic features with semi-natural conditions. A total of 27 wetlands occur in the study area comprised of: Palustrine Forested Wetlands (4), Palustrine Scrub-shrub Wetlands (12), Palustrine Emergent Wetlands (3), Estuarine Wetlands associated with Humboldt Bay (5), and Artificial Aquatic features (3) (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 acre) of Palustrine Forested Wetlands occur in the study area (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 acre) of Palustrine Scrub-shrub Wetlands occur in the study area (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 acre) of

Palustrine Emergent Wetlands occur in the study area (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. 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.

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. Average herbaceous cover within Palustrine Forested Wetlands averaged 11 percent cover; conversely, average bare soil 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 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.

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 has a continuous surface connection to 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 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 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 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.

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 are 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 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). The geomorphic position allowing for water to collect and pool and the persistent saturation are likely the primary drivers 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.

All Palustrine Scrub-Shrub 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 02 is approximately 71 square feet and occurs within an excavated swale in the northern portion of the study area immediately south of the State Route 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 has a continuous surface connection 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 State Route 255 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 has a continuous surface connection 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 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 into 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 elevated DI allow water to pool. The surrounding area is elevated, level, and well drained, and wetland conditions are restricted to the lowest elevations of the depression.
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 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 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 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 has no direct aboveground connectivity to any wetlands or other waters and is elevated over 3 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 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 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 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 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, has 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.

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.

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 has no direct aboveground connectivity to a TNW but 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 has no direct aboveground connectivity to a TNW but 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 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 that 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.

Estuarine Wetlands

There are five Estuarine Wetlands (Wetlands 01, 03, 15, 18, and 23; Appendices 1 and 2) representing over half of the CWA Section 401 jurisdictional wetland area present within the study area. These wetlands vary in size from 56 square feet to 23,957 square feet and all are 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 allowing tidal incursion. All field data with details for each Estuarine Wetland are included in Appendix 4. Photographs 11 through 15 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) 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 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 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, therefore, has a continuous surface connection 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 that 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 has a continuous surface connection 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 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 6 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.

Artificial Aquatic Features

Several aquatic features occur in the study area that are primarily artificial, including the substrate and hydrologic conditions. 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. Artificial 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 (Appendix 1). The following paragraphs describe these features.

A concrete vault and foundation occur in the northwest portion of the study area (Photograph 16). 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 entirely artificial nature and has limited wetland habitat value. 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 (Appendix 5, Photographs 17 and 18). 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 combined occupy approximately 15,398 square feet within the former drying shed foundations. While these features have all three wetland parameters present, they are entirely artificial and have limited wetland habitat value. 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 (Appendix 5, Photographs 19-22). The current configuration of this feature, comprised of three separate polygons connected by culverts, 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; the absence of hydric soils indicates 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. The stormwater feature including all three polygons 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 wetland conditions and TP86, TP87, and TP88 for surrounding upland conditions. The entire feature as it currently exists is artificial and was constructed through upland for stormwater conveyance and lacks hydric soils and wetland habitat.

5.1.2 Non-Wetland Waters

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

Estuarine Intertidal Shoreline
Estuarine Intertidal Shoreline includes the portion of the study area that occurs 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 23 through 26 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 linear feet and a total of 14,971 square feet (0.344 acre) 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. 1 -Estuarine Wetlands. 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 clay.

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 (See Section 5.1.1- Estuarine Wetland). 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.

5.1.3 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.

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.

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.

5.2 California Fish and Game Code Sections 1600–1607

Under CFGC Sections 1600–1607, CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes by issuing LSAAs. CDFW jurisdictional limits are usually delineated by the top of the stream or lake banks or the outer edge of riparian vegetation—whichever is wider. Waters under USACE jurisdiction may or may not be included in the area covered by an LSAA. No lakes, streams, or riparian habitat occur within the study area; therefore, no features jurisdictional under CFGC Sections 1600–1607 exist within the study area.

5.2.1 Jurisdictional Features

No lakes or streams occur within the study area because the narrow Samoa spit is comprised of well-drained aeolian sand deposits and does not contain enough area with well-defined watersheds to support stream flows; therefore, no features jurisdictional under CFGC Sections 1600–1607 occur within the study area. Additionally, no riparian habitat occurs within the study area due to a lack of supporting lake or streams.

5.2.2 Non-Jurisdictional Features

All wetland and other waters that occur in the study area are not jurisdictional under CFGC Sections 1600–1607, including marine intertidal areas, isolated wetlands or wetlands with connectivity, as well as features that were constructed to hold, capture, or convey surface water and stormwater and supporting infrastructure. All features were determined to be non-jurisdictional because they are not associated with lakes, streams, or riparian areas. Additionally, marine intertidal areas are not jurisdictional under CFGC Sections 1600–1607.

5.3 California Coastal Act

Wetlands, coastal waters, and streams are protected by the CCA (see CCA Sections 30230–30233). The CCC also takes jurisdiction of riparian habitat associated with aquatic resources that are considered non-wetland ESHA.

The CCC definition of *wetlands* differs from other agencies, such as the USACE or SWRCB. CCA Section 30121 defines wetlands as "lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." This definition encompasses all CWA Section 401 and CFGC Section 1600–1607 jurisdictional features described in Section 5.1 and Section 5.2 of this report, as well as 18 additional features. All features described in Appendix 1 are considered jurisdictional under the CCA.

5.3.1 Jurisdictional Features

A total of 47 distinct CCA jurisdictional features exist within the study area (Appendices 1 and 2). These include 4 Palustrine Forested Wetlands, 12 Palustrine Scrub-shrub Wetlands, 3 Palustrine Emergent Wetlands, 5 Estuarine wetlands, 2 Estuarine Intertidal areas, 3 artificial aquatic features, and 18 aquatic coastal features.

Twenty-nine (29) of these features are described in Section 5.1.1 of this report, including a summary of conditions, connectivity, wetland indictors, or vegetation community, and other pertinent information. In addition, all features are included in Appendix 1 and are described in the field data included in Appendices 3, 4, and 7.

A total of 18 aquatic coastal features are not CWA Section 401 or CFGC Section 1600–1607 jurisdictional and were not described in the above sections of this report. These coastal aquatic features are described below.

5.3.2 Other Aquatic Coastal Features

Other aquatic coastal features may be regulated as wetlands under the CCA, pending verification. They are areas that exhibit only one or two of the three parameters required by the USACE and have normal conditions present, though they are all human induced. These areas may have functions related to wetlands or are areas in which the CCA may require further investigation.

Coastal feature OF 01 is approximately 2,379 square feet and occurs north of and immediately adjacent to Wetland 05. This feature is slightly elevated above the three-parameter wetland area and does not display evidence of wetland hydrology due to its raised and gently sloping nature (Appendix 5, Photographs 27 and 28). Hydric soils or hydrophytic vegetation dominance were observed; however, hydric soil development and hydrophytic vegetation dominance were sporadic. Only one parameter was present at any given exploratory test pit throughout the feature, indicating that hydrophytic vegetation dominance is not directly related to hydric soil development. It is likely that hydric soil development and the hydrophytic vegetation dominance are a result of the location of this feature adjacent to a three-parameter wetland, which may support deeper rooted willow and wax myrtle growth and deep but persistent soil saturation in certain locations. This feature occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions within OF 01 are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydrology. It is protected as a potential wetland ESHA feature because of the presence of two potential wetland parameters. No wetland test pit data was collected from within this feature, although five exploratory test pits were excavated throughout the feature to investigate for wetland hydrology indicators and to determine the relationship between the hydric soil development and hydrophytic vegetation. See Appendix 4 data forms TP31 and TP32 for adjacent three-parameter wetland conditions, and TP 34 for surrounding upland conditions. TP2 records conditions within an adjacent area with weak hydrophytic vegetation dominance.

Coastal feature OF 02 is approximately 167 square feet and occurs southwest of and immediately adjacent to Wetland 08. This feature is elevated above the three-parameter wetland area and does not display evidence of wetland hydrology or hydric soil development due to its raised and sloping nature (Appendix 5, Photographs 27 and 28). Strong hydrophytic vegetation dominance was observed extending from within the three-parameter wetland up the slope. The hydrophytic vegetation dominance likely reflects the rhizomatous growth of small-fruited bulrush (*Scirpus microcarpus*) supported by the wetland hydrology within Wetland 08. No hydric soil indicators or wetland hydrology indicators were observed. This feature occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydrology and hydric soils. It is protected as a potential wetland ESHA feature because of the presence of hydrophytic vegetation associated with an adjacent three-parameter wetland. No wetland test pit data was collected from within this feature, although two exploratory test pits were excavated within the feature to investigate for hydric soil and wetland hydrology indicators. See Appendix 4 data form TP41 for adjacent three-parameter wetland conditions and TP 42 for surrounding upland conditions.

Coastal feature OF 03 is approximately 518 square feet and occurs north of and immediately adjacent to Wetland 10 (Appendix 5, Photographs 27 and 28). This feature is within the same shallow depression that contains Wetland 10 and had weak wetland hydrology indicators present. Hydric soils and hydrophytic vegetation dominance were not present, possibly indicating transitory wetland hydrology, but more likely reflecting past disturbance, such as gravelly fill soils and pronounced growth of disturbance dependent species such as coyote brush, Himalayan blackberry, California blackberry, and pampas grass, among others. This feature occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soils and a hydrophytic vegetation community. It is protected as a potential wetland ESHA feature because of the presence of wetland hydrology which may lead to hydric soil development and hydrophytic vegetation dominance over time. No wetland test pit data was collected from within this feature, although an exploratory test pit was excavated within the feature to investigate for hydrophytic vegetation dominance, hydric soil, and wetland hydrology indicators. See Appendix 4 data form TP60 for adjacent three-parameter wetland conditions and TP61 for surrounding upland conditions.

Coastal feature OF 04 is approximately 447 square feet and occurs southwest of and immediately adjacent to Wetland 10. This feature is within the same shallow depression that contains Wetland 10 and OF 03 and had weak wetland hydrology indicators present with conditions nearly identical to those observed in OF 03 (Appendix 5, Photographs 27 and 28). Hydric soils and hydrophytic vegetation dominance were not present, possibly indicating transitory wetland hydrology, but more likely reflecting past disturbance, such as gravelly fill soils and pronounced growth of disturbance dependent species such as coyote brush, Himalayan blackberry, California blackberry, and pampas grass, among others. This feature occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soils and a hydrophytic vegetation community. It is protected as a potential wetland ESHA feature because of the presence of wetland hydrology which may lead to hydric soil development and hydrophytic vegetation dominance over time. No wetland test pit data was collected from within this feature, although an exploratory test pit was excavated within the feature to investigate for hydrophytic vegetation dominance, hydric soil, and wetland hydrology indicators. See Appendix 4 data form TP60 for adjacent three-parameter wetland conditions and TP61 for surrounding upland conditions.

Coastal feature OF 05 is approximately 668 square feet and occurs south of and immediately adjacent to Wetland 12. This feature is slightly elevated above the three-parameter wetland area but is still within a shallow depression with hydrophytic vegetation dominance and wetland hydrology (Appendix 5, Photographs 29–31). No hydric soil indictors were observed, likely because of the compacted gravelly nature of the fill soils at this location and the slightly raised position of OF 05, which leaves the water table at too great a depth to create hydric soil indicators in the upper soil horizons such as those observed within Wetland 12. Dominant species within this feature included marsh foxtail (*Alopecurus geniculatus*) and toad rush (*Juncus bufonius* var. *bufonius*). Wetland hydrology was evident with the primary indicator of saturation within 12 inches of the soil surface. This feature occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soil; however, it most closely resembles a Palustrine Emergent Wetland. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters. See Appendix 4 data form TP58 for conditions within this two-parameter feature and TP 59 for surrounding upland conditions. TP57 records conditions within adjacent Wetland 12.

Coastal feature OF 06 is approximately 731 square feet and occurs north of and immediately adjacent to Wetland 14. This feature is elevated above the three-parameter wetland area and does not display evidence of wetland hydrology or hydric soil due to its raised and sloping nature (Appendix 5, Photographs 29–31). Strong hydrophytic vegetation dominance was observed extending from within the three-parameter wetland up the slope. The hydrophytic vegetation dominance likely reflects the rhizomatous growth of dune rush (*Juncus lescurii*) and deeper-rooted Sitka willow and coast willow. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydrology and hydric soils. It is protected as a potential wetland ESHA feature because of the presence of hydrophytic vegetation associated with an adjacent three-parameter wetland. See Appendix 4 data form TP54 for conditions within OF 06 and TP 55 for surrounding upland conditions. TP5 and TP53 record conditions within adjacent Wetland 14.

Coastal feature OF 07 is approximately 2,934 square feet and is an isolated feature within a relatively flat gravelly area dominated by upland non-native grasses (Appendix 5, Photographs 29–31). This feature occurs within a shallow depression within extremely compacted gravels that prevent stormwater infiltration resulting in persistent pooled water during and after storm events. Both hydrophytic vegetation dominance and wetland hydrology was observed; however, no evidence of hydric soils was observed. The wetland hydrology indicators of an Algal Mat or Crust (B4), a Geomorphic Position (D2) and a vegetation community meeting the FAC-Neutral Test (D2) was observed, which are indicative of irregular stormwater dependent hydrology. This may explain the absence of hydric soils. Dominant species within this feature were non-native and invasive species including pennyroyal (*Mentha pulegium*), Italian ryegrass (*Festuca perennis*), and curly dock (*Rumex crispus*). This feature occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soil; however, it most closely resembles a

Palustrine Emergent Wetland. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters. See Appendix 4 data forms TP6 and TP49 for conditions within this two-parameter feature and TP 50 for surrounding upland conditions.

Coastal feature OF 08 is approximately 351 square feet and is an isolated feature within a relatively flat gravelly area dominated by upland non-native grasses (Appendix 5, Photographs 29–31). This feature occurs within a shallow depression on top of what may be a historic burn pile or burn waste dump, as soil beneath the 10-inch topsoil horizon resembled slag from a hot fire. Both hydrophytic vegetation dominance and wetland hydrology were observed; however, no evidence of hydric soils was observed, and wetland hydrology indicators indicate weak hydrologic conditions. The secondary wetland hydrology indicators of a Geomorphic Position (D2) and a vegetation community meeting the FAC-Neutral Test (D2) were observed, which likely represent the historic disturbance of the site rather than wetland hydrology, as no evidence of primary wetland hydrology indicators were observed. This may explain the absence of hydric soils. Dominant species within this feature were primarily non-native and invasive species including creeping bentgrass (*Agrostis stolonifera*), creeping buttercup (*Ranunculus repens*), Himalayan blackberry, and some cover by mowed coast willow. Normal conditions occur within the feature, and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soil and weak hydrologic conditions; however, it most closely resembles a Palustrine Emergent Wetland. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters. See Appendix 4 data form TP51 for conditions within this 2-parameter feature and TP52 for surrounding upland conditions.

Coastal feature OF 09 is approximately 1,083 square feet and is an isolated feature within a shallow swale at the base of a slope between the town of Samoa and large expanses of concrete and asphalt (Appendix 5, Photograph 32). Both hydrophytic vegetation dominance and pronounced wetland hydrology was observed; however, no evidence of hydric soils was observed, although the presence of a thin layer of mucky peat indicates that hydric soils are developing. The wetland hydrology primary indicators of a High-Water Table (A2), Saturation (A3), secondary indicators of a Geomorphic Position (D2), and a vegetation community meeting the FAC-Neutral Test (D2) were observed, which indicate that long-term wetland conditions have developed at this location. It is likely that hydric soils will continue to develop over time in the absence of major disturbance. Dominant species within this feature included a mix of native and non-native hydrophytes. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities and the swale was likely excavated in the past for stormwater conveyance. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soils; however, it most closely resembles a Palustrine Emergent Wetland. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters. See Appendix 4 data form TP67 for conditions within this two-parameter feature and TP 68 for surrounding upland conditions.

Coastal feature OF 10 is comprised of four rectangular polygons with nearly identical conditions that occupy a combined area of approximately 7,963 square feet. Both hydrophytic vegetation dominance and weak wetland hydrology were observed; however, no evidence of hydric soils was observed. The four rectangular features exist within the foundations of former drying sheds and are shallow depressions with compacted gravel surrounded by concrete. Twelve of these features have three wetland parameters present and are described in Section 5.1.1 under the heading “Artificial Aquatic Features.” These additional four depressions do not have the more pronounced wetland hydrology displayed in the 12 similar features with three parameters. As such, hydric soils have not developed and hydrophytic vegetation dominance is less pronounced and comprised of non-native species. Normal conditions occur within these features and conditions have naturalized; however, they are entirely artificial and have limited wetland habitat value. Furthermore, these features are completely isolated and do not have connectivity to any other wetlands or other waters. These features do not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soils and their completely artificial conditions. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters. See Appendix 4 data forms TP9, TP10 and TP11 for adjacent three-parameter wetland conditions and TP8 and TP68 for surrounding upland conditions.

Coastal feature OF 11 is approximately 176 square feet and occurs southeast of and immediately adjacent to Wetland 17 (Appendix 5, Photograph 33). This feature is on the edge of the same depression that contains Wetland 17 and is elevated above the three-parameter wetland area. No wetland hydrology or hydric soil indicators were observed; however, strong hydrophytic vegetation dominance was observed extending from within the three-parameter wetland up the slope. The hydrophytic vegetation dominance reflects the stoloniferous growth of pacific silverweed (*Potentilla anserina* ssp. *pacifica*) and deeper-rooted willows supported by the wetland hydrology within Wetland 17. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydrology and hydric soils. It is protected as a potential wetland ESHA feature because of the presence of hydrophytic vegetation associated with an adjacent three-parameter wetland. No wetland test pit data was collected from within this feature, although an exploratory test pit was excavated within the feature to investigate for hydric soil and wetland hydrology indicators. See Appendix 4 data form TP13 for adjacent three-parameter wetland conditions and TP 69 for surrounding upland conditions.

Coastal feature OF 12 is approximately 2,382 square feet and occurs east of and immediately adjacent to Wetland 18 (Appendix 5, Photograph 34). This feature occurs at a slightly elevated position above the three-parameter Wetland 18 (within a shallow depression with two large DIs that provide connectivity to Humboldt Bay during extremely high tides or during storm events that fill the depression and drain into the DIs. Both hydrophytic vegetation dominance and wetland hydrology were observed; however, no evidence of hydric soils was observed. The wetland hydrology primary indicator of saturation (A3), which appears to be associated with the adjacent three-parameter wetland, and secondary indicators of Geomorphic Position (D2) and a vegetation community meeting the FAC-Neutral Test (D2) were observed, which are more indicative of irregular stormwater dependent hydrology rather than long-term wetland conditions. This may explain the absence of hydric soils. Dominant species within this feature were non-native and invasive species including dense flowered cordgrass, Italian rye grass, creeping bentgrass, red fescue (F*estuca rubra*), and birds-foot trefoil (*Lotus corniculatus*). Additionally, native high salt marsh indicator species were present at lower cover including coastal gumweed (*Grindelia stricta*), Pacific silverweed, pickleweed (*Salicornia pacifica*), and salt grass. This feature occurs on fill placed over historic tidelands that were filled for industrial development, likely over a century ago. Large industrial buildings occupied this location until demolition sometime in the past. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soil; however, it most closely resembles an Estuarine Intertidal Emergent Wetland. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters and presence of high salt marsh indicator species. See Appendix 4 data forms TP14 and TP73 for conditions within this two-parameter feature, TP 71 for surrounding upland conditions, and TP72 for three-parameter conditions in adjacent Wetland 18.

Coastal feature OF 13 is the largest two-parameter feature within the study area and is approximately 10,894 square feet. This feature surrounds Wetland 19 on three sides and occurs at a slightly higher elevation than the three-parameter wetland. Both OF 13 and Wetland 19 exist within a large shallow depression that has no outlet. Hydrophytic vegetation dominance and hydric soils were observed; however, no evidence of wetland hydrology was observed during the wetland delineation fieldwork in 2020 or 2022, likely reflecting the elevated nature above the three-parameter wetland. Hydric soil indicators Sandy Redox (S5) and 2cm Muck (A10) were observed with varying degrees of prominence and depth. Dominant species included wax myrtle, coast willow, and pacific willow with little to no vegetation in the understory. Deeper-rooted willow and wax myrtle may not reflect wetland conditions as they are able to intercept and access the water table associated with Wetland 19. Hydric soil development may reflect the deeply shaded forested conditions that contribute abundant organic material to the surface as well as stormwater flows from adjacent impervious surfaces. Stormwater flows from large expanses of adjacent impervious surfaces are directed into this feature. This may lead to transitory pulses of wetland hydrology as stormwater passes through OF 13 and makes its way downslope to Wetland 19, rather than persistent long-term wetland hydrology. Large industrial buildings occupied this location until demolition sometime in the past, and the depression likely reflects a former structure footprint. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of wetland hydrology; however, it most closely resembles a Palustrine Forested Wetland. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters and presence of wax myrtle scrub and coast dune willow-Sitka willow thicket. No wetland test pit data was collected from within this feature, although six exploratory pits were excavated throughout the feature to investigate for wetland hydrology indicators and to determine the relationship between the hydric soil development and hydrophytic vegetation. See Appendix 4 data form TP15 for conditions within adjacent Wetland 19 and TP 74 for surrounding upland conditions. Additionally, TP 70 records upland conditions nearby where hydric soils are present without hydrophytic vegetation dominance or wetland hydrology indicators.

Coastal feature OF 14 is approximately 297 square feet and occurs northwest of and immediately adjacent to Wetland 20 (Appendix 5, Photograph 35). It occurs within the same depression that contains Wetland 20 but is elevated above the three-parameter wetland area. Hydrophytic vegetation dominance and wetland hydrology indicators were present; however, no hydric soil indicators were observed. The hydrophytic vegetation dominance reflects the rhizomatous growth of common spikerush (*Eleocharis macrostachya*) and deeper-rooted willows supported by the wetland hydrology within Wetland 20. Wetland primary hydrology indicator, Water Marks (B1) and secondary wetland hydrology indicators of Water-Stained Leaves (B9) and Geomorphic Position (D2) were observed, which suggest temporary stormwater related flooding. Normal conditions occur within the feature, and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soils; however, it most closely resembles a Palustrine Scrub-shrub Wetland. It is protected as a potential wetland ESHA feature because of the presence of hydrophytic vegetation associated with an adjacent three-parameter wetland. See Appendix 4data form TP75 for conditions within this feature and TP 17 for conditions within adjacent Wetland 20.

Coastal feature OF 15 is approximately 315 square feet and is an isolated feature within a relatively flat gravelly area dominated by upland non-native grasses and other ruderal species (Appendix 5, Photograph 36). This feature occurs on a gentle slope with willow and slough sedge cover over sandy fill soils with brick and other fill chunks present. Hydrophytic vegetation dominance and hydric soils were observed; however, no evidence of wetland hydrology was observed. The sloping nature and lack of a geomorphic position in which to hold water prevents wetland hydrology from developing. Hydric soil indicators Histic Epipedon (A2), Black Histic (A3), and Depleted Below a Dark Surface (A11) were present with varying degrees of prominence and depth. Dominant species included coast willow, coyote brush (*Baccharis pilularis* ssp. *consanguinea*), and slough sedge. Deeper-rooted willow may not reflect wetland conditions as they are able to intercept and access the water table. Hydric soil development may reflect the shaded conditions and slough sedge cover that contribute abundant organic material to the surface as well as stormwater flows from adjacent impervious surfaces. Stormwater flows from large expanses of adjacent impervious surfaces are directed over this feature. This may lead to transitory pulses of wetland hydrology as stormwater passes through OF 15 and makes its way downslope, rather than persistent wetland hydrology. This is similar to what was observed at OF 13. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of wetland hydrology; however, it most closely resembles a Palustrine Scrub-shrub Wetland. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters. See Appendix 4 data form TP76 for conditions within this two-parameter feature and TP 80 for surrounding upland conditions.

