WETLAND DELINEATION REPORT FOR PORTIONS OF THE RICHMOND FIELD STATION
RICHMOND, CALIFORNIA

July 2013

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LIST OF ACRONYMS

Acronym or Abbreviation	Full Phrase
asl	above sea level
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
NRCS	US Department of Agriculture, Natural Resources Conservation Service
NWI	National Wetland Inventory
OBL	obligate
RBC	Richmond Bay Campus
RFS	Richmond Field Station
UC	University of California
UPL	upland
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture

SECTION 1
INTRODUCTION

1.1 BACKGROUND

The Richmond Field Station (RFS) is an off-site academic teaching and research facility owned by the University of California (UC) and managed by UC Berkeley since 1950. The RFS was selected as the preferred site for a second campus for consolidation of biosciences projects and activities managed by the Lawrence Berkeley National Laboratory. The proposed name of the new facility is the Richmond Bay Campus (RBC). The subject of the wetland delineation is 16 acres that comprise a subset of the initial development footprint for the RBC.

The purpose of this report is to provide results of wetland delineation activities on a 16-acre portion of the initial development footprint for the RBC. Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). Explicit in the definition are positive wetland indicators of three environmental parameters: hydrology, soil, and vegetation (USACE 1987). The three criteria are evaluated using US Army Corps of Engineers (USACE) wetland delineation forms completed in the field. Wetlands generally include swamps, marshes, bogs, and similar areas. As a subset of waters of the United States, jurisdictional wetlands are subject to Section 404 of the Clean Water Act and/or or Section 10 of the Rivers and Harbors Act. Jurisdictional wetlands typically include: traditional navigable waters, wetlands adjacent to navigable waters, non-navigable tributaries of traditional navigable waters that are relatively permanent, and wetlands that abut such tributaries (EPA 2007).

As shown in this report, one area within the 16-acre footprint was found to meet the above wetland definition, which is consistent with both the Clean Water Act and the 10 CFR Part 1022 wetland definitions. As presented in Section 3.3, this wetland does not appear to fall under the jurisdiction of the USACE.

1.2 PROJECT LOCATION

The RBC project site is at 1301 South 46th Street in the City of Richmond, Contra Costa County, California (37.919° N, -122.33° W). The 133-acre RBC project site is bounded on the west by a Pacific Gas and Electric (PG&E) service station, the north by Regatta Boulevard, the northeast by Meade Street, the east by the western side of South 46th Street, and the south by the San Francisco Bay. Interstate 580 (I-580) runs parallel to Meade Street along the northeastern boundary of the RBC project site (Figure 1-1).

1.3 PROJECT STUDY AREA

The project study area is a subset of the RBC project site bordered on the east by South 46th Street, the south by the Western Stege Marsh, the west by Avocet Way, and the north by Lark Drive (Figure 1-2). The southern portion of the project study area is approximately 10 feet above sea level (asl). Current redevelopment plans for the project study area include three buildings totaling 600,000 gross square feet, parking areas, and landscaping.

1.4 GENERAL SITE CONDITIONS

1.4.1 Ecological Features

Habitat types observed in the vicinity of the RBC site include native coastal terrace grasslands, coastal scrub, tidal marsh, tidal mudflats, and open slough channels associated with Western Stege Marsh (south of and outside the project study area). The marsh includes native cordgrass (*Spartina foliosa*) and other vegetation that provides habitat for the endangered California clapper rail (*Rallus longirostris obsoletus*).