Coastal feature OF 16 is approximately 419 square feet and is an isolated feature within a relatively flat gravelly area dominated by upland non-native grasses and other ruderal species (Appendix 5, Photograph 37). Hydrophytic vegetation dominance and wetland hydrology indicators were present; however, no hydric soil indicators were observed. Hydrophytic vegetation dominance and wetland hydrology indicators are restricted to a shallow depression that holds stormwater from adjacent impervious surfaces. Wetland primary hydrology indicator Sediment Deposits (B2) and secondary wetland hydrology indicators of a Geomorphic Position (D2) and a vegetation community that meets the FAC-Neutral Test were observed, which suggest temporary stormwater related flooding. Sediment deposits observed within this feature appear to be from an adjacent dirt/gravel road being used for adjacent construction activities. Normal conditions occur within the feature and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soils. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters. See Appendix 4 data form TP77 for conditions within this feature and TP80 for surrounding upland conditions.

Coastal feature OF 17 is approximately 188 square feet and occurs south of and immediately adjacent to Wetland 21 (Appendix 5, Photograph 38). This feature is slightly elevated above the three-parameter wetland area and does not display evidence of hydrophytic vegetation dominance or wetland hydrology. Hydric soil development is likely related to wetland hydrology in adjacent Wetland 21. OF 17 is too elevated for wetland hydrology and does not support hydrophytes. Wetland hydrology from adjacent Wetland 21 has led to the development of Sandy Redox (S5) and Depleted Below a Dark Surface (A11) hydric soil indicators within OF 17. Normal conditions occur within the feature, and conditions have naturalized; however, the existing conditions are a direct result of human activities that led to the development of Wetland 21. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydrophytic vegetation dominance and wetland hydrology. It is protected as a potential wetland ESHA feature because of the presence of hydric soils associated with an adjacent three-parameter wetland. See Appendix 4 data form TP78 for conditions within OF 17 and TP 80 for surrounding upland conditions. TP18 records conditions within adjacent Wetland 21.

Coastal feature OF 18 is approximately 2,047 square feet and is an isolated feature within an excavated basin. The excavated basin occurs on a slope within a former fly ash dump dating back to industrial use of the area (Appendix 5, Photograph 39). This location may have been excavated as a stormwater collection basin; however, the origins are unknown. Both hydrophytic vegetation dominance and wetland hydrology were observed, however no evidence of hydric soils was observed. The wetland hydrology indicators indicate weak hydrologic conditions that reflect past disturbance rather than ongoing wetland conditions. The secondary wetland hydrology indicators of a Geomorphic Position (D2) and a vegetation community meeting the FAC-Neutral Test (D2) were observed. The geomorphic position is a direct result of fly ash dumping and excavation which has facilitated the growth of willow and *Rubus* species. No evidence of primary wetland hydrology indicators was observed, which may explain the absence of hydric soils. Dominant species within this feature included coast willow, Pacific willow, Himalayan blackberry, and California blackberry. Normal conditions occur within the feature, and conditions have naturalized; however, the existing conditions are a direct result of human activities. This feature does not have conditions present that meet the criteria of a Cowardin class because of its lack of hydric soil and weak hydrologic conditions, but it somewhat resembles a Palustrine Forested or Scrub-shrub Wetland. It is protected as a potential wetland ESHA feature because of the presence of two wetland parameters. See Appendix 4 data form TP84 for conditions within this two-parameter feature and TP82 for surrounding upland conditions.

5.3.3 Non-Jurisdictional Features

Several features in the study area are not considered to be CCA jurisdictional features. These include the features described in Section 5.1.3 as well as several locations in the study area that have isolated hydrophytic vegetation dominance without hydric soils or wetland hydrology. The majority of these features consist of weak hydrophytic vegetation dominance, although two locations displayed hydric soil indicators with no evidence of wetland hydrology or hydrophytic vegetation dominance. These one-parameter hydrophytic vegetation features exhibit no hydrologic connectivity to any streams or wetlands in the study area and, for the most part, occur randomly throughout the study area and appear to reflect past disturbance, random species establishment, or industrial use of the site. In places where these features are near a wetland, evidence of hydrologic influence or connectivity were specifically searched for using sub-surface test pit investigations to determine whether adjacent hydrologic conditions were supporting hydrophytic vegetation dominance. Six test pits (TP2-TP4, TP35, TP56, and TP86) and several exploratory pits were excavated in areas with hydrophytic vegetation dominance that did not have hydric soil indicators or wetland hydrology indicators. These hydrophytic vegetation-dominated areas without wetland hydrology or hydric soils were determined to be non-coastal features, and hydrophytic species were determined to be functioning as non-hydrophytes.

Hydrophytic vegetation dominance was determined to be a poor indicator of wetland habitat within the study area. As mentioned in Section 4.2, the study area receives an average of more than 40 inches of annual rainfall and average high temperatures are 59.2°F (15.1°C), resulting in low evapotranspiration rates. Furthermore, measurable rainfall occurs year-round, and the close proximity of the study area to the Pacific Ocean results in persistent fog cover and high humidity levels, which maintain moist conditions throughout the study area, even in upland locations. This is reflected in portions of the study area where hydrophytes are dominant where no wetland hydrology conditions or hydric soil indicators are present, as recorded in five TPs (TP2-TP4, TP35, TP56, and TP86).

Himalayan blackberry (facultative plant species [FAC]) was the most common of the weak hydrophytes observed in upland locations and was a dominant in TP2-TP4, TP35, and TP86. Other common dominants included coast willow (facultative-wetland plant species [FACW]), Sitka willow (FACW), Pacific willow (FACW), California wax myrtle (FACW), and California blackberry (facultative-upland plant species [FACU]). Lesser dominants included canary reedgrass (*Phalaris arundinacea* [FACW]), jubata grass (FACU), Italian ryegrass (FAC), creeping bent grass (FAC), dune rush (FACW), pacific aster (FAC), English ivy (Hedera helix [FACU]), and slough sedge (obligate-wetland plant species [OBL]) among others.

Woody species, such as the Salix species and California wax myrtle are common throughout the study area and are an example of hydrophytic species that can become established in many conditions, regardless of wetland conditions at such close proximity to the coast. The occurrences of these species throughout the study area seem to reflect past disturbance and subsequent disuse of the site rather than wetland conditions in many cases, although they are certainly common within wetland areas as well. Woody species are able to support themselves through drier periods with well-established root systems that are able to reach moist soils even when the surface is dry and wetland hydrology is not present.

All of the native hydrophytic herbaceous species commonly found growing in upland areas within the study area are rhizomatous and capable of growing extensive root networks that can support the plants through relatively dry periods. Furthermore, species such as dune rush (FACW) and slough sedge (OBL) have fibrous root systems that are capable of obtaining soil moisture from the soil surface or deep in the soil profile. This reflects these species' adaptation to growing at the edge of wetlands, where hydrologic conditions may fluctuate. The study area is in an area with abundant, year-round precipitation and substantial fog drip, which allows these species to thrive in otherwise upland conditions without the input of wetland hydrology and are, therefore, not always suitable indicators of wetland conditions at this location. Canary reedgrass, pennyroyal, creeping bentgrass, and creeping buttercup are opportunist invasive species and are not suitable indicators of wetland conditions within the study area.

In all circumstances, soils were non-hydric and well drained fill with varying degrees of compaction and soil textures. Additionally, none of these locations had wetland hydrology indicators present, nor evidence of past hydrology. Typically, the hydrophytic vegetation-dominated areas not mapped as wetlands were elevated and without a geomorphic position to catch stormwater and were incapable of supporting or developing wetland hydrology. Because of this, and the climatic reasons described above, the hydrophytic vegetation at these locations are not functioning as hydrophytes. Therefore, these locations are not considered coastal wetlands and are not mapped as such.

Two one-parameter test pits (TP70 and TP78) were found to have hydric soils without hydrophytic vegetation dominance or wetland hydrology. These were areas with hydric soils that had normal conditions present and no recent disturbance but were without hydrophytic vegetation dominance or wetland hydrology indicators and were determined to be relictual soils or a result of the extensive manipulation of the site and not a reflection of wetland conditions. Hydric soil indicators were observed: Depleted Below a Dark Surface (A11) and Sandy Redox (S5). Soils were sandy fill soils at both locations, and both were in flat or slightly elevated locations. Hydric soil indicators might be relictual from past conditions or were moved as fill material; however, it is also possible that hydric soils are developing in situ at both locations. The mechanism for hydric soil development is unknown given the upland conditions at both locations. It could be the result of irregular stormwater dependent hydrology rather than long term wetland conditions as observed at other locations, or it could be saturation resulting from poor drainage of flat graded fill. If this were the case, it would be expected that hydrophytic vegetation would become established, which has not happened. These locations were determined to be upland because wetland habitat is not present, and no evidence of wetland hydrology was observed.

Every attempt was made to determine the potential occurrence of coastal wetlands, as observed by evidence of wetland hydrology and other indicators. It is the best professional judgement of the wetland scientist and soil scientist completing this work that the hydrophytic vegetation-dominated areas without hydric soils or wetland hydrology and the locations with hydric soil without wetland hydrology or hydrophytic vegetation are not coastal wetland features for the reasons described above. Therefore, these features were not mapped and are considered upland.

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Potential Wetland Waters of the U.S. in the Study Area

1

Waters of the State in the Study Area

Aquatic Resource Name[a]	Cowardin Code/Name[b]	Centroid Location (latitude, longitude) Datum WGS 84	Aquatic Resource Area (square feet)	Aquatic Resource Length (linear feet)	401 Jurisdictional Area (square feet)	1600–1607 Jurisdictional Area (square feet)	CCA Jurisdictional Area (square feet)
Potential Wetland Waters of the State in the Study Area							
Palustrine Forested Wetland							
Wetland 05	PFO1Es0n	40.820908°, -124.177560°	2,377	N/A	2,377	0	2,377
Wetland 06	PFO3E0n	40.821393°, -124.17954658°	1,486	N/A	1,486	0	1,486
Wetland 09	PFO1Hx+h0n	40.819948°, -124.178740°	973	N/A	973	0	973
Wetland 19	PFO1Es0n	40.814307°, -124.185636°	3,314	N/A	3,314	0	3,314
Palustrine Forested Wetland Subtotal[c]			**8,150 (0.187 acre)**	N/A	**8,150 (0.187 acre)**	**0**	**8,150 (0.187 acre)**
Palustrine Scrub-Shrub Wetland							
Wetland 02	PSS3F+Dx0+3n	40.824092°, -124.174216°	71	N/A	71	0	71
Wetland 04	PSS1Bx0n	40.822749°, -124.175590°	341	N/A	341	0	341
Wetland 07	PSS1Cx0n	40.820672°, -124.178977°	702	N/A	702	0	702
Wetland 08	PSS4Ex0n	40.820253°, -124.178992	983	N/A	983	0	983
Wetland 10	PSS1+4Bs0n	40.819808°, -124.179274°	3,212	N/A	3,212	0	3,212
Wetland 11	PSS1A+Bs+x0n	40.819633°, -124.179077°	204	N/A	204	0	204
Wetland 14	PSS1Bs0n	40.819467°, -124.180612°	434	N/A	434	0	434
Wetland 16	PSS1Cx0n	40.818528°, -124.184824°	3,951	N/A	3,951	0	3,951

Aquatic Resource Name[a]	Cowardin Code/Name[b]	Centroid Location (latitude, longitude) Datum WGS 84	Aquatic Resource Area (square feet)	Aquatic Resource Length (linear feet)	401 Jurisdictional Area (square feet)	1600–1607 Jurisdictional Area (square feet)	CCA Jurisdictional Area (square feet)
Wetland 20	PSS1Cs0n	40.814230°, -124.187096°	169	N/A	169	0	169
Wetland 21	PSS1Cs0n	40.814050°, -124.187968°	2,504	N/A	2,504	0	2,504
Wetland 22	PSS1Cs0n	40.813890°, -124.188198°	105	N/A	105	0	105
Wetland 24	PSS/EM1B0n	40.809907°, -124.195697°	258	N/A	258	0	258
Palustrine Scrub-shrub Wetland Subtotal[c]			**12,934 (0.297 acre)**	**N/A**	**12,934 (0.297 acre)**	N/A	**12,934 (0.297 acre)**
Palustrine Emergent Wetland							
Wetland 12	PEM1A+Bs0n	40.819388°, -124.179667°	502	N/A	502	0	502
Wetland 13	PEM1A+Bx0n	40.819189°, -124.179666°	81	N/A	81	0	81
Wetland 17	PEM1Es0n	40.815370°, -124.185282°	2,284	N/A	2,284	0	2,284
Palustrine Emergent Wetland Subtotal[c]			**2,867 (0.066 acre)**	**N/A**	**2,867 (0.066 acre)**	N/A	**2,867 (0.066 acre)**
Estuarine Wetland							
Wetland 01	E2EM1N3g	40.822387°, -124.175569°	23,957	N/A	23,957	0	23,957
Wetland 03	E2US+EM1N3n	40.823083°, -124.175129°	9,193	N/A	9,193	0	9,193
Wetland 15	E2US+EM1N3n	40.817998°, -124.181074°	704	N/A	704	0	704
Wetland 18	E2EM1Px3n	40.814823°, -124.185240°	1,522	N/A	1,522	0	1,522
Wetland 23	E2FO3Nx3n	40.811575°, -124.187987°	56	N/A	56	0	56

Aquatic Resource Name[a]	Cowardin Code/Name[b]	Centroid Location (latitude, longitude) Datum WGS 84	Aquatic Resource Area (square feet)	Aquatic Resource Length (linear feet)	401 Jurisdictional Area (square feet)	1600–1607 Jurisdictional Area (square feet)	CCA Jurisdictional Area (square feet)
Estuarine Wetland Subtotal[c]			**35,432 (0.813 acres)**	**N/A**	**35,432 (0.813 acres)**	**0**	**35,432 (0.813 acres)**
Artificial Aquatic Features							
Concrete Vault and Foundation	PFO1Erx0n	40.819480°, -124.183669°	667	N/A	667	0	667
Drying shed Foundations	PEM1Brx0n	40.816284°, -124.186059°	15,398	N/A	15,398	0	15,398
Stormwater Collection System (3 polygons)	N/A	40.806902°, -124.191117°	7,991	N/A	7,991	0	7,991
Artificial Aquatic Features Subtotal			**24,056 (0.552 acres)**	**N/A**	**24,056 (0.552 acres)**	N/A	**24,056 (0.552 acres)**
Wetland Waters Total[c]			**83,439 (1.915 acres)**	**N/A**	**83,439 (1.915 acres)**	**0**	**83,439 (1.915 acres)**
Potential Non-wetland Waters of the State in the Study Area							
Estuarine Intertidal Shoreline							
MHHW 01	E2US3N, E2AB3N	40.823699°, -124.174337°	14,971	1,394	14,971	0	14,971
MHHW 02	E2US3N, E2AB3N	40.814588°, -124.184641°	211,444	10,878	211,444	0	211,444
Estuarine Intertidal Subtotal			**226,415 (5.198 acres)**	**12,272 (2.324 miles)**	**226,415 (5.198 acres)**	**0**	**226,415 (5.198 acres)**
Other Waters of the State							
OF 01	N/A		2,419	N/A	0	0	2,419
OF 02	N/A		167	N/A	0	0	167
OF 03	N/A		518	N/A	0	0	518
OF 04	N/A		447	N/A	0	0	447
OF 05	N/A		668	N/A	0	0	668
OF 06	N/A		731	N/A	0	0	731
OF 07	N/A		2,934	N/A	0	0	2,934
OF 08	N/A		351	N/A	0	0	351
OF 09	N/A		1082	N/A	0	0	1082

Aquatic Resource Name[a]	Cowardin Code/Name[b]	Centroid Location (latitude, longitude) Datum WGS 84	Aquatic Resource Area (square feet)	Aquatic Resource Length (linear feet)	401 Jurisdictional Area (square feet)	1600–1607 Jurisdictional Area (square feet)	CCA Jurisdictional Area (square feet)
OF 10 (4 polygons)	N/A		7,963	N/A	0	0	7,963
OF 11	N/A		176	N/A	0	0	176
OF 12	N/A		2,382	N/A	0	0	2,382
OF 13	N/A		10,894	N/A	0	0	10,894
OF 14	N/A		297	N/A	0	0	297
OF 15	N/A		315	N/A	0	0	315
OF 16	N/A		419	N/A	0	0	419
OF 17	N/A		188	N/A	0	0	188
OF 18	N/A		2,047	N/A	0	0	2,047
Other Waters of the State Subtotal			**33,998 (0.780 acre)**	**12,272 (2.324 miles)**	**0**	**0**	**33,998 (0.780 acre)**
Non-Wetland Waters Total			**260,413 (5.978 acres)**	**12,272 (2.324 miles)**	**226,415 (5.198 acres)**	**0**	**260,413 (5.978 acres)**

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

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[a] Data forms were collected for some of these features as shown on the maps in Appendix 2.

[b] Cowardin Codes:

E2AB3N	Estuarine Intertidal Aquatic Bed Rooted Vascular Regularly Flooded
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
E2US3N	Estuarine Intertidal Unconsolidated Shore Mud Regularly Flooded
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
PEM1Brx0n	Palustrine Emergent Persistent Seasonally Saturated artificial substrate Excavated Freshwater wetland with mineral soils
PEM1Es0n	Palustrine Emergent Persistent Seasonally Flooded/Saturated spoils Freshwater wetland with mineral soils
PFO1Erx0n	Palustrine Forested Broad-leaved Deciduous Seasonally Flooded/Saturated Artificial Substrate Excavated 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

PFO1Es0n	Palustrine Forested Broad-leaved Deciduous Seasonally Flooded/Saturated Spoils 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/Seasonally Saturated 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.

[c] 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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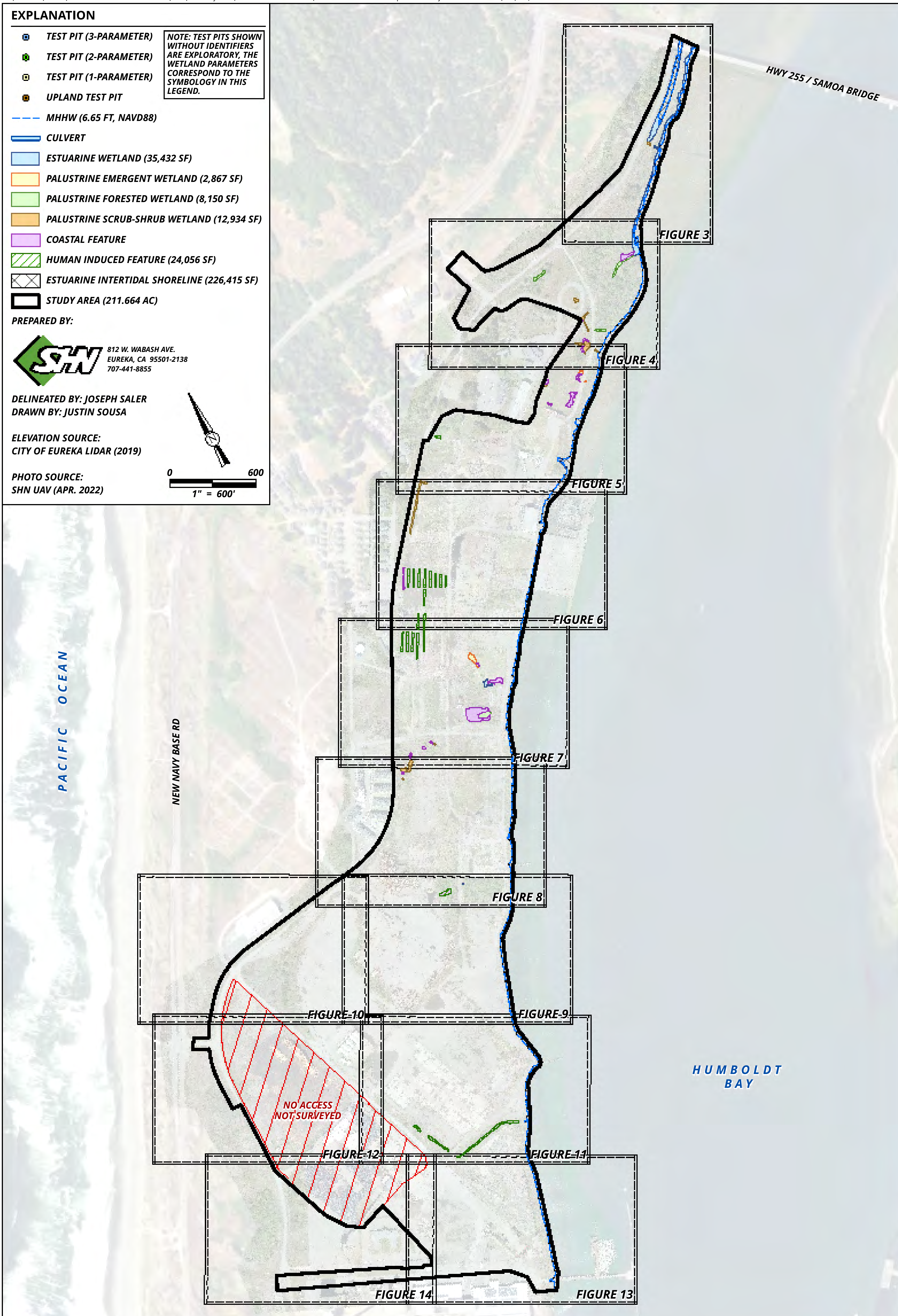
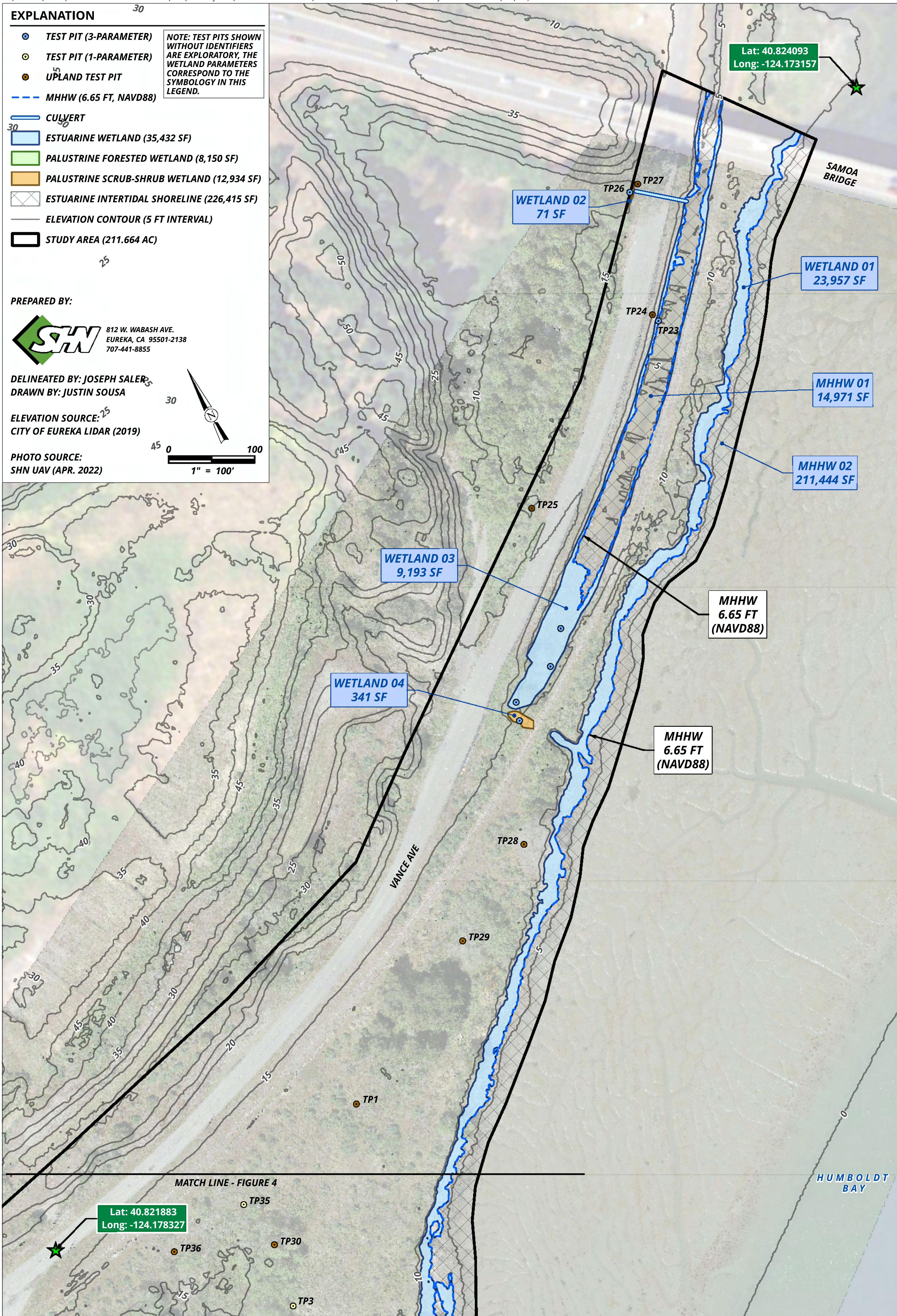