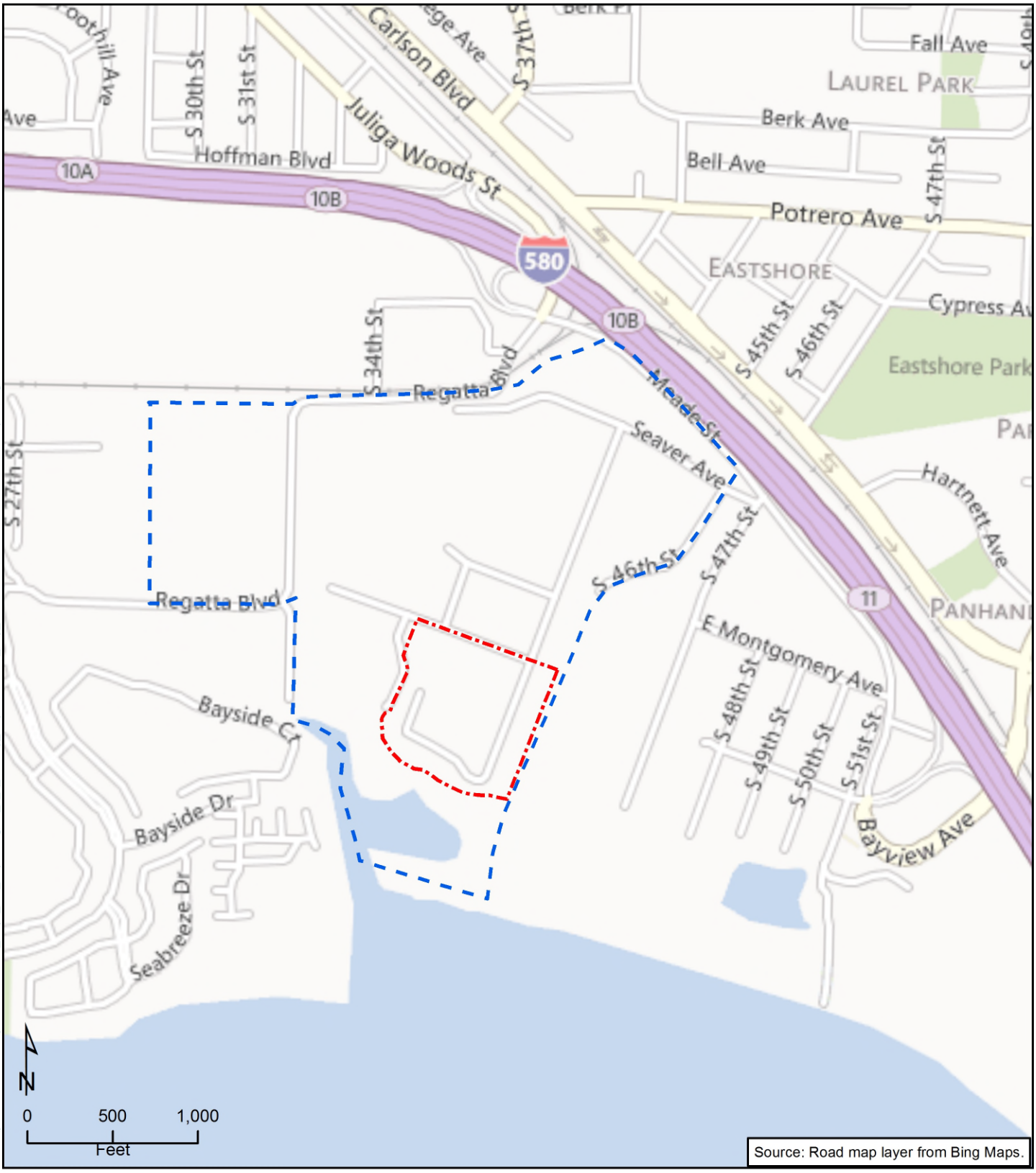
Within the project study area, the grassland habitat area includes both native and nonnative plant species, which provide primary habitat, such as nesting and foraging, and secondary habitat, such as movement corridors. Manmade landscaping and nonnative grasslands are also found. Monarch butterflies (*Danaus plexippus*) a California sensitive species, use eucalyptus trees in the central portion of the site for cover and thermal regulation during the winter months.

1.4.2 Precipitation

Table 1-1 lists the average and measured precipitation data (WETS table) (NRCS 2013a). Precipitation data in the days preceding the site visits was obtained from the California Department of Water Resources Data Exchange Center (Station ID: RHL). An initial investigation of the project study area was done on January 4, 2013, with focused field evaluations on February 13 and 15, 2013. In the week prior to the January 4 site visit, 0.04 inch of precipitation was recorded. In the week prior to the February 13 and 15 site visits, no precipitation was recorded.

1.4.3 Soils

Two soil types were identified from the US Department of Agriculture, Natural Resources Conservation Service (NRCS) Custom Soil Report for Contra Costa County, California: Urban Land and Clear Lake Clay (NRCS 2013b, NRCS 2013c). Clear Lake Clay is considered to have hydric properties, meaning soil map unit components are likely to meet