SHN

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

Sheet Index
CWA Sec. 401 Jurisdictional Features
December 2023 - 022054.400

Figure
2



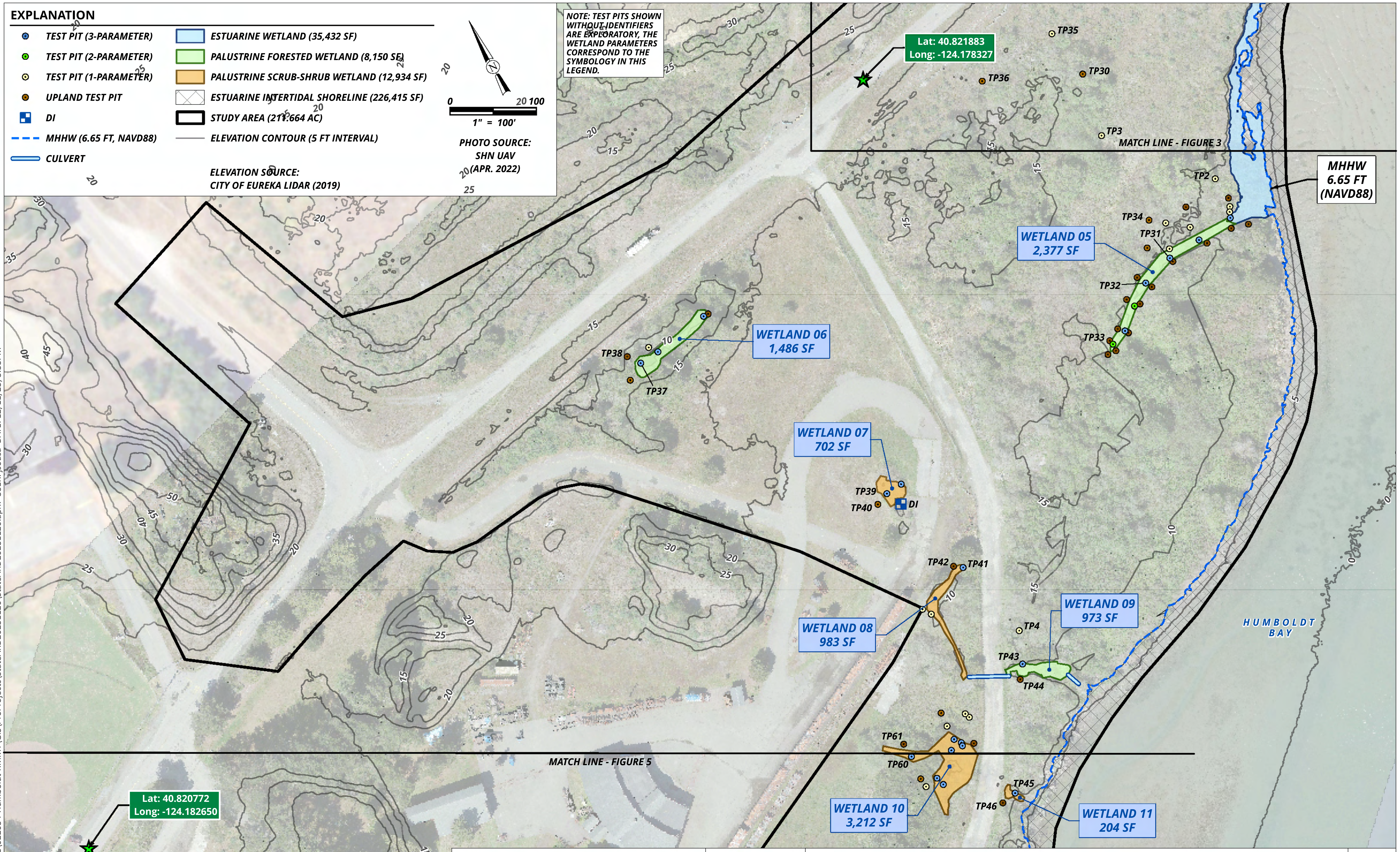
Humboldt Bay Harbor, Recreation, & Conservation District
Humboldt Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

MHHW
6.65 FT
(NAVD88)

TP2
TP34

Aquatic Resources
CWA Sec. 401 Jurisdictional Features
December 2023 - 022054.400

Figure
3



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DRAWN BY: JUSTIN SOUSA

PREPARED BY:
SHN
812 W. WABASH AVE.
EUREKA, CA 95501-2138
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Aquatic Resources
CWA Sec. 401 Jurisdictional Features
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Figure 4

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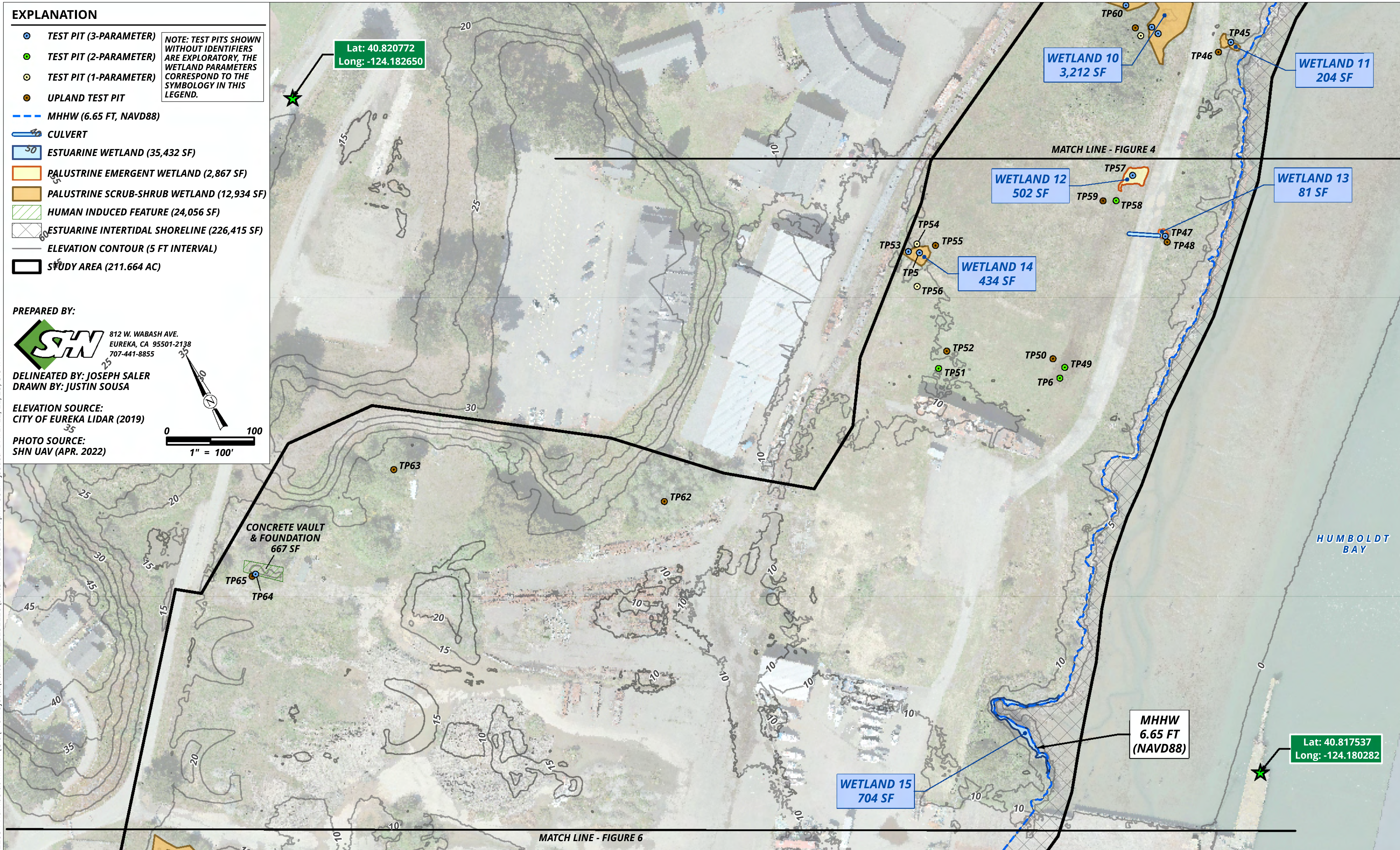

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Humb. Bay Offshore Wind Heavy Lift Marine Terminal
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Aquatic Resources
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Figure
5

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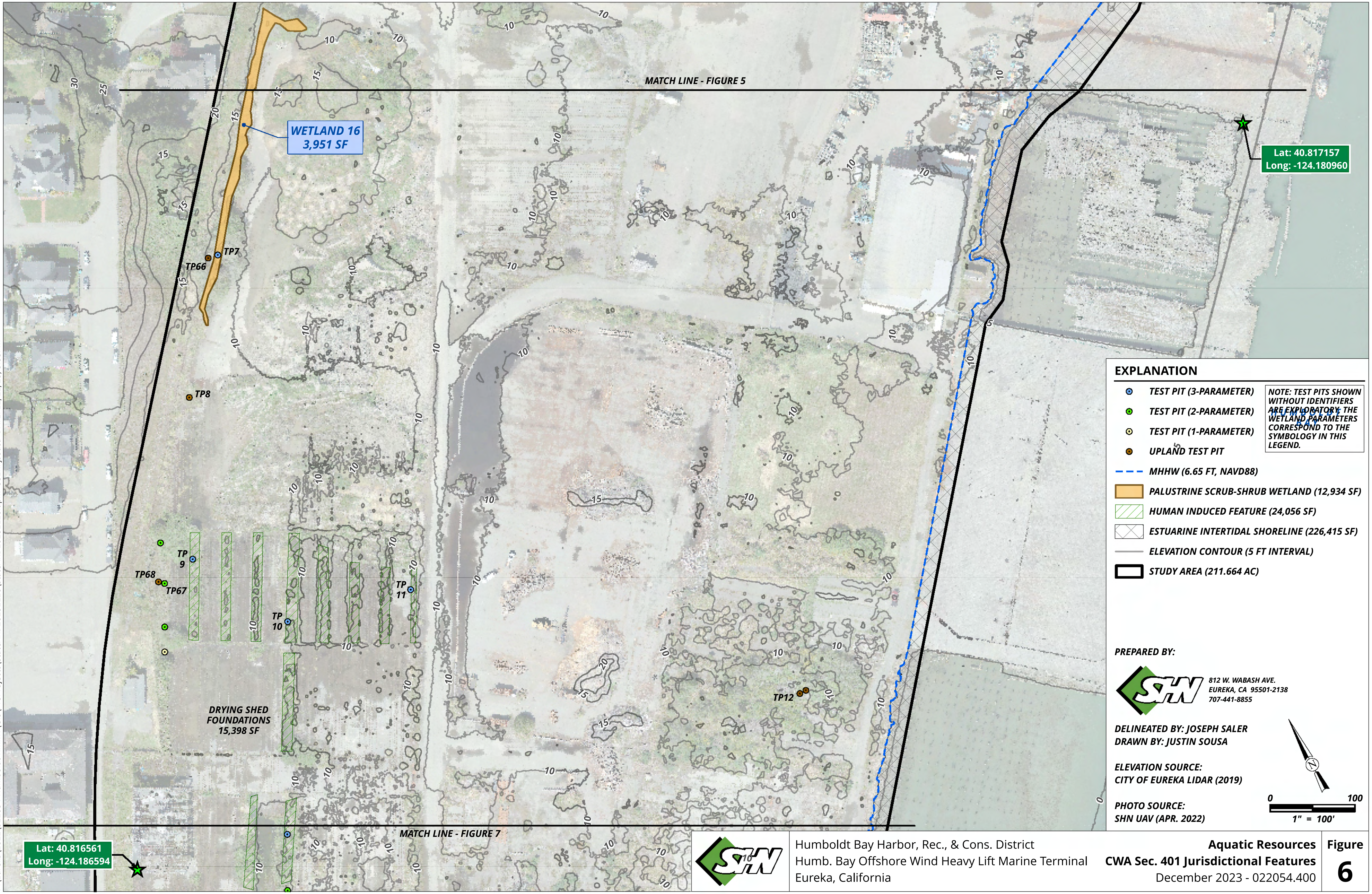

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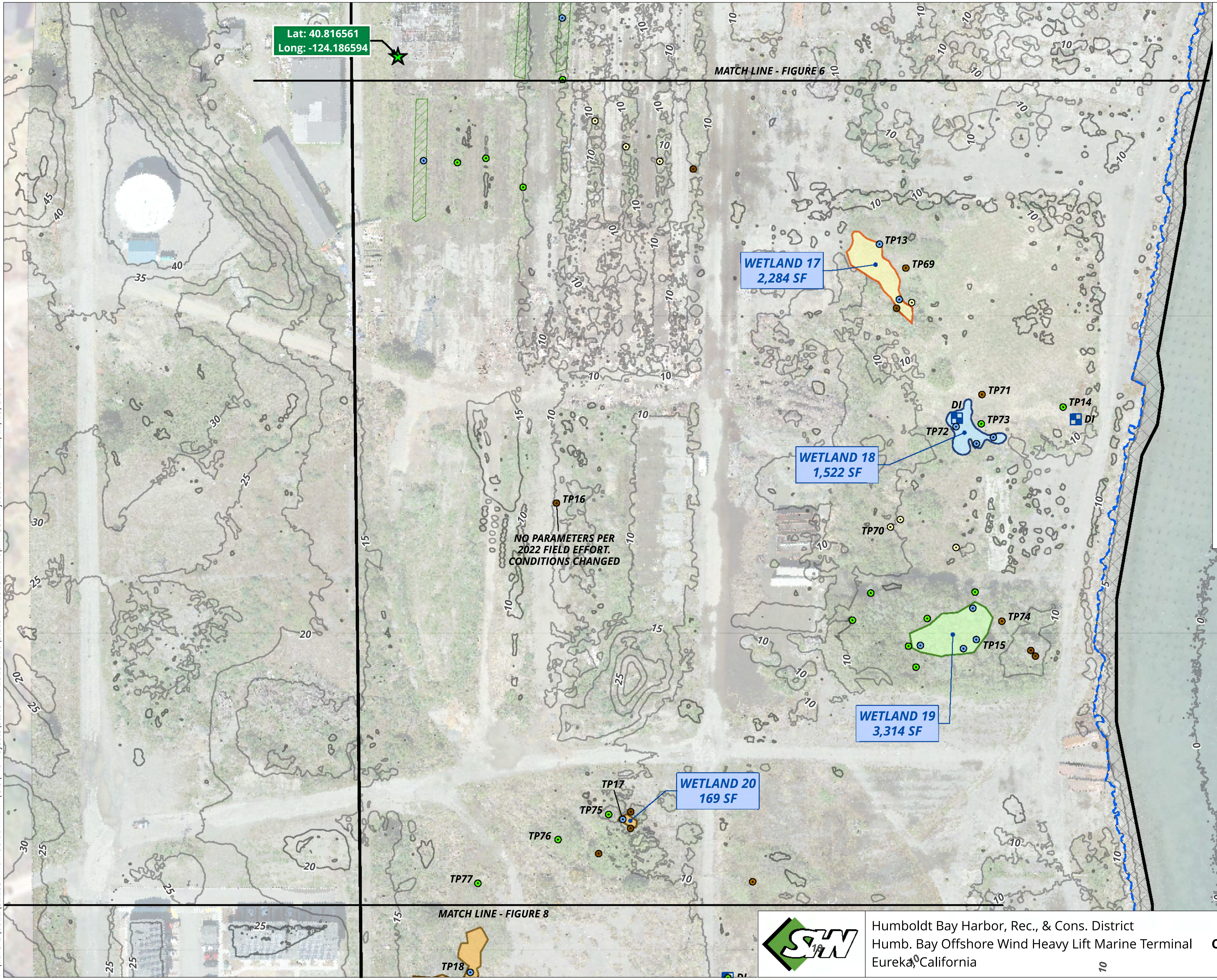
Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CWA Sec. 401 Jurisdictional Features
December 2023 - 022054.400

Figure
6



EXPLANATION

- TEST PIT (3-PARAMETER)
- TEST PIT (2-PARAMETER)
- TEST PIT (1-PARAMETER)
- UPLAND TEST PIT
- DI
- MHHW (6.65 FT, NAVD88)
- ESTUARINE WETLAND (35,432 SF)
- PALUSTRINE EMERGENT WETLAND (2,867 SF)
- PALUSTRINE FORESTED WETLAND (8,150 SF)
- PALUSTRINE SCRUB-SHRUB WETLAND (12,934 SF)
- HUMAN INDUCED FEATURE (24,056 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:

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 CWA Sec. 401 Jurisdictional Features December 2023 - 022054.400	Figure 7

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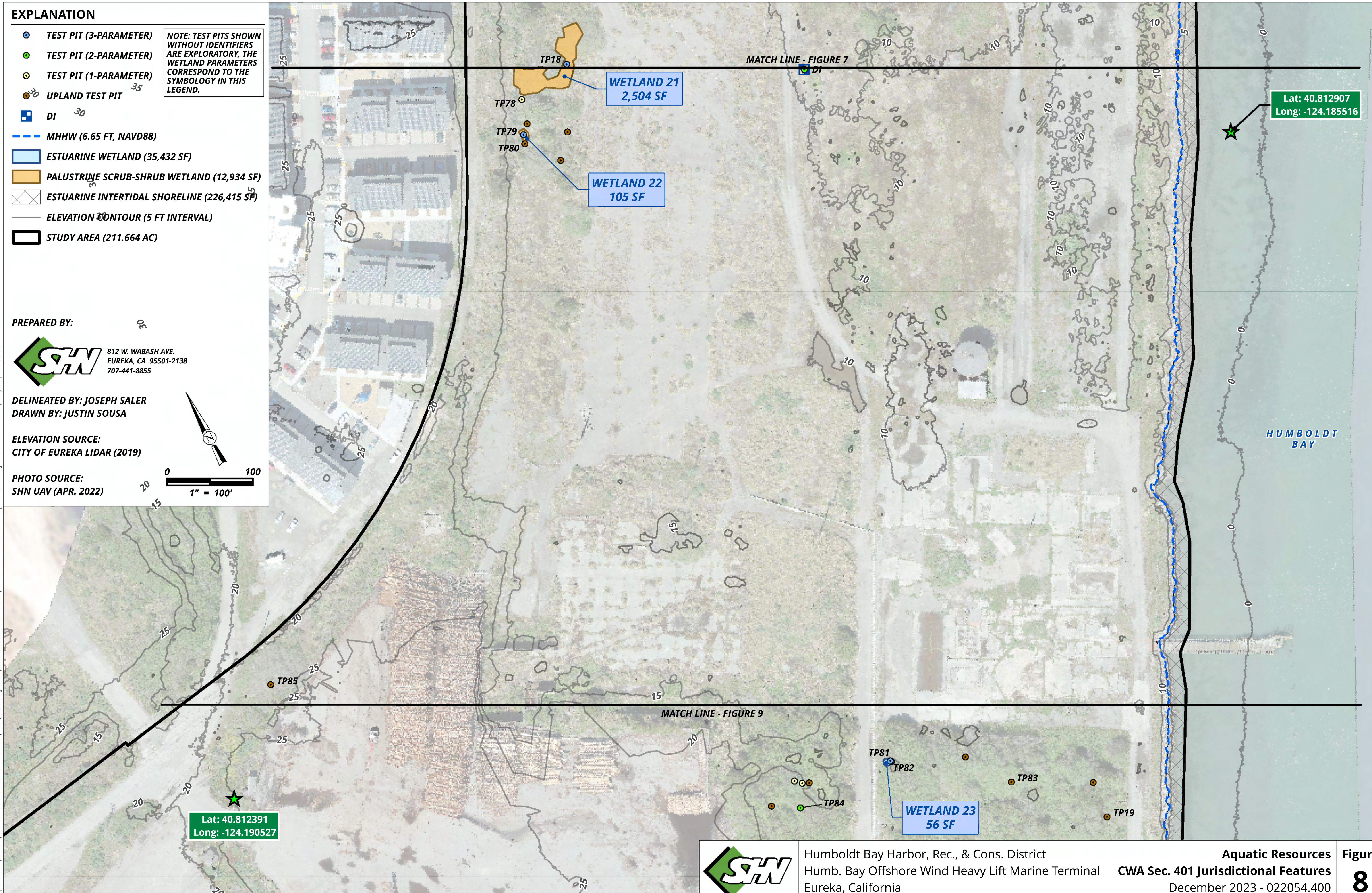
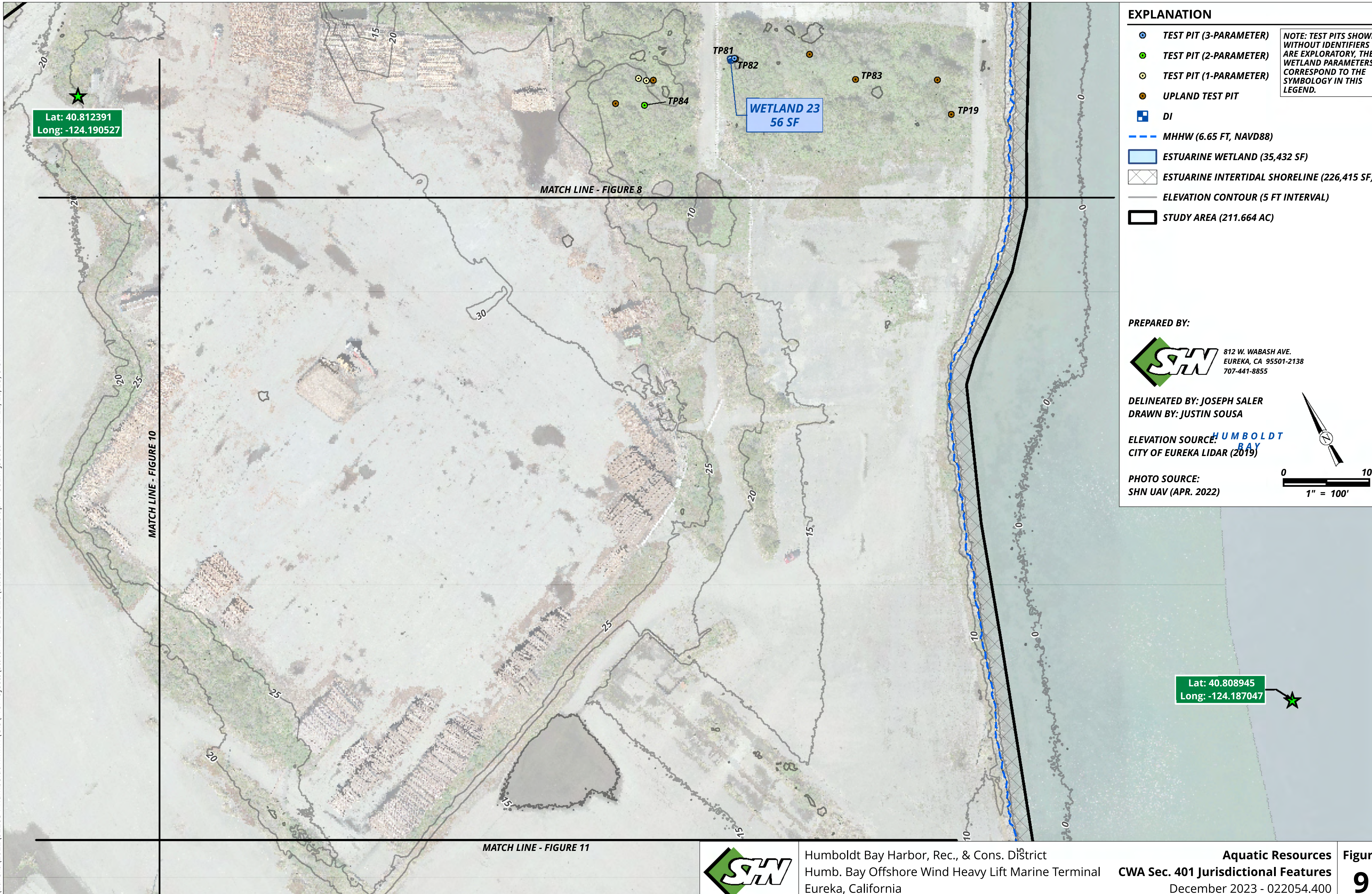


Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CWA Sec. 401 Jurisdictional Features
December 2023 - 022054.400

Figure
8



EXPLANATION

- TEST PIT (3-PARAMETER)
- TEST PIT (2-PARAMETER)
- TEST PIT (1-PARAMETER)
- UPLAND TEST PIT
- DI
- MHHW (6.65 FT, NAVD88)
- ESTUARINE WETLAND (35,432 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
CWA Sec. 401 Jurisdictional Features
December 2023 - 022054.400

Figure 9

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EXPLANATION

ELEVATION CONTOUR (5 FT INTERVAL)

STUDY AREA (211.664 AC)

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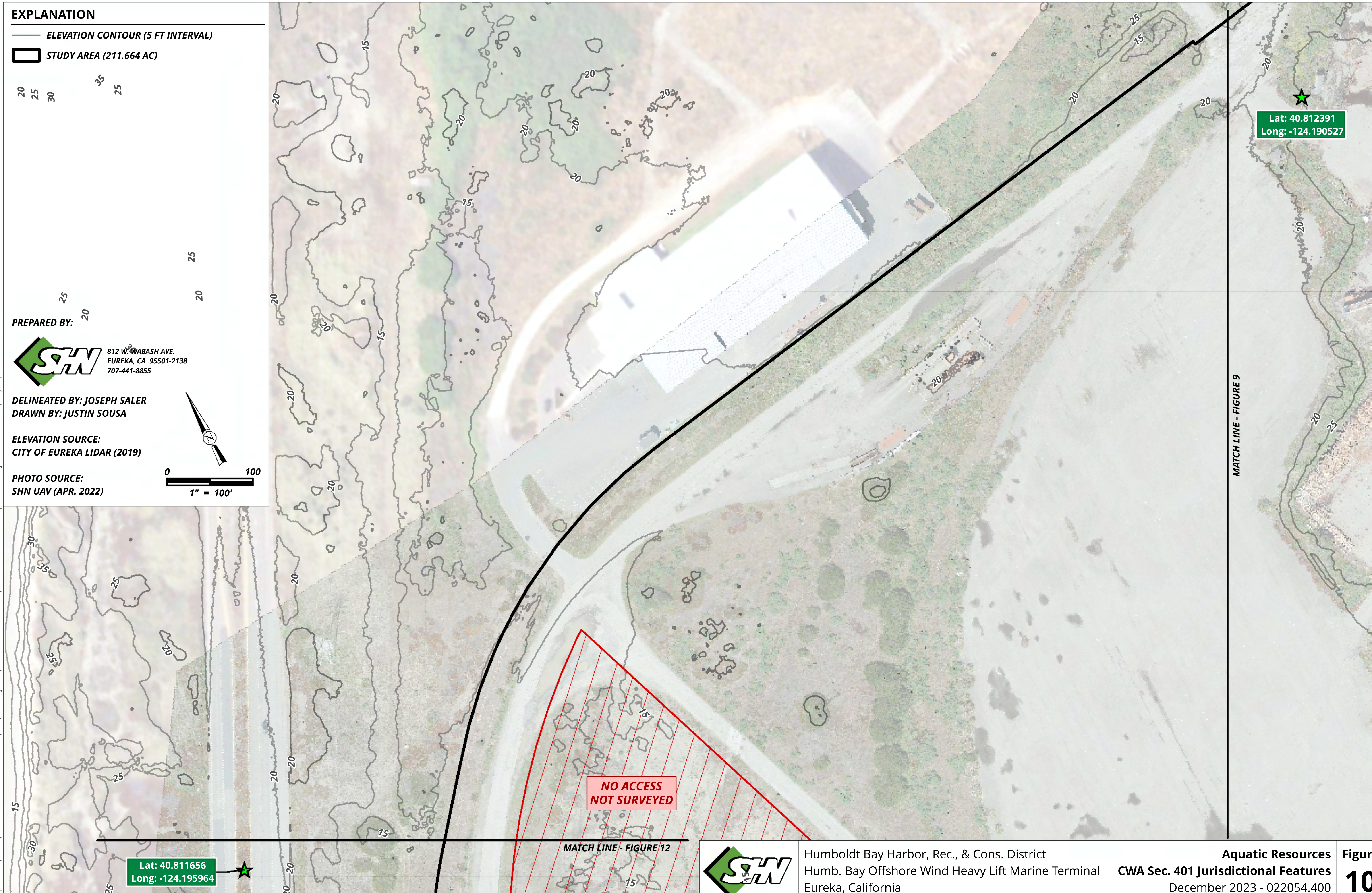
DRAWN BY: JUSTIN SOUSA

ELEVATION SOURCE:
CITY OF EUREKA LIDAR (2019)

PHOTO SOURCE:
SHN UAV (APR. 2022)

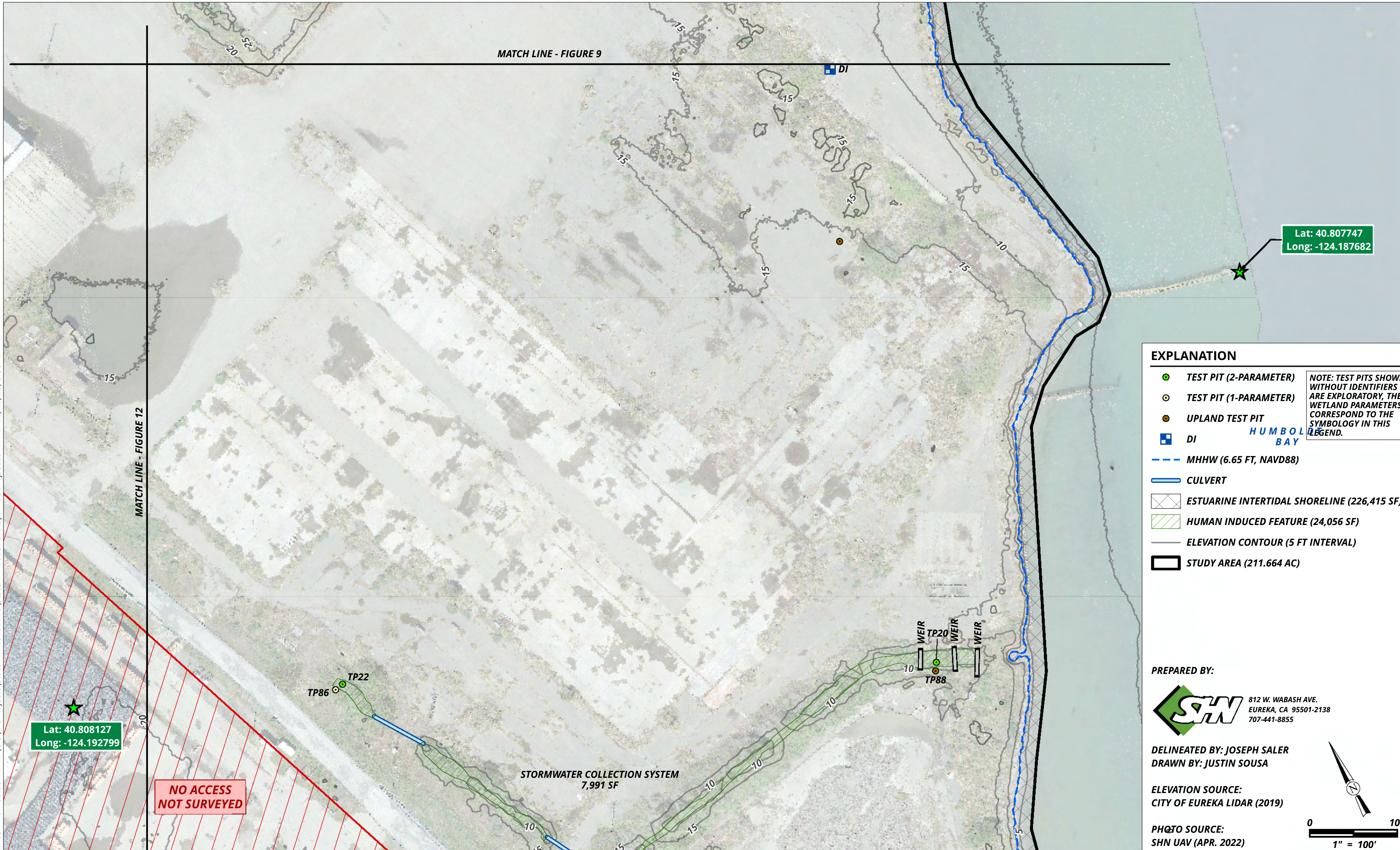
0 100
1" = 100'



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

Aquatic Resources
CWA Sec. 401 Jurisdictional Features
December 2023 - 022054.400

Figure 10



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

Aquatic Resources
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December 2023 - 022054.400

Figure 11

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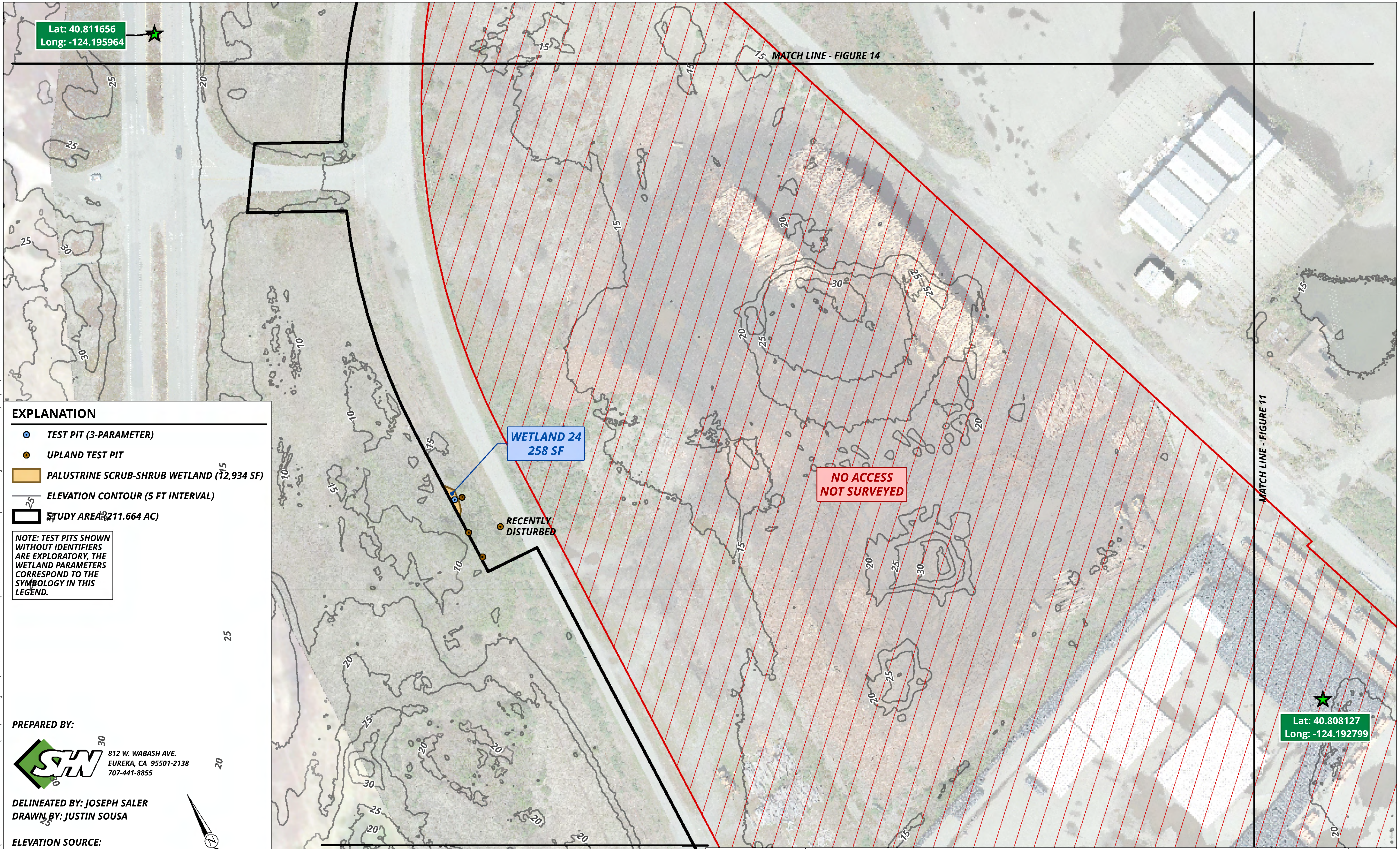

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CWA Sec. 401 Jurisdictional Features
December 2023 - 022054.400

Figure 12

SHN

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

Aquatic Resources
CWA Sec. 401 Jurisdictional Features
December 2023 - 022054.400

Figure
13

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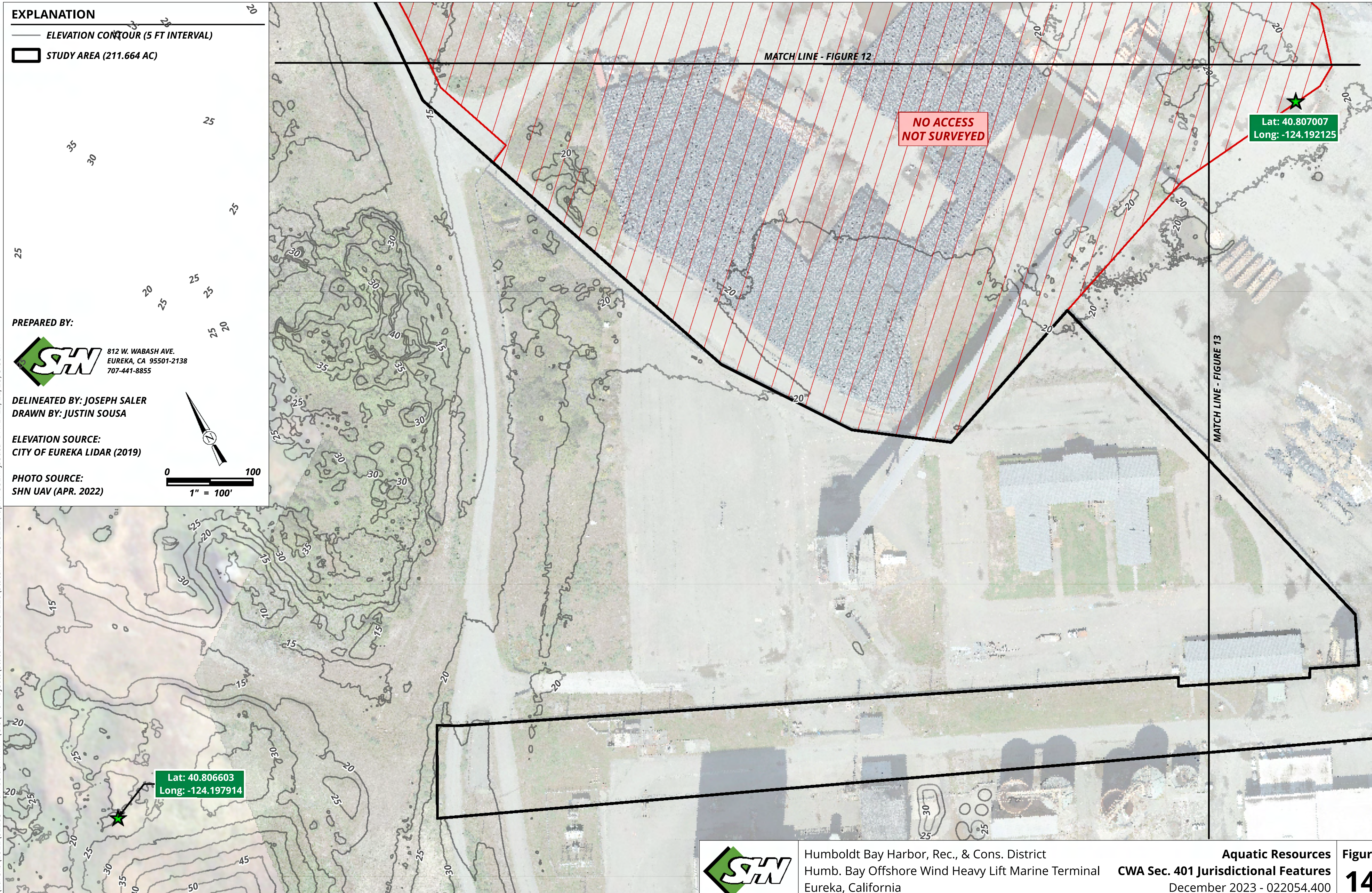

EXPLANATION

ELEVATION CONTOUR (5 FT INTERVAL)

STUDY AREA (211.664 AC)

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EUREKA, CA 95501-2138
707-441-8855

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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** **CWA Sec. 401 Jurisdictional Features** December 2023 - 022054.400	**Figure** **14**

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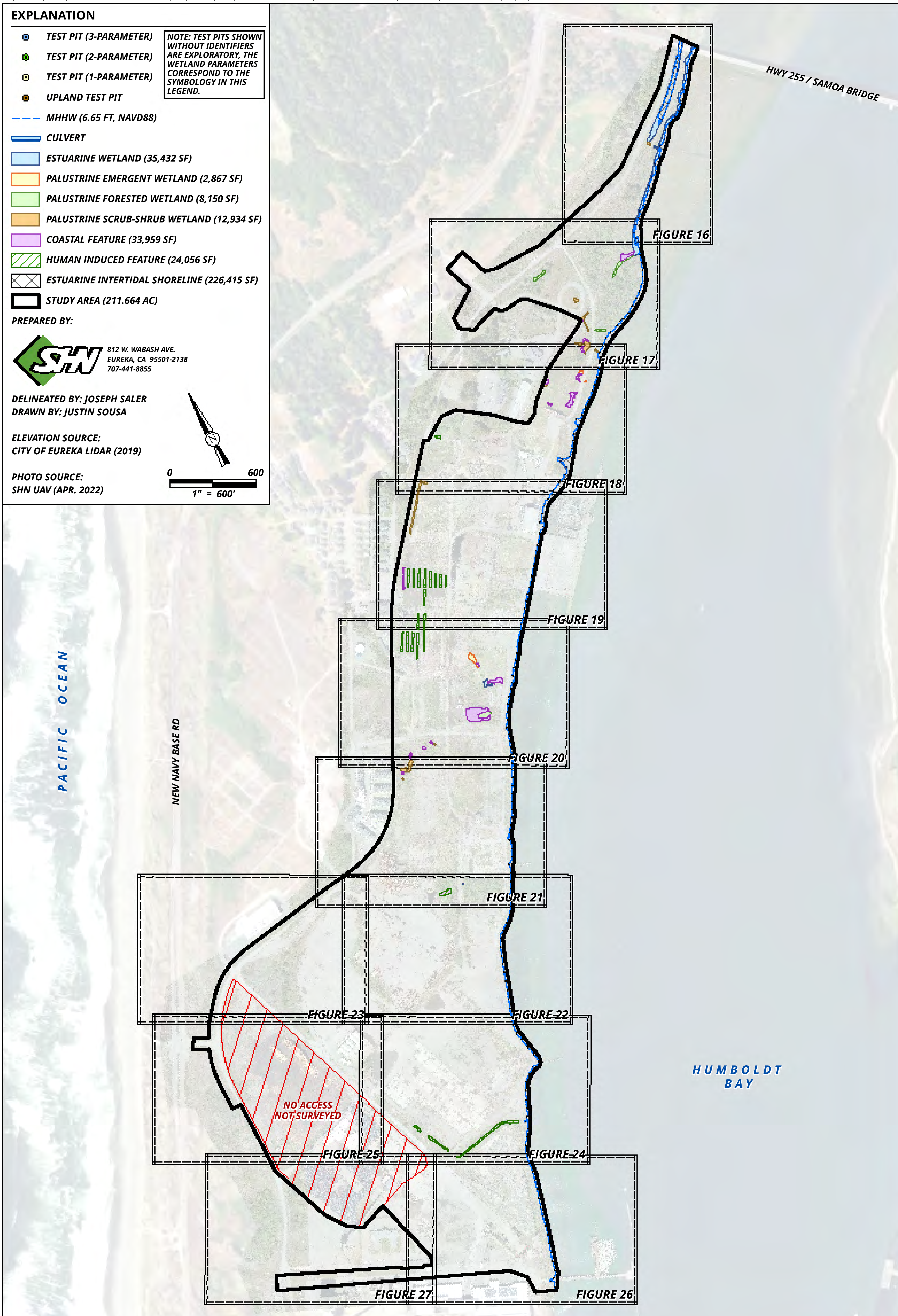