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Legend

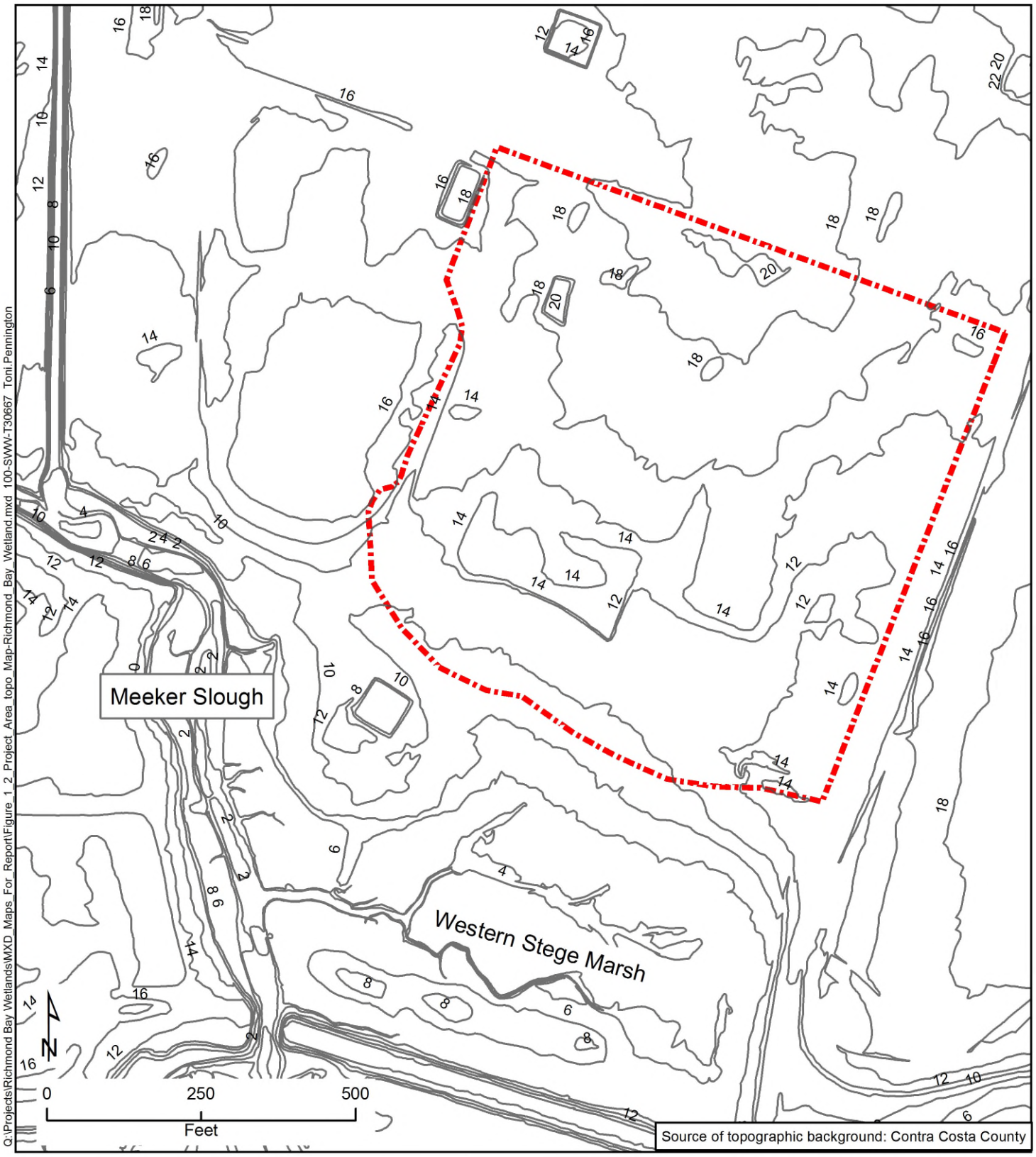
- Richmond Bay Campus Site
- Project Study Area

TETRA TECH

Locality Map

Richmond Field Station
Wetland Delineation
Richmond, California

Figure 1-1



Legend

2 ft. contour intervals

Project Study Area

TETRA TECH

Project Study Area

Richmond Field Station
Wetland Delineation
Richmond, California

Figure 1-2

Table 1-1
Precipitation Data

Month	Temperature (°F)			Precipitation (Inches)				
				Avg	30% Chance Will Have		Avg # of Days w/.1 or More	Avg Total Snowfall
	Avg Daily Max	Avg Daily Min	Avg		Less Than	More Than		
January	57.7	42.7	50.2	4.71	2.09	5.75	7	0.0
February	61.8	45.4	53.6	4.24	1.72	5.15	7	0.0
March	63.9	47.1	55.5	3.55	1.31	4.29	6	0.0
April	67.3	49.0	58.2	1.35	0.57	1.64	3	0.0
May	69.3	51.8	60.6	0.54	0.01	0.52	1	0.0
June	71.7	54.6	63.1	0.17	0.00	0.16	0	0.0
July	71.5	55.8	63.6	0.07	0.00	0.00	0	0.0
August	72.0	56.5	64.3	0.10	0.00	0.00	0	0.0
September	74.1	56.5	65.3	0.27	0.00	0.00	0	0.0
October	72.3	53.3	62.8	1.40	0.45	1.71	2	0.0
November	64.4	47.9	56.2	3.31	1.15	3.98	5	0.0
December	58.1	42.9	50.5	3.35	1.85	4.16	6	0.0

Creation Date: 08/29/2002
Latitude: 3756 Longitude: 12221 Elevation: 00060
State FIPS/County (FIPS): 06013 County Name: Contra Costa
Start yr – 1971 End yr. - 2000
Source: WETS Station, Richmond, CA7114; NRCS 2013a
% – percent # – number
Avg – average w/ – with

the hydric soil definition but field indicators are necessary for verification (NRCS 2013b). Clear Lake Clay is typically found on 0 to 2 percent slopes and is considered poorly drained (NRCS 2013b).

1.4.4 Land Uses

Land uses are primarily dedicated to research buildings, roadways, parking lots, and landscaped and undeveloped open areas. The adjacent lands include industrial/office uses, I-580, and low to medium density residential neighborhoods. The adjacent property to the east is the location of former chemical production operations, currently owned by Cherokee Simeon Venture I, LLC. Western Stege Marsh is immediately to the south of the RBC site and drains into San Francisco Bay. The Western Stege Marsh Project Restoration Area is a 9.40-acre compensatory mitigation wetland characterized by salt grass (*Distichlis spicata*), Pacific cordgrass (*Spartina foliosa*), and pickleweed (*Salicornia virginica*).

1.5 SITE DISTURBANCE

Historic and recent disturbance has resulted in significantly disturbed soils at the RBC site. Historic disturbance includes significant infill of Western Stege Marsh and original site development in the 1950s. Large quantities of pyrite cinders were deposited on the RBC site from prior to 1950 through 2002. Remedial activities have included removal of approximately 28,000 cubic yards of contaminated soil and marsh sediment, excavation of

an area at the outfall of a storm drain in Meeker Slough, and removal of an additional 3,300 cubic yards of contaminated soils from six upland areas.

Recent disturbance at the site includes regular maintenance of drainage swales that drain water from across the property. This has resulted in frequent soil disturbance that likely affects hydric soil indicators. Many of the dominant plant species are weedy invasives such as Harding grass (*Phalaris aquatica*) and sweet fennel (*Foeniculum vulgare*). These opportunistic species are not considered hydrophytic (Lichvar and Kartesz 2012); however, they may be taking advantage of increased soil moisture when native perennials are not yet established.

SECTION 2
METHODS

2.1 SAMPLE SCHEDULE

The project study area was visited by Tetra Tech biologist Shannon Lindquist on January 4, 2013 to assess the condition of the existing habitats. All habitat types were noted with particular consideration given to the presence of potential wetland features (e.g., a seasonal wetland, vegetated channels, and lined swales).

Tetra Tech biologists Toni Pennington and Darlene Siegel did the wetland delineation on February 13 and 15, 2013.

2.2 SAMPLING PROTOCOLS

This wetland delineation followed the 1987 *Corps of Engineers Wetland Delineation Manual* (USACE manual) (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.)*. National Wetland Inventory (NWI) (USFWS 2013) maps and the California Wetlands Portal were reviewed to determine if wetlands had been previously identified in the project study area. According to these sources, no wetlands are known to be in the project study area; however, the Western Stege Marsh, a jurisdictional water body, is immediately south of the project study area.

During the January site visit, the area was qualitatively surveyed to identify potential wetlands and other waters of the US. At that time, standing water was observed in stormwater drainages. During the formal delineation upland and wetland plots were sampled to characterize community distinctions and to facilitate wetland boundary determinations according to USACE (1987). In general, test pits were dug at locations with clear breaks of topography, vegetation, or hydrologic features. Sample points were positioned to be distinctly in wetland and upland communities, and then as necessary to identify where one or more parameters disappeared in the transitional zone between the two habitat types. At each sample plot, indicators of vegetation, hydrology, and soils were documented. Where all three wetland criteria were positive, the area was identified as a wetland (USACE 1987). Wetland determination data forms are in Appendix B.

Vegetation strata were surveyed using circular plots: 30-foot diameter for tree and woody vine stratum, 15-foot-diameter for shrub and sapling, and 5-foot diameter for herbaceous strata. Dominant plants were identified to the species level with total percent cover estimated for each stratum. All plant species were documented and dominants were calculated based on their percent cover in each stratum. Lichvar and Kartesz (2012) was used to determine a plant's indicator status (facultative upland [FACU], facultative [FAC], facultative wetland [FACW], or obligate [OBL]). Plants not listed in Lichvar and Kartesz (2012) were considered upland (UPL) plant species.

Soil test pits were dug to a standard depth of 16 inches for determination of wetland hydrology and hydric soil indicators. No standing water, saturated soils, or high water table was observed. Soil horizons and textures were identified for each sample plot and soil matrix and redoximorphic features, if present, were determined using Munsell® Soil Color Charts (Munsell 2009) and WTI (2010). All potential wetlands were mapped to sub-meter accuracy with a Trimble GeoExplorer 6000 Series Geo XH global positioning (GPS) unit. Data were post-processed and transferred to global information system (GIS) shapefiles using Pathfinder 5.0 and were then overlain onto topographic base maps using ArcMap 10.

2.3 ADDITIONAL DATA SOURCES

Additional resources used included results of a recent botanical survey at the RFS ([URS] 2007), the National Wetlands Plant List (Lichvar and Kartesz 2012), and soil surveys for Contra Costa County (NRCS 2013b).

SECTION 3
DESCRIPTION OF WETLANDS AND OTHER WATERS OF THE UNITED STATES

Based on the site visit in January, two areas were targeted for the formal delineation in February. Specific sample points were targeted for investigation as they had been previously determined as potential wetlands or other waters of the United States. A total of seven sample points were collected within the project study area, and one was collected just outside the project study area (Figure 3-1) to determine whether all wetland indicators were present. We found 1) two vegetated drainage channels with evidence of recent water flow and 2) a small herbaceous wetland swale downstream of the drainage channel (Figure 3-2).