Humboldt Bay Harbor, Recreation, & Conservation District
Humboldt Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Sheet Index
CCA Jurisdictional Features
December 2023 - 022054.400

Figure
15

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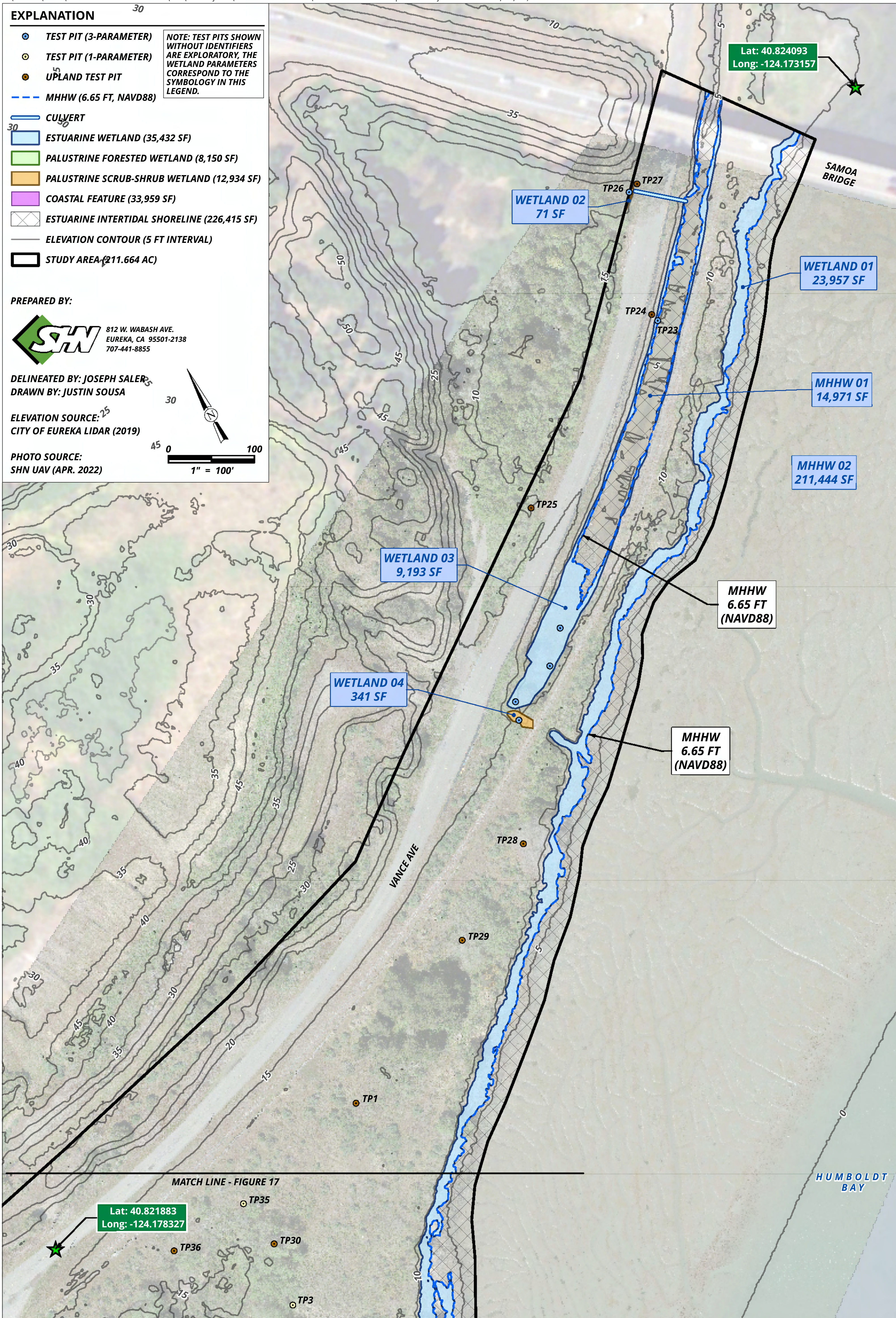
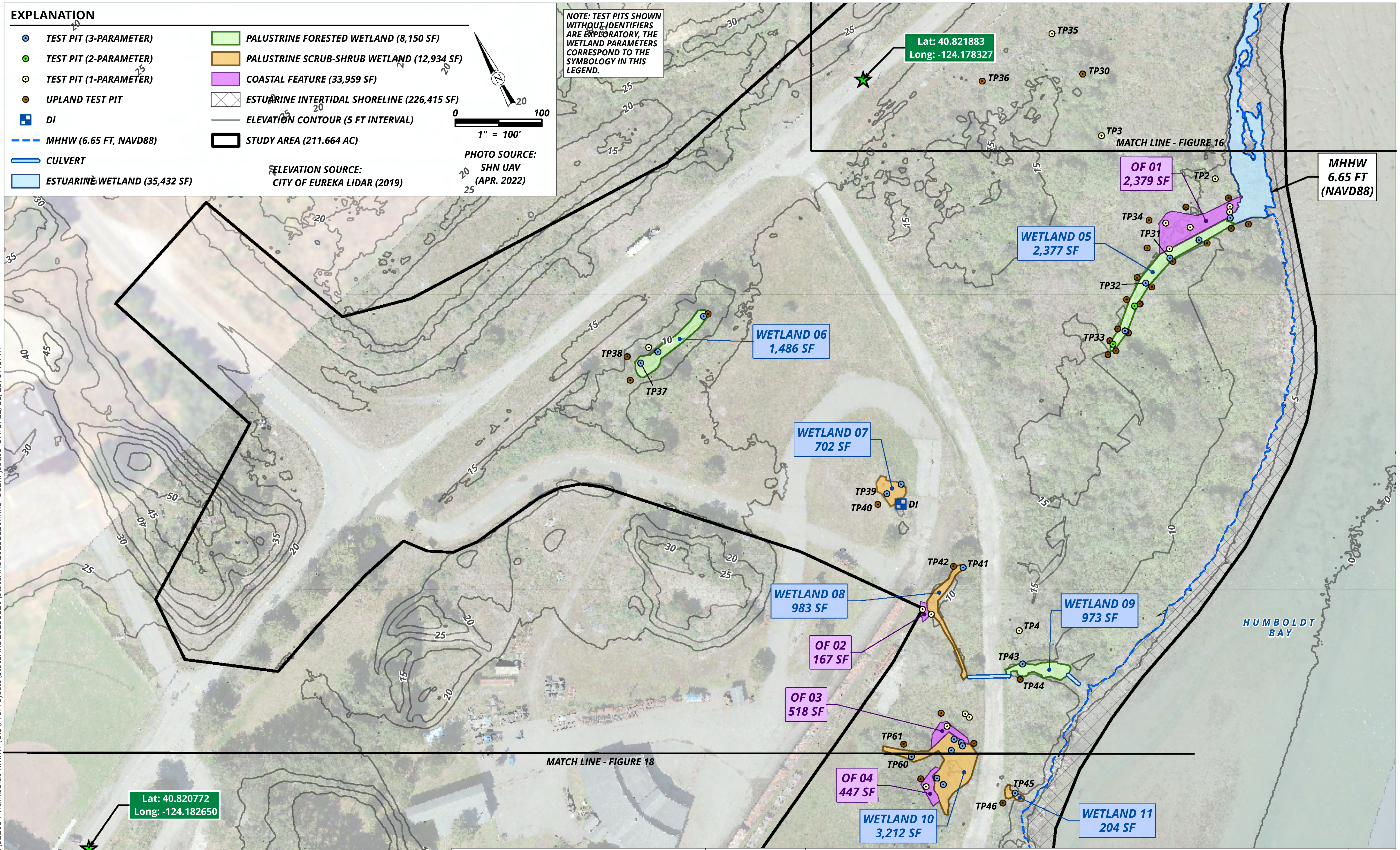


Humboldt Bay Harbor, Recreation, & Conservation District
Humboldt Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure
16



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DRAWN BY: JUSTIN SOUSA

PREPARED BY:
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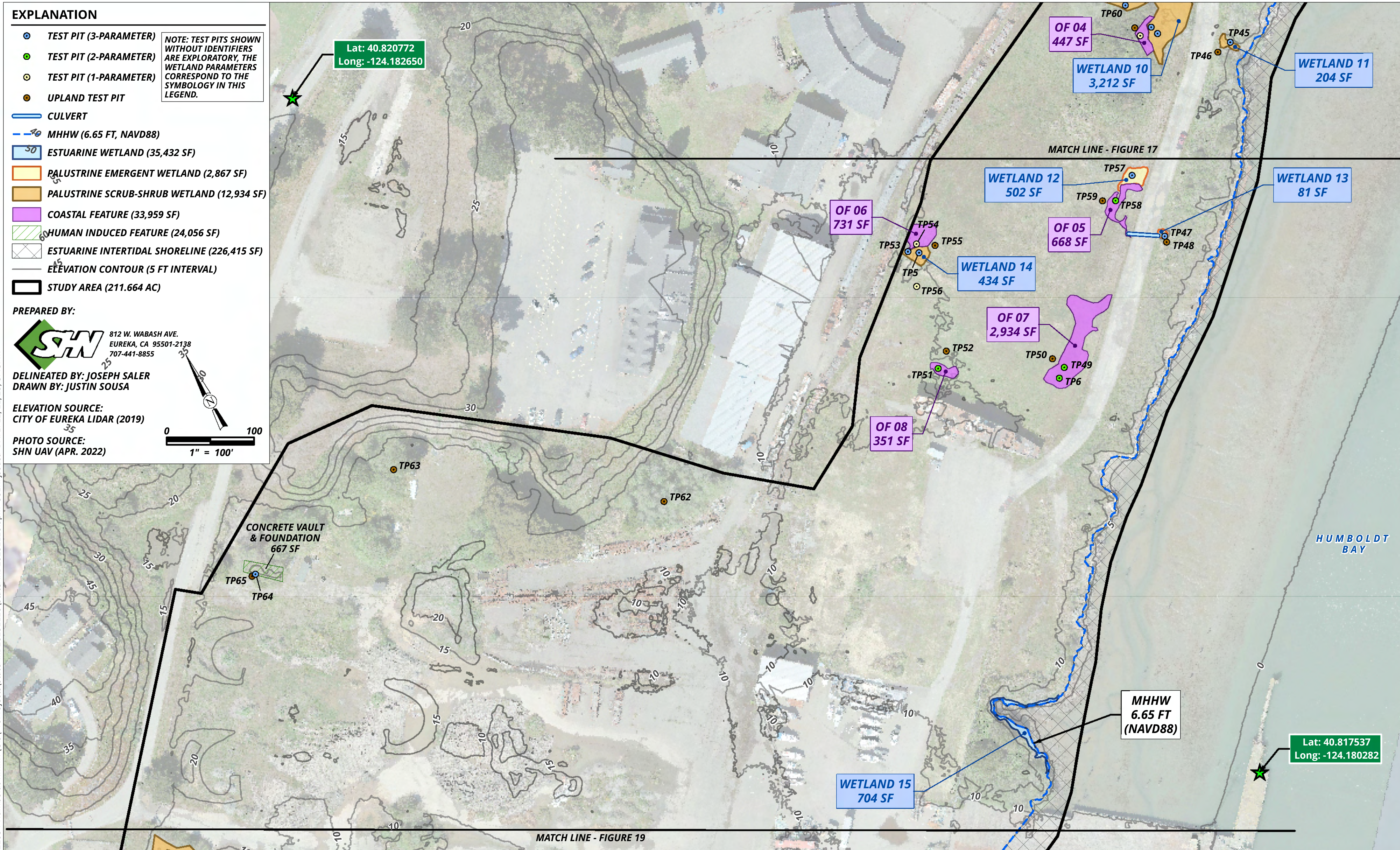
Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Hvy. Lift Marine Terminal
Eureka, California

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

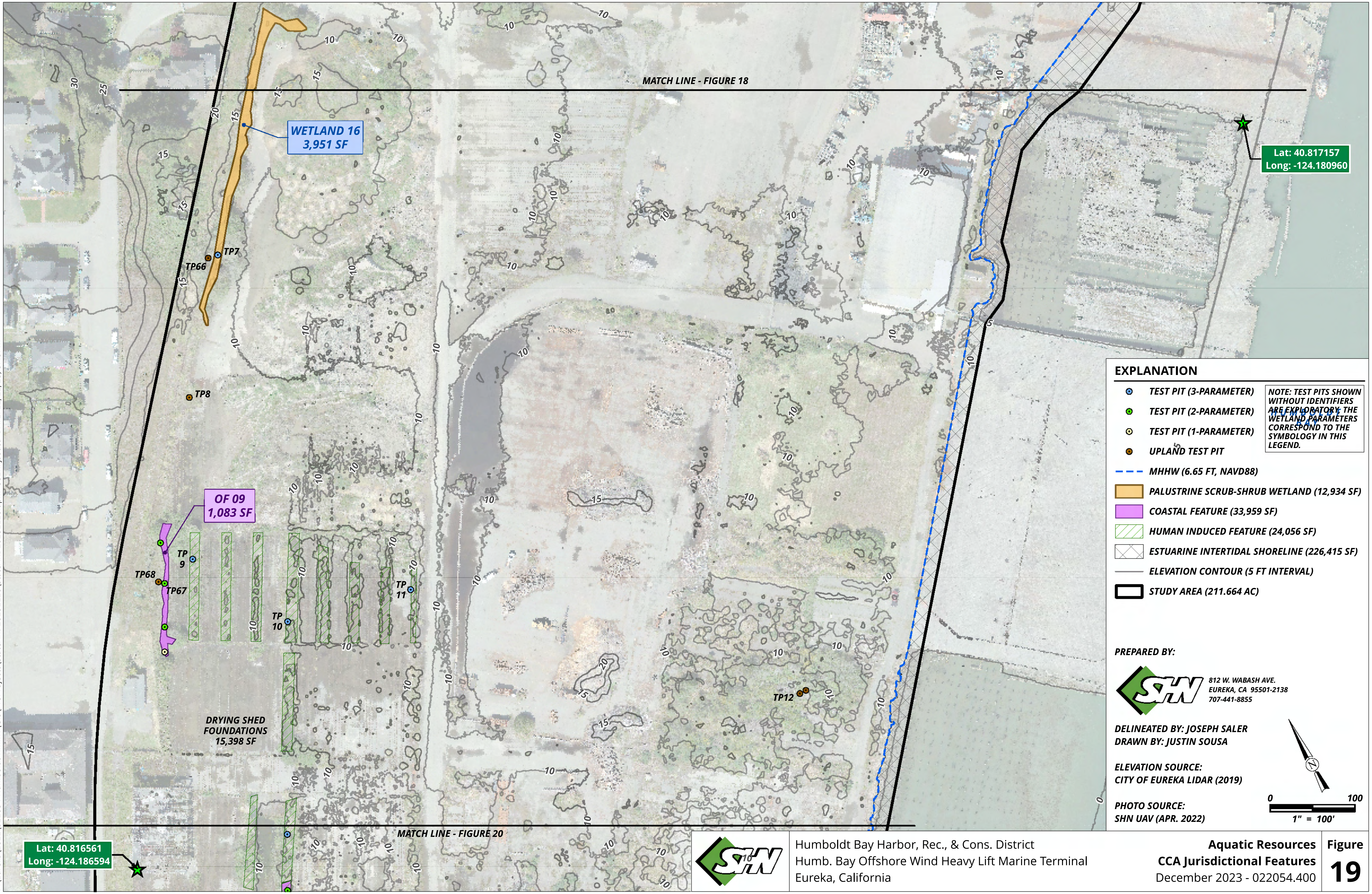
Figure 17



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

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure
18



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)
- COASTAL FEATURE (33,959 SF)
- HUMAN INDUCED FEATURE (24,056 SF)
- ESTUARINE INTERTIDAL SHORELINE (226,415 SF)
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- 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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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
CCA Jurisdictional Features
December 2023 - 022054.400

Figure 19

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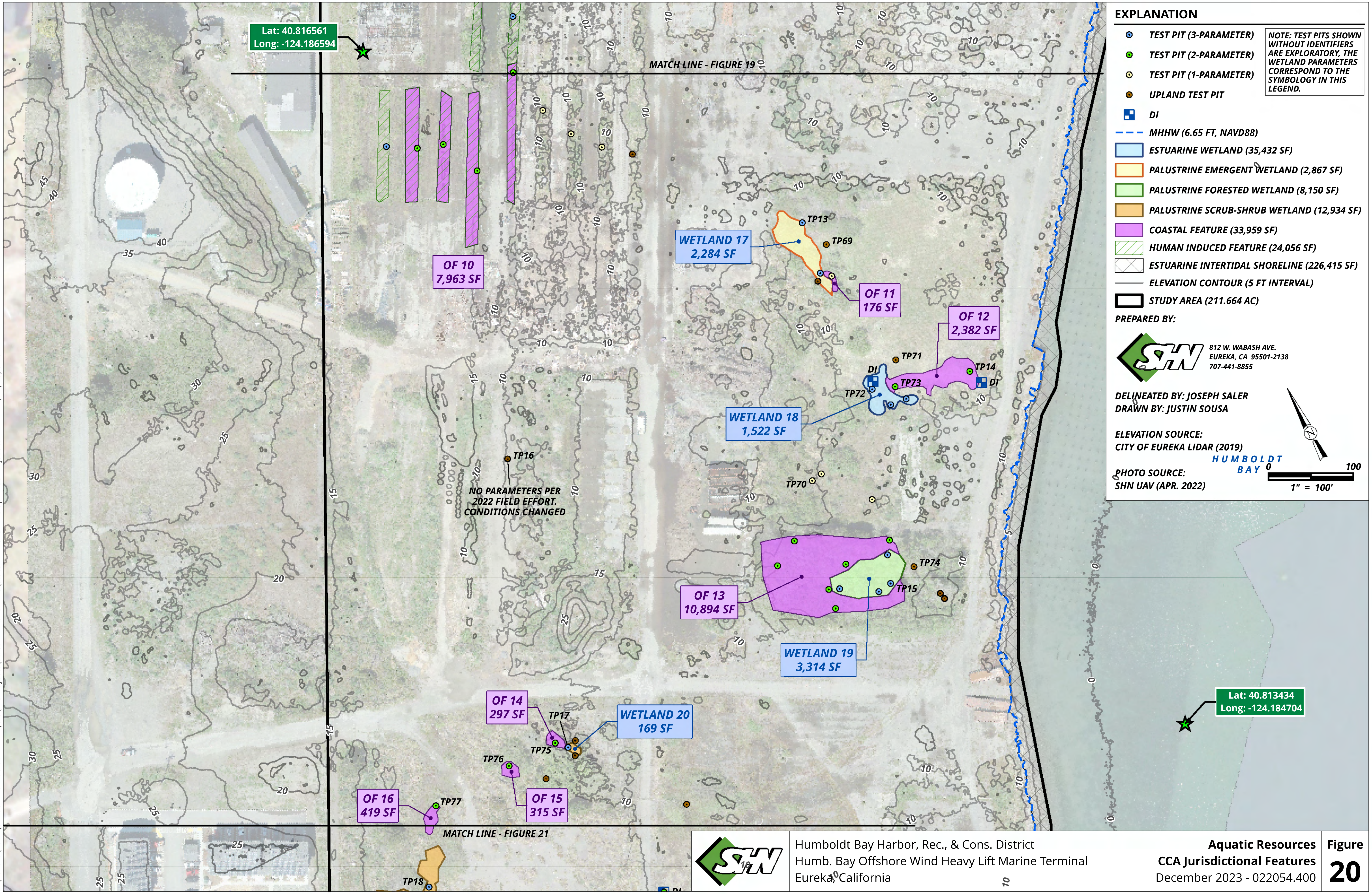

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure 20

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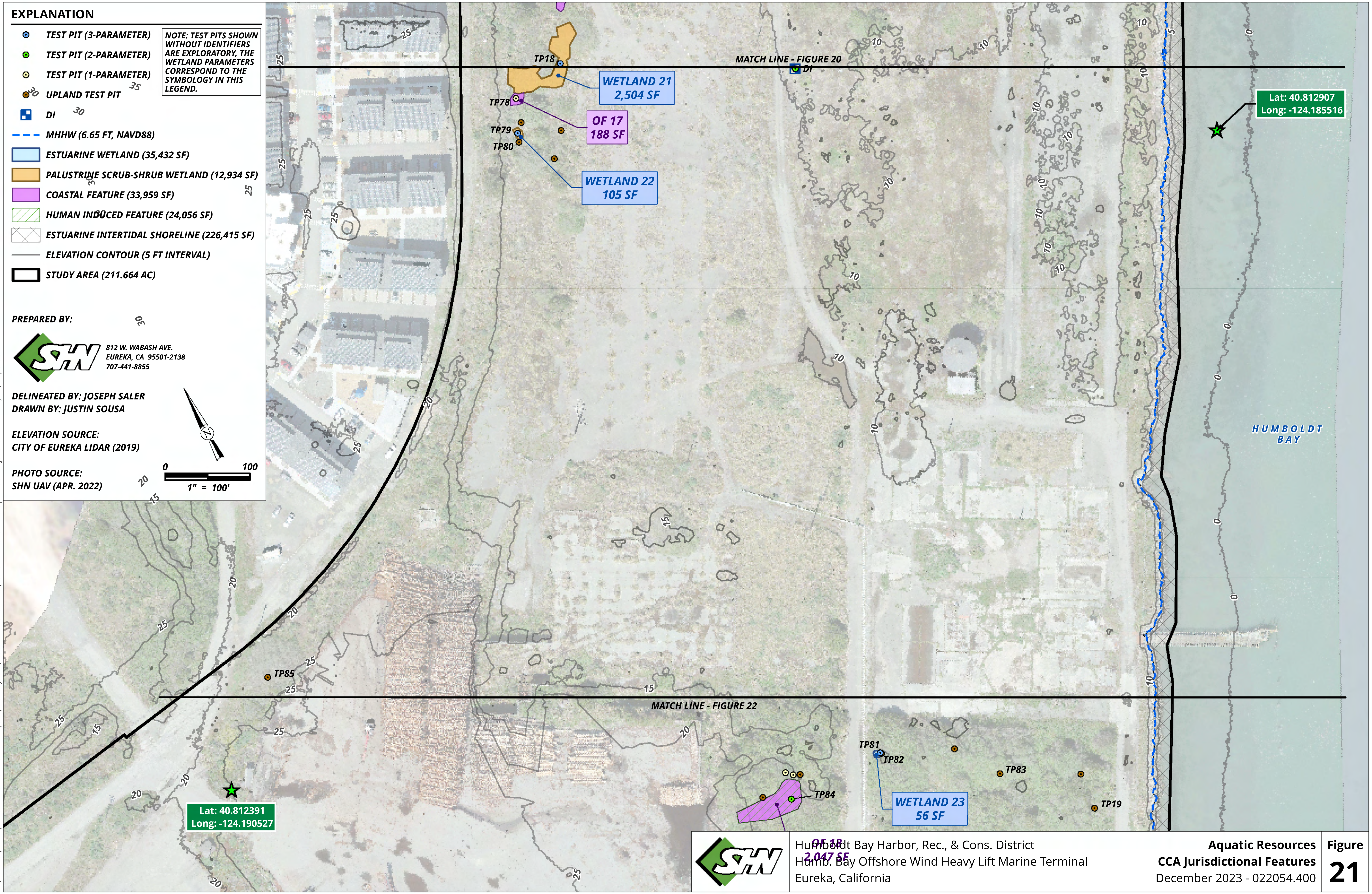

EXPLANATION

- TEST PIT (3-PARAMETER)
- TEST PIT (2-PARAMETER)
- TEST PIT (1-PARAMETER)
- UPLAND TEST PIT
- DI
- MHHW (6.65 FT, NAVD88)
- ESTUARINE WETLAND (35,432 SF)
- PALUSTRINE SCRUB-SHRUB WETLAND (12,934 SF)
- COASTAL FEATURE (33,959 SF)
- HUMAN INDUCED FEATURE (24,056 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'

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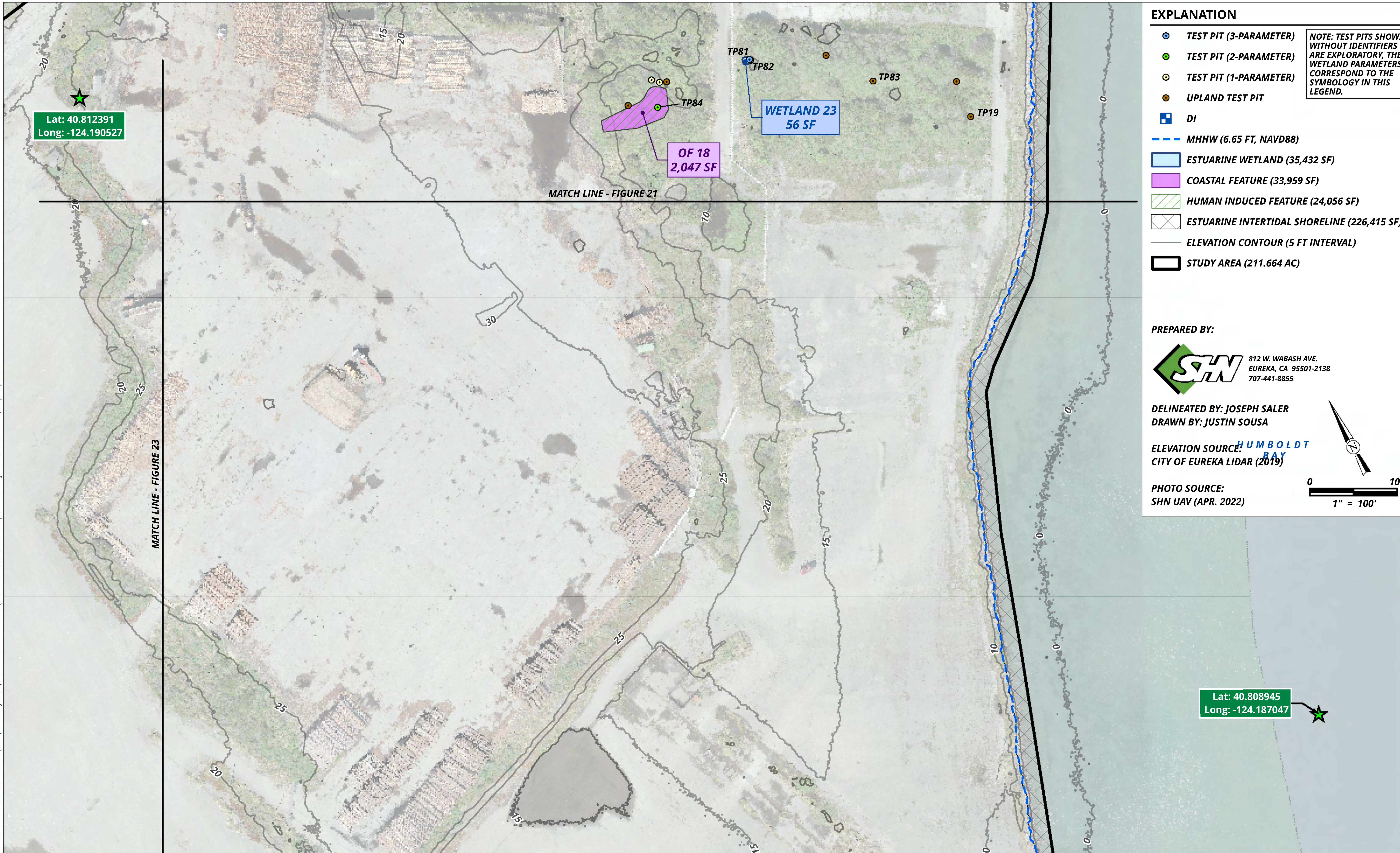
Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure
21



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

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure 22

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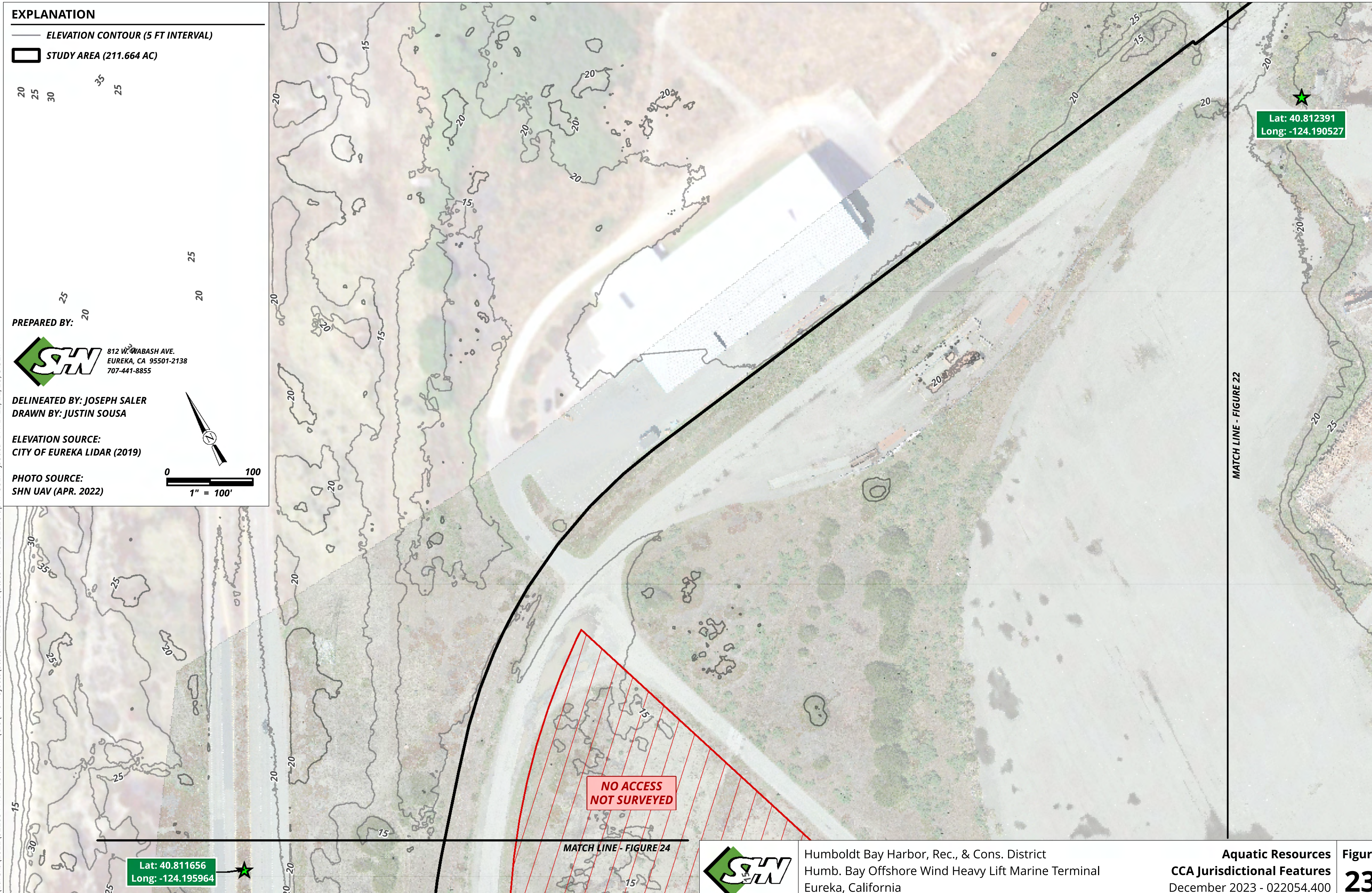

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure
23

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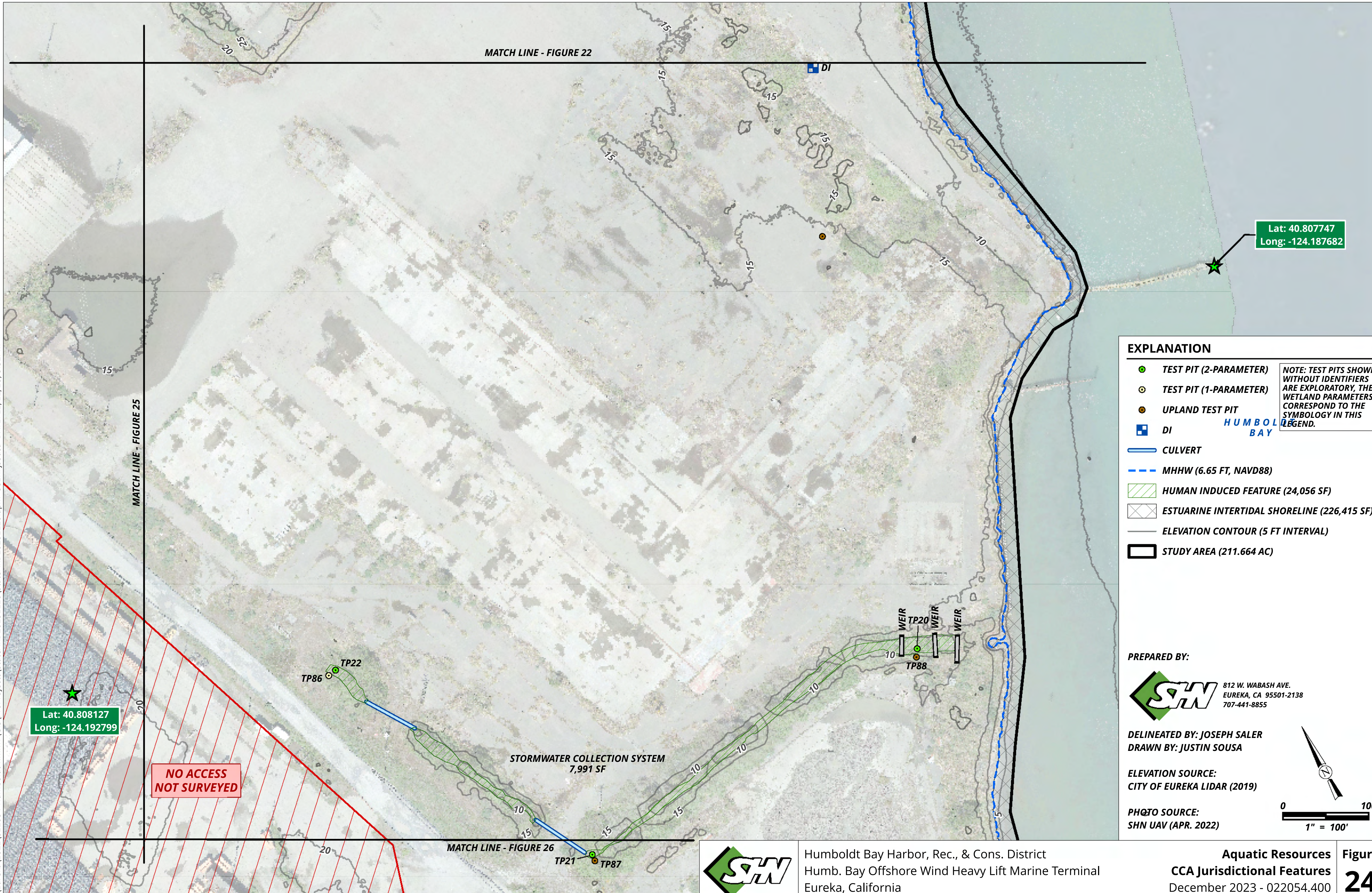

Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure
24

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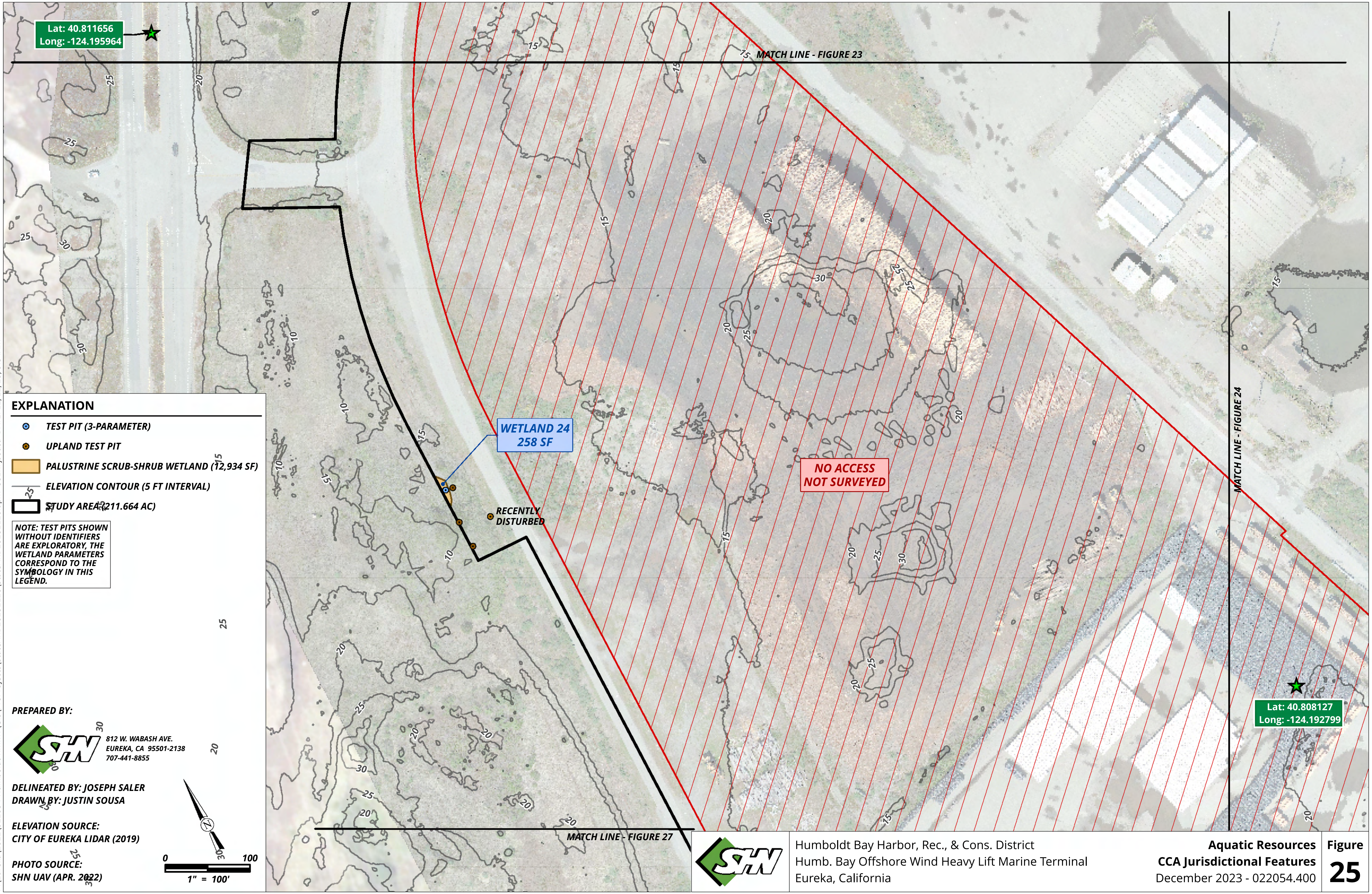

EXPLANATION

- TEST PIT (3-PARAMETER)
- UPLAND TEST PIT
- PALUSTRINE SCRUB-SHRUB WETLAND (12,934 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:

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
CCA Jurisdictional Features
December 2023 - 022054.400

Figure 25

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

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure
26

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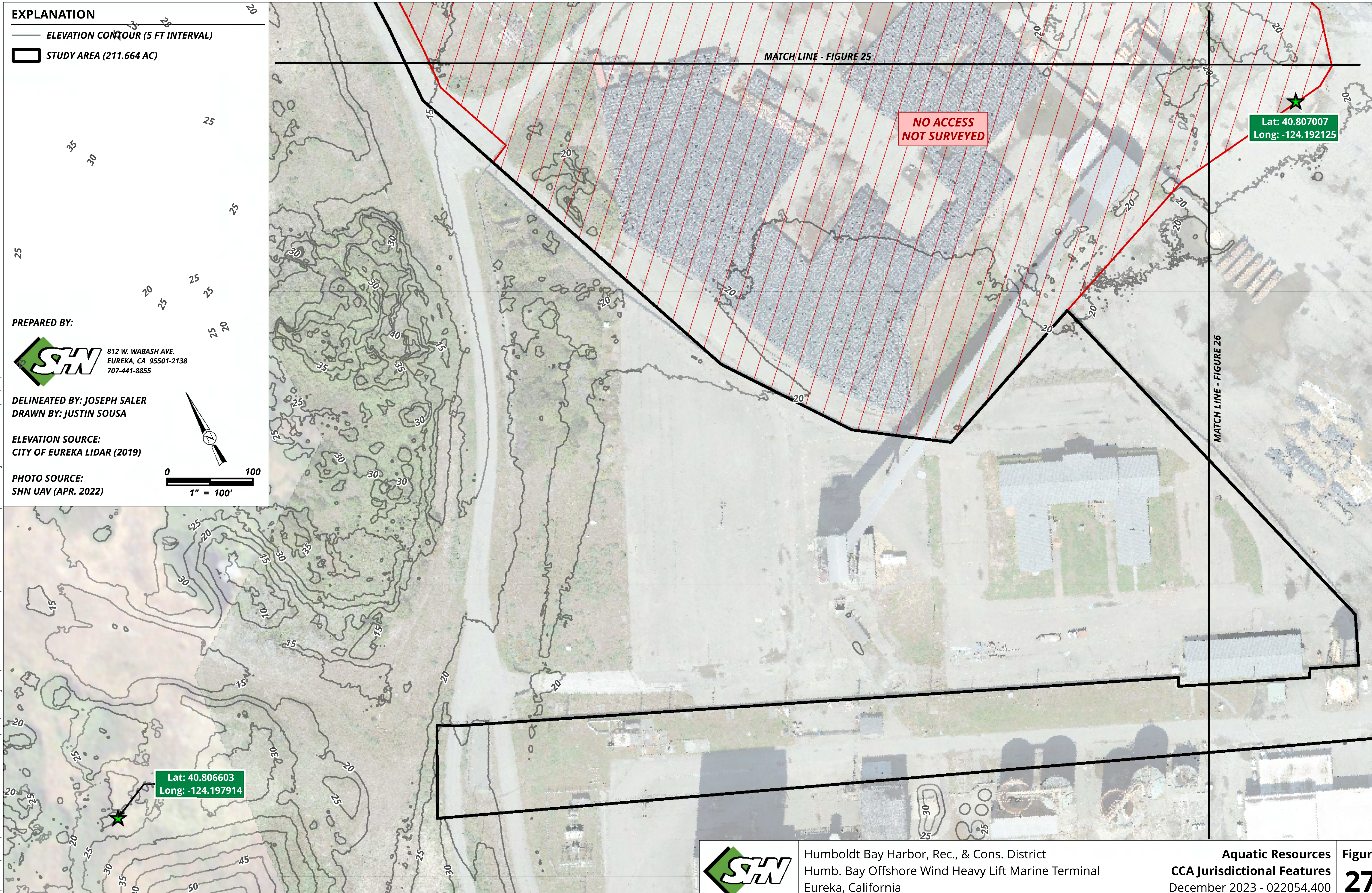


EXPLANATION

ELEVATION CONTOUR (5 FT INTERVAL)

STUDY AREA (211.664 AC)

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'

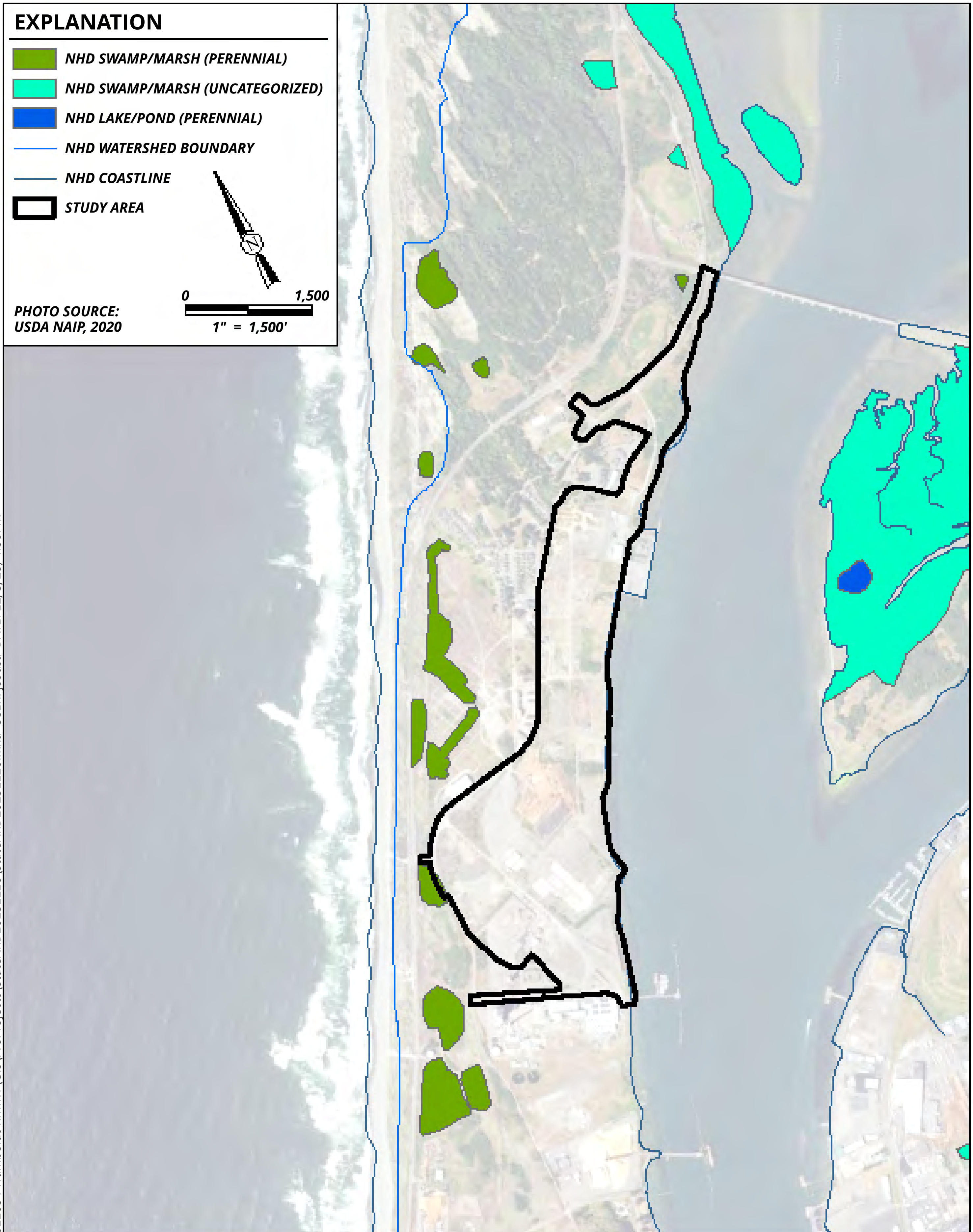
Humboldt Bay Harbor, Rec., & Cons. District
Humb. Bay Offshore Wind Heavy Lift Marine Terminal
Eureka, California