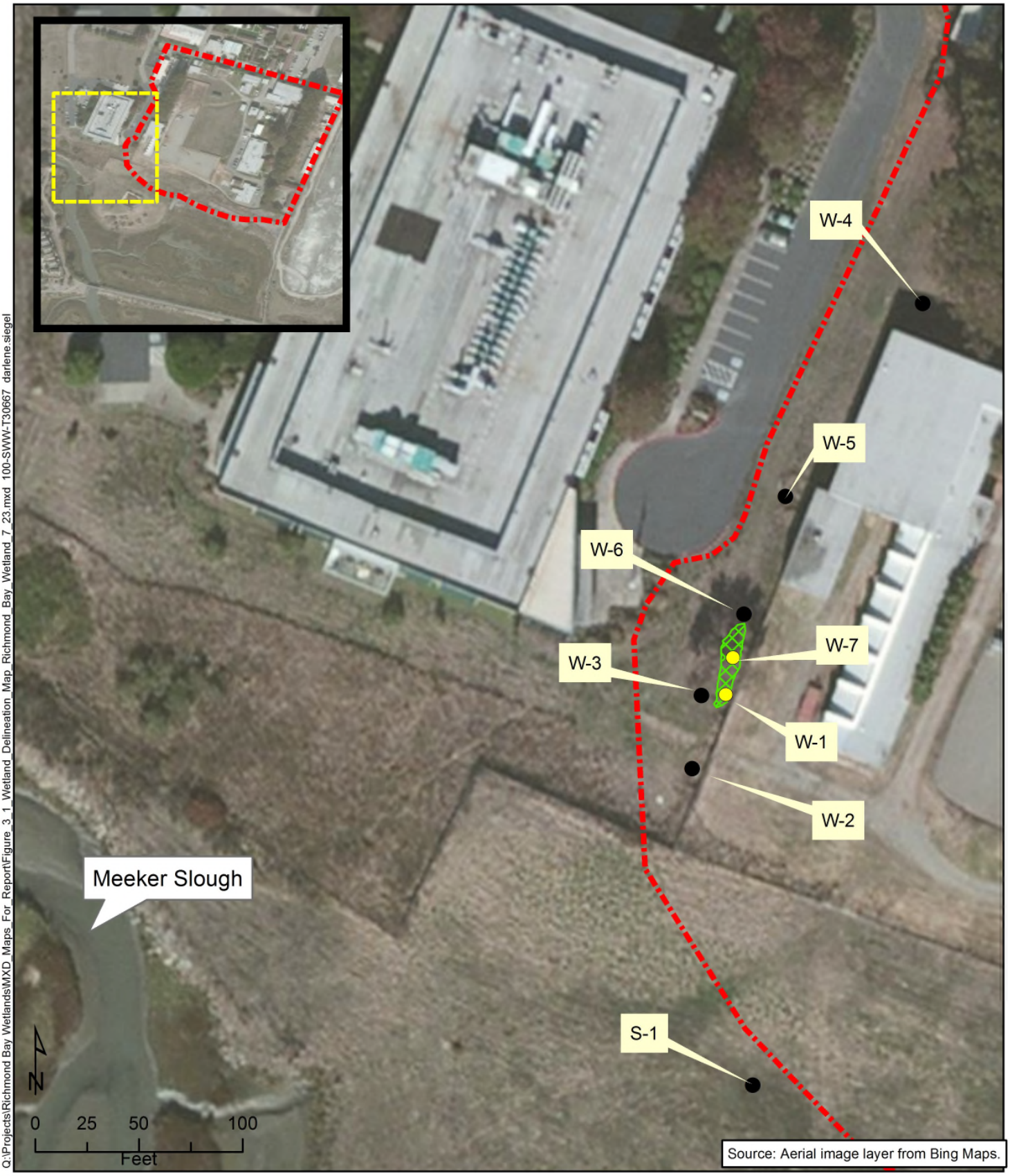
3.1 DRAINAGE CHANNELS

An asphalt-lined channel, located on the east side of the project study area, drains water from adjacent buildings (see inset graphic on Figure 3-2). Water moves south-southwest to a culvert under a driveway after which it daylights once before continuing underground to an outlet located outside the project area.

A vegetated channel is north of Building 128, between Building 275 and a fence line (Figure 3-2 and Photo 1, Appendix A). The channel appears to drain water from around Building 275 and carries water south for approximately 230 feet, turns west and drains to a box culvert at the northwest corner of Building 128 (Photo 2, Appendix A). From there, water flows due south (Photo 3, Appendix A) for approximately 180 feet to a 300-square-foot herbaceous wetland swale. The channel is periodically maintained to convey water. Sample points W-4, W-5, and W-6 were along this channel (Figure 3-1). Again, wetland determination data forms are in Appendix B.

3.1.1 Vegetation

Common plant species observed along this drainage channel included: Harding grass (*Phalaris aquatica*), bur clover (*Medicago polymorpha*), doves foot geranium (*Geranium molle*), narrow leaf plantain (*Plantago lanceolata*), and spring vetch (*Vinca sativa*). The dominant plant species along the channel, Harding grass, is FACU, which is not considered a vegetation indicator for wetlands.