Aquatic Resources
CCA Jurisdictional Features
December 2023 - 022054.400

Figure
27

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

3



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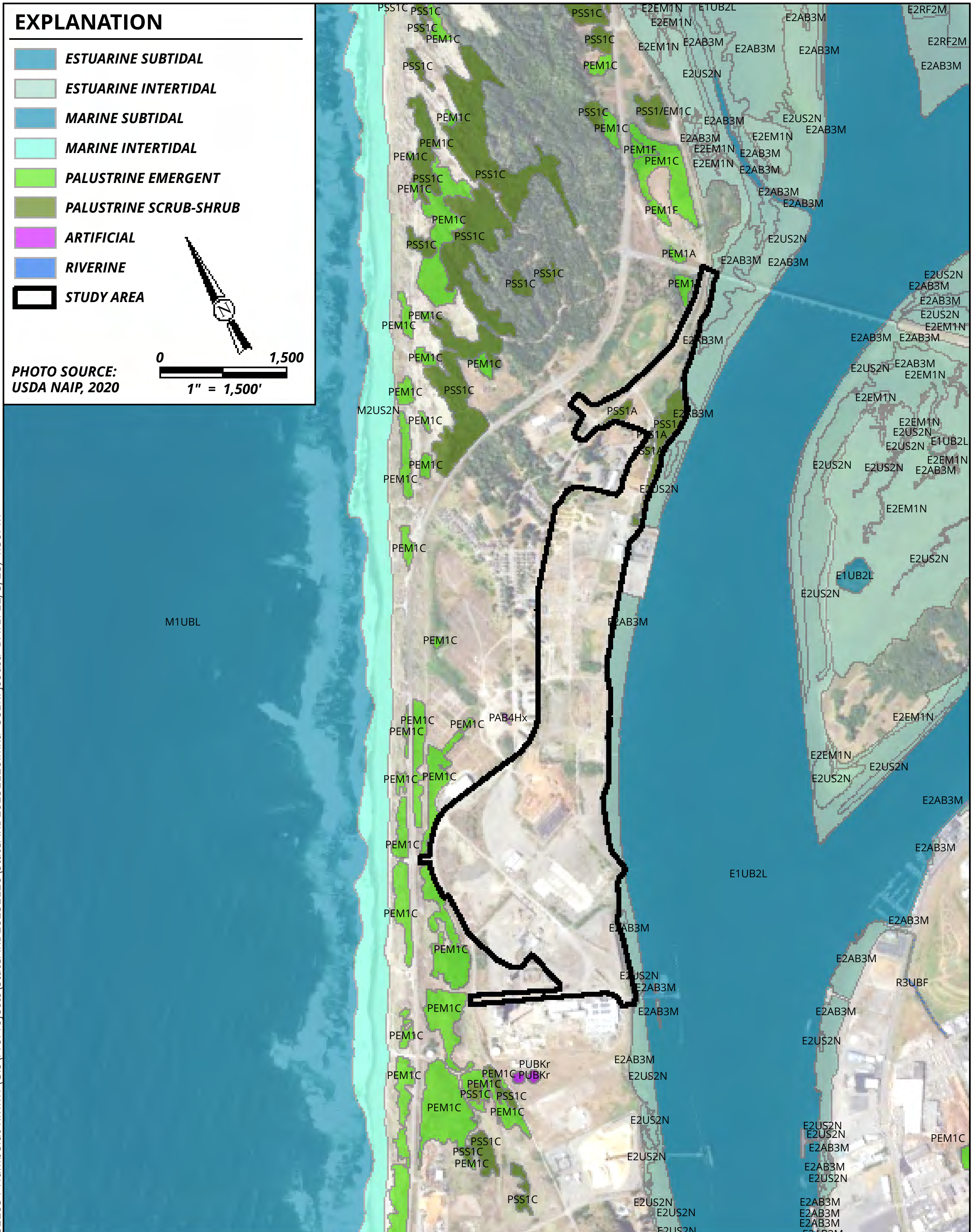
SHN

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
December 2023 - 022054.400

Figure
3-1



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

National Wetlands Inventory (NWI)
For HBOWHLMT and Surrounding Area
December 2023 - 022054.400

Figure
3-2

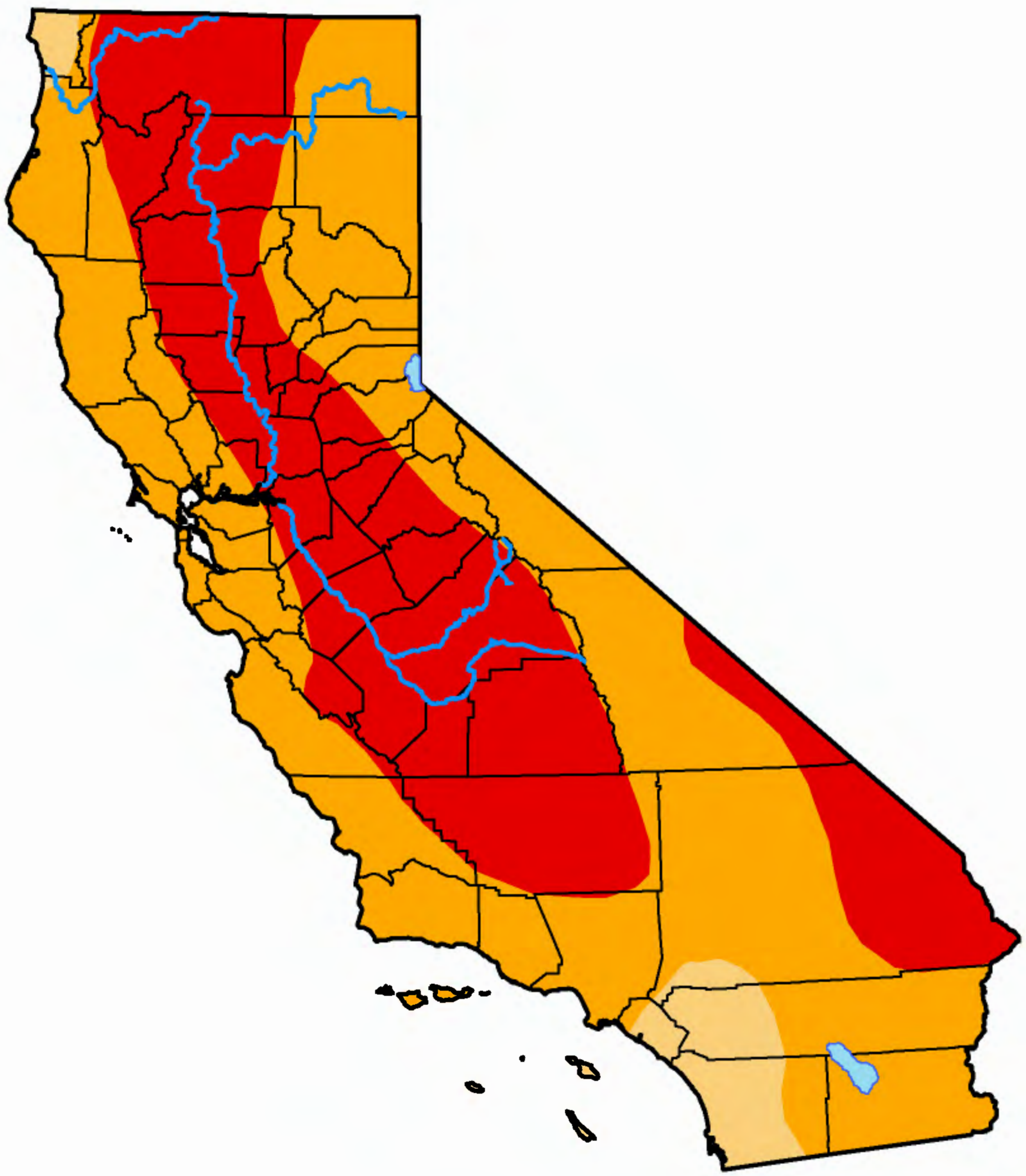
U.S. Drought Monitor

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

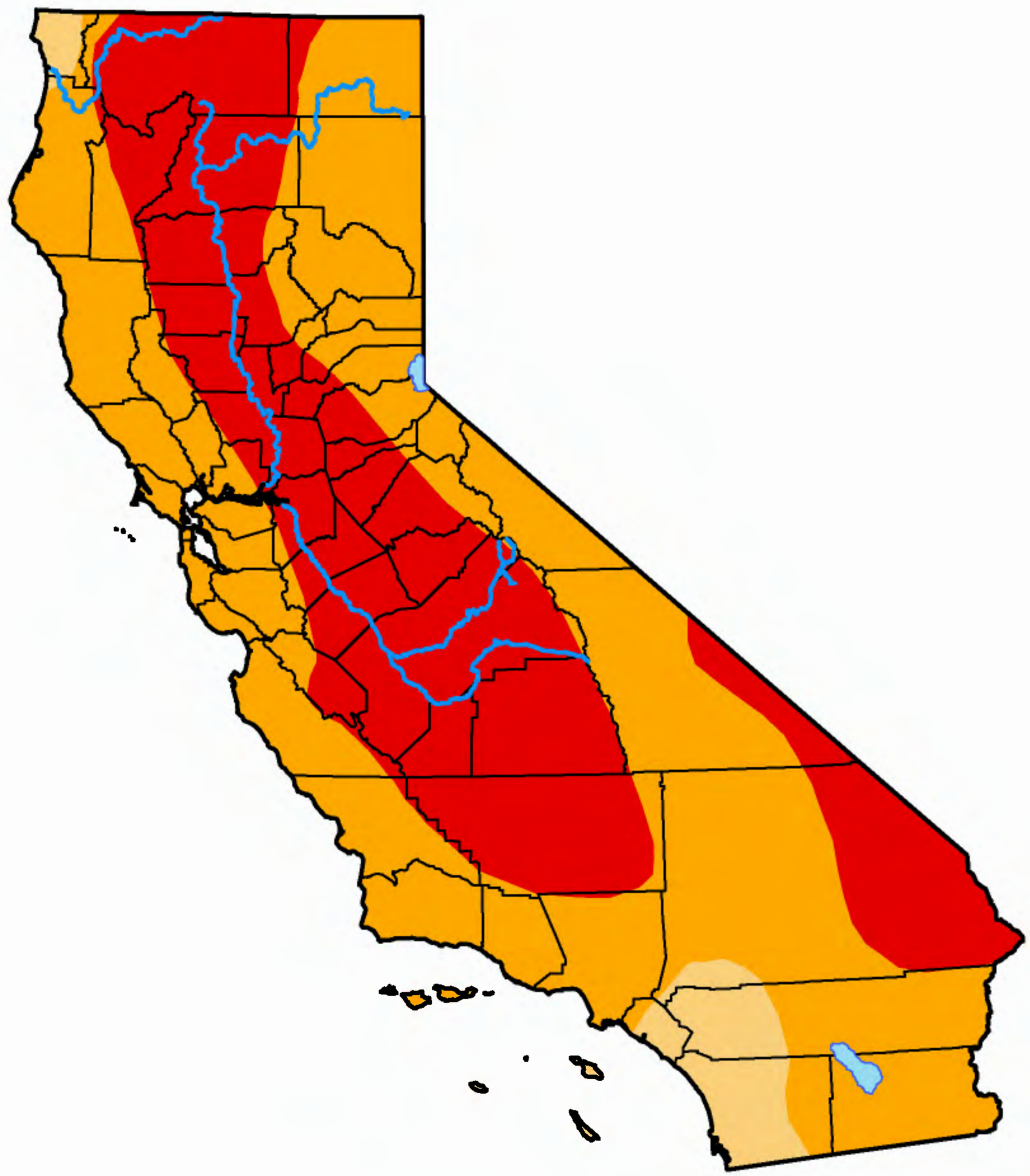
Author:

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

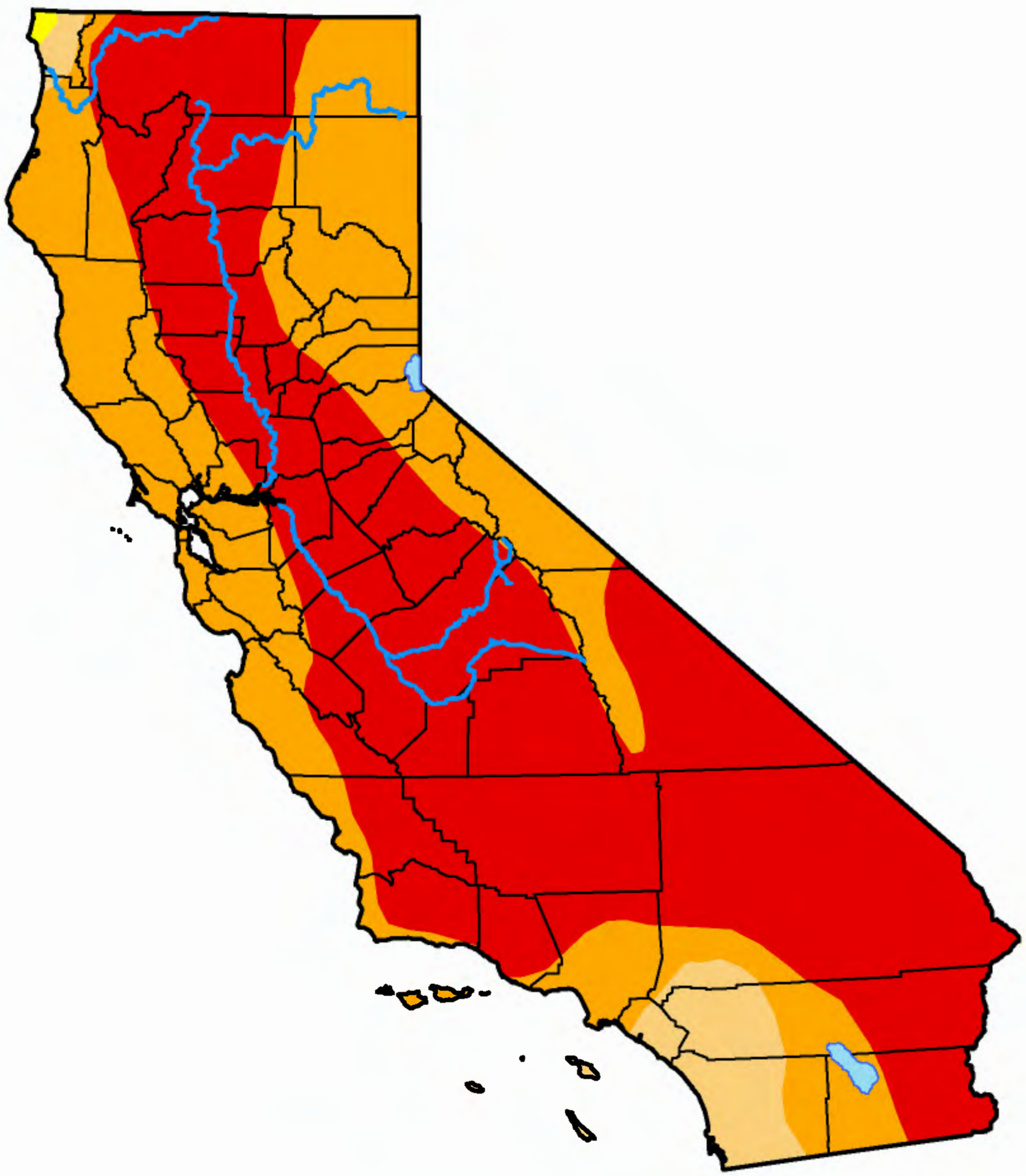
Author:

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

United States Department of Agriculture

NRCS

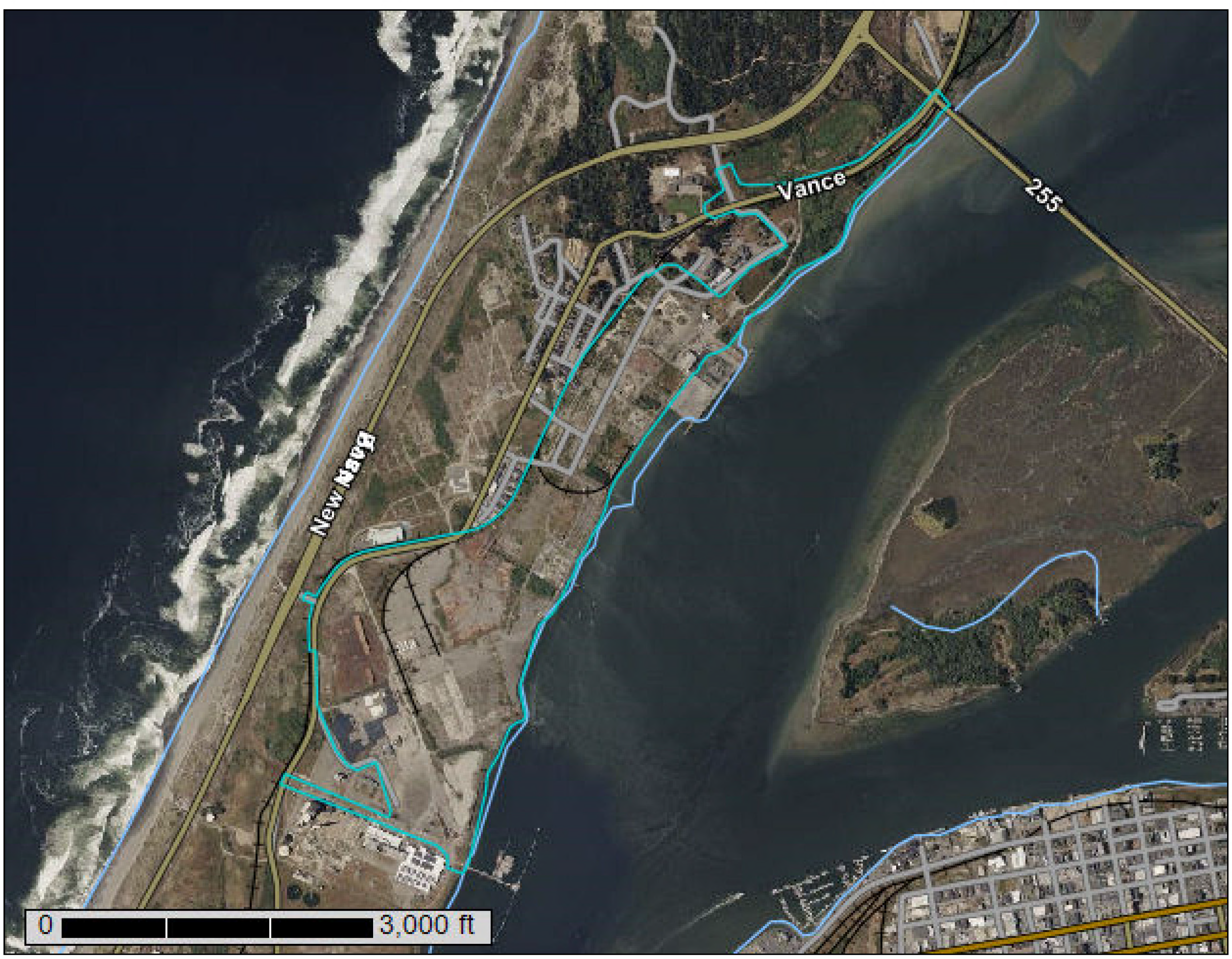
Natural Resources Conservation Service

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

Preface.. 2
How Soil Surveys Are Made..5
Soil Map.. 8
Soil Map..9
Legend..10
Map Unit Legend.. 11
Map Unit Descriptions..11
Humboldt County, Central Part, California.. 13
155—Samoa-Clambeach complex, 0 to 50 percent slopes.. 13
1008—Hydraquents mucky silt loam, strongly saline, 0-1 percent slopes, very frequently flooded.. 15
1009—Hydraquents-Wassents mucky silt loam, strongly saline, 0-3 percent slopes, very frequently flooded.. 16
1014—Urban land-Anthraltic Xerorthents association, 0 to 2 percent slopes..18
DWM—Water, marine..19
References..21

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

Map Scale: 1:15,200 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 200, 400, 800, 1200

Feet: 0, 500, 1000, 2000, 3000

N

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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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	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: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 5ft)			
1. Rubus ursinus	11	✓	FACU
2.			
3.			
4.			
5.			
	11	= Total Cover	
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.			
	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: 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: Litter

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 Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100					SL	
6-12	2.5 3/1	60	2.5Y 3/3	40	C	M	LS	
12-15	2.5 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
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? 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 %	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.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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.			
= Total Cover	12		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.			
= Total Cover	112		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 Features 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 + Wood
			2.5Y 3/2	5	D	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 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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
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: TP 4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/1	100	—	—	—	—	O	Organic Matter
4-7	10YR 2/1	100	—	—	—	—	SL	
7-17	10YR 2/1	100	—	—	—	—	VGr SL	Shell, concrete, debris present
17-24+	10YR 3/2	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: Humbold 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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
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 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
	75	= Total Cover	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)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 2/1	100	—	—	—	—	VGr(o0	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 %	Type[1]	Loc[2]	Texture	Remarks
0–4	10 YR2/2	100					mS	Close to 10YR2/1.5
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
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

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

Remarks: former industrial area, at edge of pavement 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 spp 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 Color (moist)	Redox %	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: 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: ____)			
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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5YR2.5/1	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 ____	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 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*			

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 + Thatch

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 Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y3/2	70	5YR 3/4	30	C	PL	LS	
5-8	5Y 3/1	83	7.5 YR 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: 5 ft)			
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: 5 ft)			
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: 5 ft)			
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 %	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: TP13

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 PEM1Es0g. Rapid willow growth, may transition to PSS.

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	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		* NI (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 %	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 ____
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? Yes ____ No X *Meets CCC wetland definition

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

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
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%*

Remarks: * Leaf litter

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 ___

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? Yes X No ___ Depth (inches): Surface

(includes capillary fringe)

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: TP16

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.

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	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

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 North coast region suggest OBL or FACW designation & is treated as such.

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.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
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)	%	Redox Features Color (moist)	%	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	2.5Y 3/1	2	C	M	GrLS	Brick + Debris Present
			2.5Y 3/2	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.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix hookeriana	27	✓	FACW
2.			
3.			
4.			
	27	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 ft)			
1. Rubus ursinus	40	✓	FACU
2. Rubus armeniacus	3		FAC
3.			
4.			
5.			
	43	= Total Cover 21.5 / 8.6	
Herb Stratum (Plot size: 5 ft)			
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 Features %	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: TP 19

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: 104-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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft)			
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 %	Type[1]	Loc[2]	Texture	Remarks
0-5	10 YR 2/1	100	—	—	—	—	SL	
5-24+	10 YR 3/1	100	—	—	—	—	Gr LS	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	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
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)	%	Redox Features Color (moist)	%	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. -wood retaining walls, excavated feature, high soil volume of wood chips

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.			
= Total Cover	38		
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.			
= Total Cover	56		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 undecomposed wood chips.
20-24+	N 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: O horizon likely decomposed wood chips from adjacent pulpmill facility. - undecomposed wood chips at 12inches.