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Legend

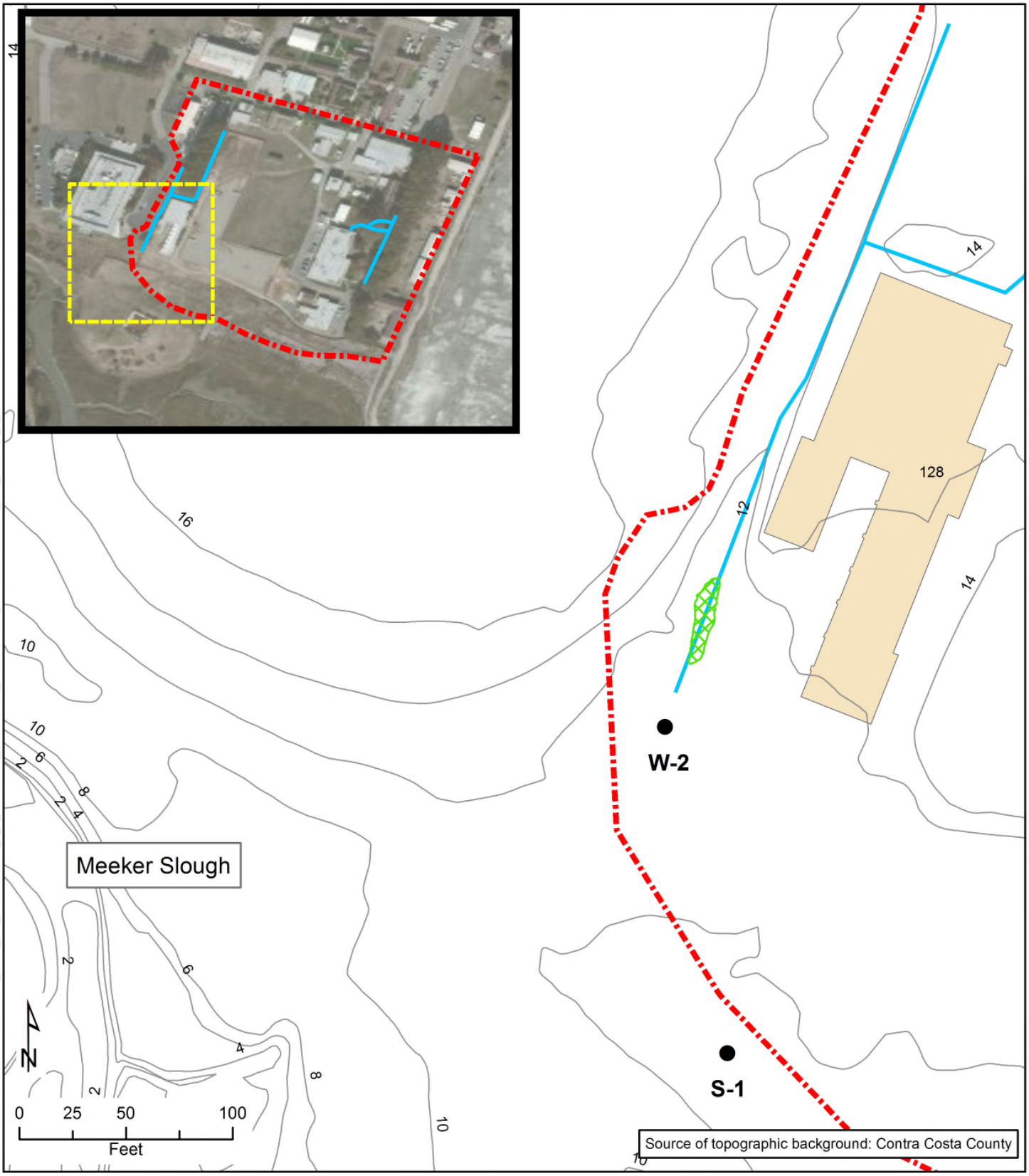
- Project Study Area
- Herbaceous Wetland
- Wetland Sample Point
- Non-wetland Sample Point
- Enlarged Area

TETRA TECH

Wetland Delineation Map

Richmond Field Station
Wetland Delineation
Richmond, California

Figure 3-1



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Legend

- Non-wetland Sample Point
- Drainage Channel
- 2 ft. Contour Intervals
- Building
- Project Study Area
- Enlarged Area
- Herbaceous Wetland (Non-Jurisdictional)

TETRA TECH

Preliminary Jurisdictional Determination Analysis

Richmond Field Station
Wetland Delineation
Richmond, California

Figure 3-2

3.1.2 Soils

Soils in this vicinity are delineated by the NRCS as Clear Lake Clay and Urban Land (NRCS 2013b). The description for Clear Lake Clay in the Custom Soil Resource Report is somewhat incongruent with field observations. We found relatively loamy soils at sample point W-4 with four color layers in the matrix profile, including a redox dark surface (F6) which is a hydric indicator for wetlands. Despite this indicator, all three criteria were not observed.

3.1.3 Hydrology

The channel conveys water that drains from adjacent buildings. Water is conveyed along an open swale (Photo 1, Appendix A), to an underground culvert (Photo 2, Appendix A), then daylights again and joins another underground culvert (Photo 3, Appendix A). Despite this, there were no indicators of wetland hydrology at sample point W-4. Wetland hydrology indicators were observed at sample points W-5 (water marks and sediment deposits) and W-6 (water-stained leaves). Standing water was observed during the January 2013 site visit, but no standing water was observed during the February 2013 wetland delineation.

3.2 HERBACEOUS WETLAND SWALE

A 300-square-foot herbaceous wetland swale was observed in the southwest corner of the project study area (Photos 4 and 5, Appendix A) (Figure 3-1). The area is periodically maintained to convey water. No standing water was observed during the February wetland delineation.

Sample points W-1 and W-7 were collected in this wetland and sample points W-3 and W-6 were collected immediately adjacent to, but outside the wetland. Sample point W-2 was taken below a culvert that drains the wetland; however all three wetland indicators were not met at this sample point. Sample point S-1 was collected to the southeast of the wetland and outside the project study area. During the January preliminary site visit, it appeared water could accumulate in the vicinity of sample point S-1; however no hydric indicators were found during the February wetland delineation (Figure 3-1).

3.2.1 Vegetation

The dominant plant species observed in the wetland swale was brown-headed rush, *Juncus phaeocephalus* (FACW), which is a vegetation indicator for wetlands. The *J. phaeocephalus* was not in flower, so identification was largely based on previous documentation of the species at the RFS (URS 2007). Without flowers, it could be mistaken for *J. effusus*; however, *J. effusus* is also FACW, so the indicator for hydric vegetation would remain the same.

3.2.2 Soils

Soils in the wetland swale are mapped as Urban Land (NRCS 2013b). We found clay loam soils of 7.5 YR 3/1 throughout the matrix in sample points W-1 and W-8 with prominent redoximorphic features (redox dark surface [F6]), a profile indicative of hydric soils and indicator of wetlands.

3.2.3 Hydrology

The source of water to the wetland swale is largely from the drainage channel from the north. The second culvert (Photo 3, Appendix A) appears to also convey water from the east, as indicated by the location of known underground water conveyances (Figure 3-2). Water is conveyed from the wetland swale, to the south, through a third culvert (Photo 5, Appendix A) where it flows to another open swale for approximately 20 feet. Beyond this point, there is very little evidence of an open swale. Another underground culvert carries water off the project study area to Western Stege Marsh (Figure 3-2). There were no indicators of wetland hydrology below the wetland swale.

3.3 PRELIMINARY WETLAND BOUNDARY AND JURISDICTIONAL DETERMINATION

Based on the information in Section 3.1, the drainage channel does not possess the required three wetland indicators and is not a wetland.

The boundary of the wetland swale was based on the dominance of FACW vegetation, hydric soils, and wetland hydrology indicators compared to adjacent upland vegetation, soils, and hydrology. Within the wetland, *J. phaeocephalus* was found growing in a distinct circular area with water-stained leaves around the perimeter. Soils within the wetland swale were somewhat problematic as the area is known to be regularly maintained for water conveyance; however, there was sufficient evidence for redox dark surfaces (hydric soil indicator F6). The paired upland sample points (W-3 and W-6) were dominated by FACU plant species (largely Harding grass) with brownish soils (10YR 3/2) and no hydrology indicators. Due to topographic variation (gradual slope to the southeast) below the third culvert and lack of sufficient moisture, the wetland swale is not directly hydrologically connected to the navigable waters of Meeker Slough. Also, the wetland swale is not adjacent to Meeker Slough or other navigable waters. As a result, the wetland swale does not appear to be jurisdictional.

Sample point W-2 was collected below the wetland swale and the third culvert (Figure 3-2). The site was dominated by Harding grass (FACU) and, despite being located below a culvert, there were no soil or hydrology indicators at the time of survey. Sample point S-1, collected further southeast of the wetland swale, did not provide evidence for hydric vegetation, soils, or hydrology during the February 2013 site visit (Figure 3-2).

In general, it appears that water moves from the drainage channel along the western side of the project area, through two culverts to the wetland swale, and out below the third culvert. Below this, there is a slight topographic slope toward the southeast (away from Meeker Slough) in the vicinity of sample point S-1 (Figure 3-2). The area surrounding S-1 is a slight artificial depression that appears to be an artifact of the construction activities for the remediation and restoration of the site. While this depression appears to trap runoff from above, it does not pond for sufficient duration to form all three hydric indicators, nor does it appear to allow water to drain to navigable waters. As a result, the depression surrounding sample point S-1 does not possess the required three wetland indicators and is not a wetland.

3.4 DISCLAIMER

This report documents the investigation, best professional judgment, and conclusions of the investigators. It should be considered a Preliminary Jurisdictional Determination and used at your own risk until it has been approved in writing by the US Army Corps of Engineers, San Francisco District, Regulatory Program.