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: TP 21

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
0-10	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 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 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:

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 ___	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 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. Sarcocornia carnosa	40	✓	OBL
3. Salicornia pacifica	3		OBL
4. Limonium californicum	1		OBL
5. Distichlis spicata	5		FACW
6.			
7.			
8.			
9.			
10.			
11.			
	54 = Total Cover 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

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
0-11	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
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.			
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.			
= Total Cover	56	28	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 44

Remarks: Bare sand slope

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

Consulting Engineers & 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 %	Type[1]	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: TP 25

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

Consulting Engineers & Geologists, Inc

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:

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: 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 scrub-shrub 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

SLR Consulting Engineers & Geologists, Inc

SOIL

Sampling Point: TP26

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
0-8+	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.

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: 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 x crocosmiiflora	5		FAC
6. Avena barbata	1		NL
7.			
8.			
9.			
10.			
11.			
	83	= Total Cover	41.5/16.6
Woody Vine Stratum (Plot size: 5 ft)			
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

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 %	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 @23inches 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	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 - willow depression between Vance Rd & Humboldt Bay

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
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 7.5/3	
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

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 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
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 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 Features %	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.

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: TP30 veg

Investigator(s): Joseph Saler, Cindy Wilcox Section, Township, Range: ______

Landform (hillslope, terrace, etc.): bay side 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.

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	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 ____
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 occurs in densely vegetated swale. TP excavated near center of Palustrine forested wetland (PFO1E s O n). 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

Consulting Engine[illegible]
& Geologists, Inc

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 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 8/1	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 (PFO1Es On)

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 %	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)
- ✓ 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.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
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.			
	85 = Total Cover		
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: TP34

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	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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
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 lesueurii	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

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.

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)	%	Redox Features Color (moist)	%	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 horizon
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')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. Carex obnupta	1		OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	1	= Total Cover	

Woody Vine Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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)	Matrix %	Redox Color (moist)	Redox %	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 reaction @ 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): 1 in (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.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
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 Features %	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.

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 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 OI.
Best described as PSS1Cx0g

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 microcarpus	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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y 2.5/1	100					Peat	
2-26+	2.5Y 4/2	60	7.5YR4/6	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.

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: 4/5/22

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-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 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.			
= Total Cover	3		
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.			
= Total Cover	93	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)	%	Redox Features Color (moist)	%	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:

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 upland, well drained soils, fill.

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 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 ______
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 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: TP 4

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
0-5	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.

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: 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	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 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.			
	70	= Total Cover	
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.			
	84	= Total Cover 42/16.8	
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 Features %	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.

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: 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 ___
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. 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.

Stratum / Species	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
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.

SOIL

Sampling Point: TP44

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
0-14	2.5Y2.5/1	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 ___		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 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

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.			
= Total Cover	80		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
= Total Cover	41		20.5 / 8.2
Woody Vine Stratum (Plot size: 5ft)			
1. Lonicera hispidula	20	✓	FACU
2.			
= Total Cover	20		

% 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

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:

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: 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 ____		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 No above ground connectivity to Humboldt Bay. Best described as Culvert outflow depression. Cobbles. SWPP feature? PEM1A+BxOn

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	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 (52.5 / 21)	105		
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: 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

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	—	—	—	—	GoLS	

[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:

	Yes	No	Depth (inches)
Surface Water Present?		X	N/A
Water Table Present?	X		7 in
Saturation Present? (includes capillary fringe)	X		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: -124.1796666 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)	%	Redox Features Color (moist)	%	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 ~~___~~
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? Yes ___ No X *Meets CCC wetland definition

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')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
= Total Cover			

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
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.			
= Total Cover	86	43 / 17.2	

Woody Vine Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
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
- ___ 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:
*Bare soils, likely reflecting compacted gravel.

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.

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: 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. Lolium bienne	10		UPL
5. Anthoxanthum odoratum	2		FACU
6. Leontodon saxatilis	1		FACU
7. Hypochaeris glabra	2		UPL
8. Bromus hordeaceus	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*

Remarks: * Moss and gravel.

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

SOIL

Sampling Point: TP50

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	10YR 3/1	100					SL	
5-16	2.5Y 5/1	100					grlcobbly LS	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.

	Yes	No
Hydrophytic Vegetation Present?	X	
Hydric Soil Present?		X
Wetland Hydrology Present?	X	

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.

Sampling Point: TPS1

SOIL

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
0-10	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

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 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	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 only. See TP 51 for representative soils and hydrology.

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	4		FAC
2.			
3.			
4.			
5.			
= Total Cover	4		
Herb Stratum (Plot size: 5')			
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.			
= Total Cover	118		23.6 / 59
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: 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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	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

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: 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 ____ 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
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 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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
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 17.5 / 7	35		
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 51 / 20.4	102		
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 1 p feature. See TP 55 (veg) for upland veg conditions.

SOIL

Sampling Point: TP5

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
0-5	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.

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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: TP55 (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: 40.819469 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.			
= Total Cover	127		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 %	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.

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. 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 Enginee & 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

[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, lot described as PEM1A+B50g

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.			
= Total Cover	101	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/muck. * Eleocharis macrostachya most likely OBL even though it is NL!

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): 0.5in

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.

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 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.

	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. 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

SNR 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
0-1	10YR3/2	100					Peat	
1-9	10YR3/2	100					GrLS	
9-14+	10Y 4/1	100					VCoGrLS	

[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

STN 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: 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.			
	103	= Total Cover	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 Features %	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.

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/wax myrtle community. Best described as PSS1+4B50g. No aboveground connectivity

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
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.

Consulting Engineers & Geologists, Inc

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 2/1	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')	Absolute % Cover	Dominant Species?	Indicator Status
1. Rubus ursinus	25	✓	FACU
2. Rubus armeniacus	30	✓	FAC
3.			
4.			
5.			
	55	= Total Cover 27.5 / 11	

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
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')	Absolute % Cover	Dominant Species?	Indicator Status
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.

SOIL

Sampling Point: TP61

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	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

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	—	—	—	—	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.

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: 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.

	Yes	No
Hydrophytic Vegetation Present?		X
Hydric Soil Present?		X
Wetland Hydrology Present?		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 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:

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	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
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
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 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.

SOIL

Sampling Point: TP66

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
0-3	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 ______
Hydric Soil Present?	Yes ______	No X
Wetland Hydrology Present?	Yes X	No ______

Is the Sampled Area within a Wetland? Yes ______ No X* *Meets CCC wetland definition

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

SOIL

Sampling Point: TP6-7

SMA 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 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

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					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: Urban land-Anthraltic Xerorthents 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.			
= Total Cover	22		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.			
= Total Cover	100		
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 often mowed, former industrial field.

SOIL

Sampling Point: TP69

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
0-2	10YR 2/1	100					SL	
2-9	2.5Y 3/2	100					LS	
9-20	2.5Y 4/2	100					GrGr 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*

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: *Litter + Duff present.

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.

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 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	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, mowed, fill, former industrial

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. 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.

SOIL

Sampling Point: TP 71

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	2.5Y3/1	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+	2.5Y 4/1	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.

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: 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

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 %	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
16-18+	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:

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): 10 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: 5/17/22

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.			
= Total Cover	116	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 73

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" and below to 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.

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 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

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
0-2	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

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: 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 ___	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present? Yes ___ No X		* Meets CCC 1-p definition
Wetland Hydrology Present? Yes X No ___		

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.

SJN Consulting Engineers & Geologists, Inc

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 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.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
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.

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 %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR3/1	100	/	/	/	/	Peat	
8-24+	10YR4/1	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.

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: 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: -124.187729 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

SOIL

Sampling Point: TP 77

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
0-0.5	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.

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: 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: TP 78

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	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.

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: 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.			
= Total Cover	100	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 %	Redox Features Type[1]	Redox Features 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
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 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 dominate.

SOIL

Sampling Point: TP 80

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
0-5	10YR3/1	100	—	—	—	—	P	
5-24+	2.5Y4/1	90	2.5Y4/2	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	2.5Y 2.5/1	100	—	—	—	—	MuP	
1-16	2.5Y 2.5/1	30	mixed matrices				LS	Mixed eroded fill
	2.5Y 4/1	35					LS	Mixed eroded fill
	7.5YR 2.5/1	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.

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: 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 Assc. 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 %	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		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 center of willow patch. Conditions representative of willow patch.

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	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

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
0-7	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) ND
- ___ Black Histic (A3) ND
- ___ 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.

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: 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:

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 herb stratum on account of dense shade and deep litter and duff.

SOIL

Sampling Point: TP84

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 surfacewater 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	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. 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.

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 %	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					Gr SL	
	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 muntum	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)	Matrix %	Redox Features Color (moist)	Redox %	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
upland pit to TP21 (RMTZ) TP excavated on slope of anthropogenic drainageway for stormwater collection

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 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.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
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.

Sampling Point: TP 88

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 %	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

Photograph 1: An example of a Palustrine Forested Wetland- Wetland 05, located near TP31. Photograph taken on May 5, 2022.

Photograph 2: An example of a Palustrine Forested Wetland- Wetland 06, located near TP37. Photograph taken on May 5, 2022.

Photograph 3: An example of a Palustrine Forested Wetland- Wetland 09, located near TP43. Photograph taken on May 12, 2022.

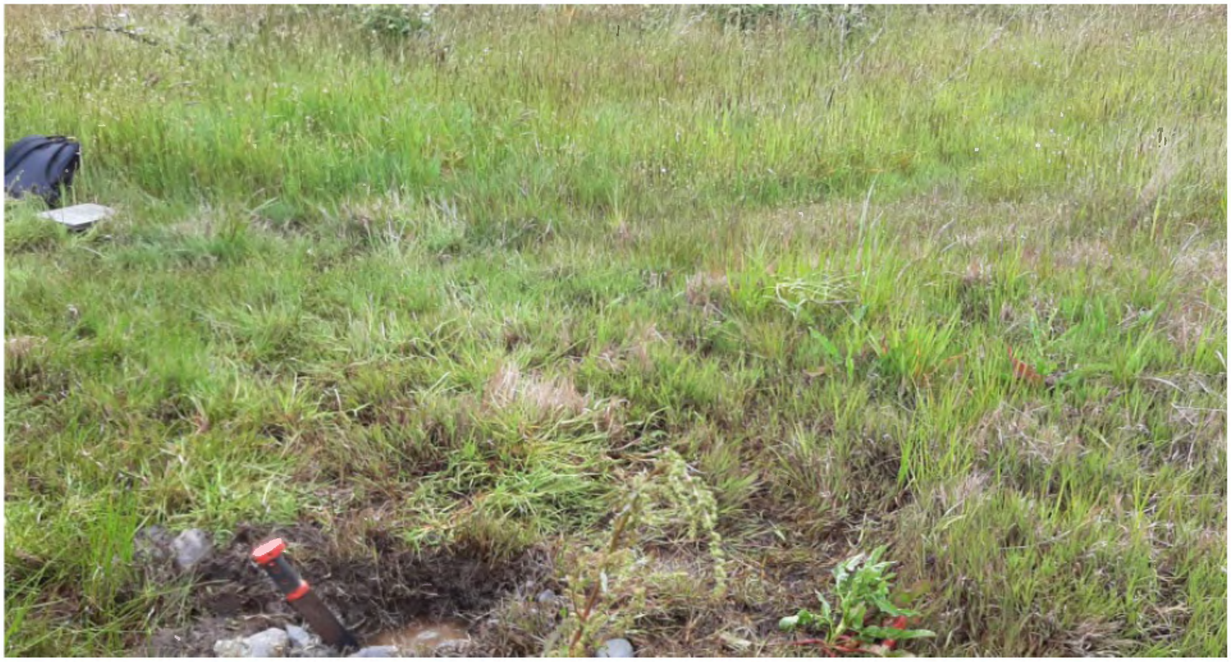
Photograph 4: An example of a Palustrine Scrub-Shrub Wetland- Wetland 07, located near TP39. Photograph taken May 5, 2022.

Photograph 5: An example of a Palustrine Scrub-Shrub Wetland- Wetland 08, located near TP41. Photograph taken May 5, 2022.

Photograph 6: An example of a Palustrine Scrub-Shrub Wetland- Wetland 11, located near TP45. Photograph taken May 12, 2022.

Photograph 7: An example of a Palustrine Scrub-Shrub Wetland- Wetland 14, located near TP53. Photograph taken May 12, 2022.

Photograph 8: An example of a Palustrine Scrub-Shrub Wetland- Wetland 21, located near TP78. Photograph taken May 19, 2022.



Photograph 9: An example of a Palustrine Emergent Wetland- Wetland 12, located near TP57. Photograph taken May 13, 2022.

Photograph 10: An example of a Palustrine Emergent Wetland- Wetland 13, located near TP47. Photograph taken May 12, 2022.

Photograph 11: An example of an Estuarine Wetland- Wetland 03, located near TP23. Photograph taken April 29, 2022.

Photograph 12: An example of an Estuarine Wetland- Wetland 03, located near TP23. Photograph taken July 6, 2022.

Photograph 13: An example of an Estuarine Wetland- Wetland 01, with Pt. Reyes Bird's Beak in the foreground. Photograph taken July 7, 2022.

Photograph 14: An example of an Estuarine Wetland- Wetland 01, located above the MHHW in the northern portion of the study area. Photograph taken July 6, 2022.

Photograph 15: An example of an Estuarine Wetland- Wetland 23, located near TP81. Photograph taken May 19, 2022.

Photograph 16: Artificial aquatic feature at TP64 and TP65- an abandoned concrete vault and foundation that has developed into a three-parameter wetland.

Photograph 17: Artificial aquatic feature- abandoned drying shed foundations beginning to incorporate three parameters. Photograph taken May 28, 2020.

Photograph 18: Artificial aquatic feature- abandoned drying shed foundations beginning to incorporate three parameters. Photograph taken May 28, 2020.

Photograph 19: Artificial aquatic feature- stormwater collection system at TP86. Culvert drains impervious surfaces formerly used for chip storage. Photograph taken on June 28, 2022.

Photograph 20: Artificial aquatic feature- stormwater collection system near TP87. One of several stormwater culverts that drain into this feature. Photograph taken on June 29, 2022.

Photograph 21: Artificial aquatic feature-stormwater collection system near TP88. Photograph taken on August 2, 2022.

Photograph 22: Artificial aquatic feature-stormwater collection system near TP88, near one of weirs before the entrance to Humboldt Bay. Photograph taken on August 2, 2022.

Photograph 23: An example of Estuarine Intertidal Shoreline, looking west toward Wetland 15. Note narrow band of estuarine wetland between the MHHW and upland conditions. Photograph taken April 5, 2022.

Photograph 24: An example of Estuarine Intertidal Shoreline, east of Wetland 03, looking across Humboldt Bay towards Eureka. Photograph taken July 7, 2022.

Photograph 25: An example of Estuarine 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. Photograph taken July 8, 2022.

Photograph 26: An example of Estuarine Intertidal Shoreline, with armored shoreline east of TP71, looking east towards Eureka. Photograph taken August 2, 2022.

Photograph 27: Typical vegetation type in OF1, OF2, OF3, and OF4, adjacent to Palustrine Forested or Scrub-shrub Wetlands. Taken near TP34 on May 4, 2022.

Photograph 28: Typical vegetation type in OF1, OF2, OF3, and OF4, adjacent to Palustrine Forested or Scrub-shrub Wetlands. Taken near TP61 on May 13, 2022.

Photograph 29: Typical vegetation type in OF5, OF6, OF7, and OF8, adjacent to Palustrine Emergent Wetlands. Taken near TP49 on May 12, 2022.

Photograph 30: Typical vegetation type in OF5, OF6, OF7, and OF8, adjacent to Palustrine Emergent/Palustrine Scrub-shrub Wetlands. Taken near TP53 on May 12, 2022.

Photograph 31: Typical vegetation type in OF5, OF6, OF7, and OF8, adjacent to Palustrine Emergent Wetlands. Taken near TP51 on May 12, 2022.

Photograph 32: Wetland OF9 in swale between the artificial aquatic features (drying racks) and an upland berm. Shovel is at upland TP68, taken on May 14, 2022.

Photograph 33: Typical vegetation for OF11, a one-parameter feature (hydrophytic vegetation) adjacent to a Palustrine Scrub-shrub Wetland, taken near TP69 on May 17, 2022.

Photograph 34: Typical vegetation for OF12, a two-parameter feature (hydrophytic vegetation and hydrology), taken near TP71 on May 17, 2022.

Photograph 35: Typical vegetation for OF14, a two-parameter feature (hydrophytic vegetation and hydrology), taken at TP75 on May 18, 2022.


Photograph 36: Typical vegetation for OF15, a two-parameter feature taken near TP76 on May 18, 2022.


Photograph 37: Typical vegetation for OF16, two-parameter feature (hydrophytic vegetation and hydrology), taken near TP77 on May 18, 2022.

Photograph 38: Typical vegetation for OF17, a one-parameter hydric soil feature, taken near TP78 on May 19, 2022.

Photograph 39: Typical vegetation for OF18, a two-parameter feature (hydrophytic vegetation and hydrology), taken near TP84 on May 19, 2022. Note black fly ash on soil surface.

6

Plant List

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?
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

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?
Rosa rubiginosa	sweetbriar	Rosaceae	N
Rosa sp.			Y
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

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?
Agrostis stolonifera	creeping bentgrass	Poaceae	I
Aira caryophyllea	silver hairgrass	Poaceae	N
Alopecurus geniculatus	marsh foxtail	Poaceae	Y
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-flowered cordgrass	Poaceae	I
Herbs			
Abronia latifolia	yellow sand verbena	Nyctaginaceae	Y
Achillea millefolium	yarrow	Asteraceae	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?
Acmispon americanus var. *americanus*	American bird's foot trefoil	Fabaceae	Y
Acmispon parviflorus	hill lotus	Fabaceae	Y
Agapanthus praecox	African lily	Liliaceae	N
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
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

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?
Claytonia rubra	redstem spring beauty	Montiaceae	Y
Conium maculatum	poison hemlock	Apiaceae	I
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

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?
Leucanthemum vulgare	oxeye daisy	Asteraceae	I
Limonium californicum	marsh rosemary	Plumbaginaceae	Y
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	buck's horn 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-leaved 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

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 acetosella	sheep sorrel	Polygonaceae	I
Rumex conglomeratus	clustered dock	Polygonaceae	N
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
Zeltnera muehlenbergii	Muhlenberg's centaury	Gentianaceae	Y
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 2: Native species 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	Coastal Feature	OF 07	40.818893°	-124.180425°
TP7	Wetland	Wetland 16	40.818233°	-124.185136°
TP8	Upland	Upland	40.817859°	-124.185512°
TP9	Artificial Aquatic Feature	Drying Shed Human Induced Feature	40.817383°	-124.185802°
TP10	Artificial Aquatic Feature	Drying Shed Human Induced Feature	40.817066°	-124.185555°
TP11	Artificial Aquatic Feature	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	Coastal Feature	OF 12	40.814764°	-124.184870°
TP15	Wetland	Wetland 19	40.814260°	-124.185571°
TP16	Wetland	Upland (conditions changed)	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	Artificial Aquatic Feature	Stormwater Feature	40.807064°	-124.189517°

Wetland Datapoint Index

Datapoint ID	Type	Associated Feature	Latitude (Datum-WGS 84)	Longitude (Datum-WGS 84)
TP21	Artificial Aquatic Feature	Stormwater Feature	40.806915°	-124.191134°
TP22	Artificial Aquatic Feature	Stormwater Feature	40.807821°	-124.191760°
TP23	Wetland	Wetland 03	40.823699°	-124.174337°
TP24	Upland	Wetland 03	40.823726°	-124.174348°
TP25	Upland	Upland	40.823340°	-124.175161°
TP26	Wetland	Wetland 02	40.824108°	-124.174208°
TP27	Upland	Wetland 02	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 05	40.820944°	-124.177503°
TP32	Wetland	Wetland 05	40.820907°	-124.177639°
TP33	Upland	Wetland 05	40.820793°	-124.177880°
TP34	Upland	OF 01	40.821082°	-124.177511°
TP35	Upland	Upland	40.821749°	-124.177533°
TP36	Upland	Upland	40.821711°	-124.177883°
TP37	Wetland	Wetland 06	40.821384°	-124.179684°
TP38	Upland	Wetland 06	40.821421°	-124.179723°
TP39	Wetland	Wetland 07	40.820668°	-124.178999°
TP40	Upland	Wetland 07	40.820650°	-124.179053°
TP41	Wetland	Wetland 08	40.820351°	-124.178848°
TP42	Upland	Wetland 08	40.820367°	-124.178882°
TP43	Wetland	Wetland 09	40.819992°	-124.178802°
TP44	Upland	Wetland 09	40.819952°	-124.178839°
TP45	Wetland	Wetland 11	40.819634°	-124.179067°
TP46	Upland	Wetland 11	40.819624°	-124.179131°

Wetland Datapoint Index

Datapoint ID	Type	Associated Feature	Latitude (Datum-WGS 84)	Longitude (Datum-WGS 84)
TP47	Wetland	Wetland 13	40.819178°	-124.179663°
TP48	Upland	Wetland 13	40.819159°	-124.179666°
TP49	Coastal Feature	OF 07	40.818947°	-124.180274°
TP50	Upland	OF 07	40.818988°	-124.180302°
TP51	Coastal Feature	OF 08	40.819118°	-124.180744°
TP52	Upland	OF 08	40.819156°	-124.180682°
TP53	Wetland	Wetland 14	40.819489°	-124.180644°
TP54	Coastal Feature	OF 06	40.819499°	-124.180599°
TP55	Upland	Wetland 14/OF 06	40.819469°	-124.180532°
TP56	Upland	Upland	40.819379°	-124.180675°
TP57	Wetland	Wetland 12	40.819395°	-124.179674°
TP58	Coastal Feature	OF 05	40.819346°	-124.179781°
TP59	Upland	Wetland 12/OF 05	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	Artificial Aquatic Feature	Concrete Vault Human Induced Feature	40.819481°	-124.183652°
TP65	Upland	Concrete Vault Human Induced Feature	40.819480°	-124.183669°
TP66	Upland	Wetland 16	40.818237°	-124.185179°
TP67	Coastal Feature	OF 09	40.817353°	-124.185955°
TP68	Upland	OF 09	40.817366°	-124.185976°
TP69	Upland	Wetland 17	40.815338°	-124.185182°

Wetland Datapoint Index

Datapoint ID	Type	Associated Feature	Latitude (Datum-WGS 84)	Longitude (Datum-WGS 84)
TP70	Upland	Upland	40.814670°	-124.185678°
TP71	Upland	OF 12	40.814903°	-124.185132°
TP72	Wetland	Wetland 18	40.814851°	-124.185277°
TP73	Coastal Feature	OF 12	40.814826°	-124.185185°
TP74	Upland	Wetland 19/ OF 13	40.814275°	-124.185450°
TP75	Coastal Feature	OF 14	40.814273°	-124.187155°
TP76	Coastal Feature	OF 15	40.814272°	-124.187374°
TP77	Coastal Feature	OF 16	40.814261°	-124.187729°
TP78	Coastal Feature	OF 17	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	Coastal Feature	OF 18	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°