SECTION 4
LITERATURE CITED

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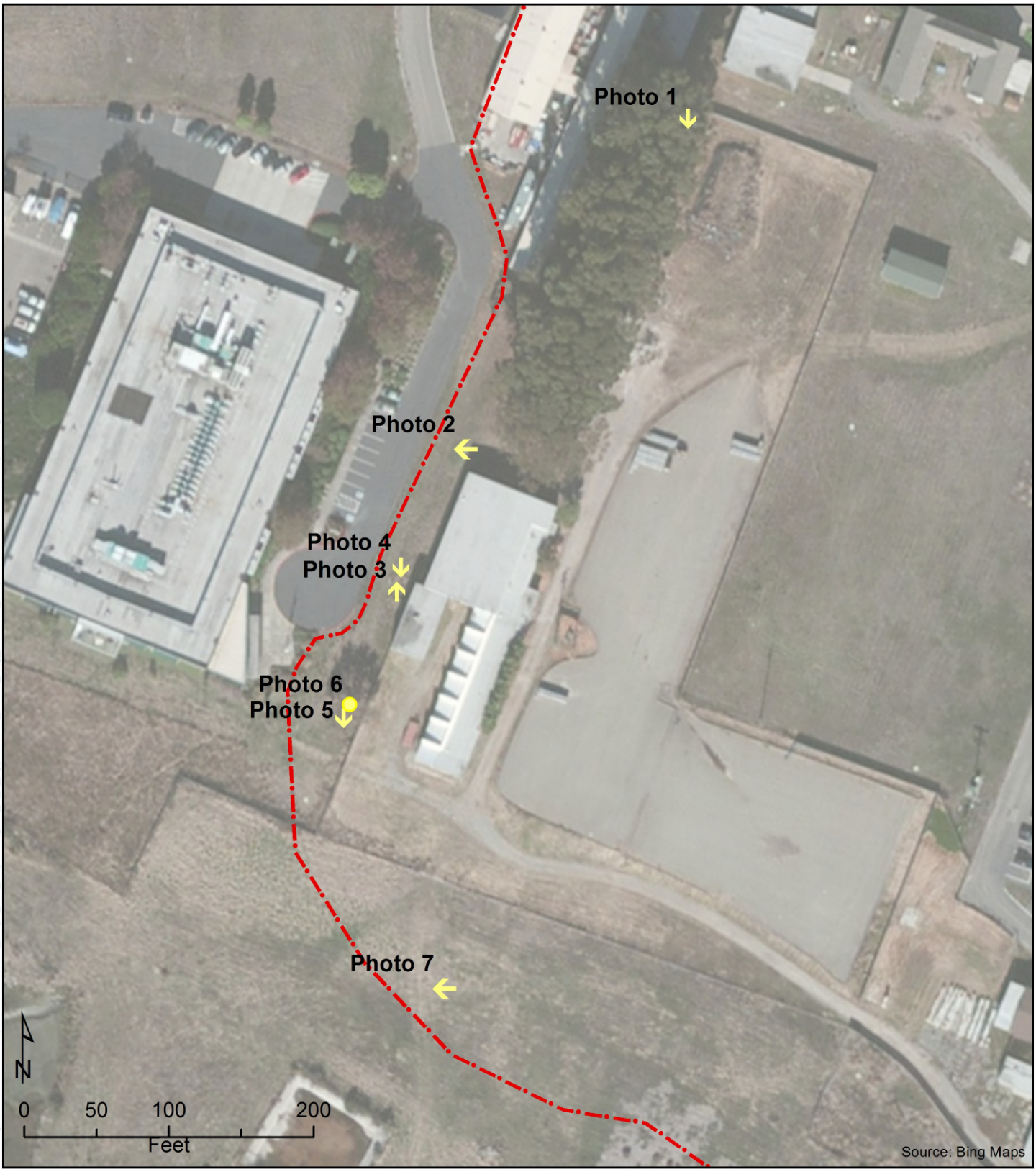
Appendix A

Photo Log



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Location and direction of photo points referenced in the report and Appendix A

Photo Log Location Map

Legend

Project Study Area

TETRA TECH

Richmond Field Station
Wetland Delineation
Richmond, CA

Figure A-1

Photo 1. Drainage channel that flows south parallel to Building 275 (facing south).

Photo 2. Drainage shown in Photo 1, as it turns west at Building 128 and flows into a box culvert (facing west).

Photo 3. Box culvert west of Building 128. Channel flows underground from previous culvert and exits here where it combines with wetland swale (facing north).

Photo 4. Wetland swale from Photo 3 continues to flow as a channel to the fence line (facing south).

Photo 5. Wetland swale from previous photo flows into a culvert to pass under Heron Drive and continues as a narrow channel (facing south).

Photo 6. Wetland swale (300 square feet).

Photo 7. Sample point S-1 located south of Building 128 and Heron Drive, in a nonnative grassland habitat (facing west). During the January 2013 site visit, hydric vegetation in the area suggested a potential depressional wetland; however, no hydric soils or wetland hydrology indicators were recorded during the February 2013 delineation.

Appendix B

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Phase I RBC City/County: Contra Costa Sampling Date: 2/13/13

Applicant/Owner: UC Berkeley State: CA Sampling Point: S-1

Investigator(s): Pennington, Siegel Section, Township, Range: NW1/4 SW1/4 S20, T1NR4W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR): C Lat: 37.9124529741 Long: -122.336346409 Datum: WGS 84

Soil Map Unit Name: Urban Land 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 _____ 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:

Area has been significantly altered within the last nine years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft.)			
1. Lotus corniculatus	25	Y	FAC
2. Plantago lanceolata	10	N	FAC
3. Rumex crispus	15	N	FAC
4. Geranium molle	15	N	UPL
5. Helminthotheca echiodes	5	N	FACU
6. Phalaris aquatica	25	Y	FACU
7. Distichlis spicata	10	N	FAC
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	30	x 4 =	120
UPL species	15	x 5 =	75
Column Totals:	105 (A)		375 (B)

Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: S-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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Remarks:

Filled in 2002 with approximately 4 ft. top soil. Historic aerials indicate inundation by Stege Marsh in 1939, but substantial fill prior to 1960's and further manipulation of the area in 2004.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No 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** X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Phase I RBC City/County: Contra Costa Sampling Date: 2/13/13

Applicant/Owner: UC Berkeley State: CA Sampling Point: W-1

Investigator(s): Pennington, Siegel Section, Township, Range: NW1/4 SW1/4 S20, T1NR4W

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

Subregion (LRR): C Lat: 37.9129699332 Long: -122.336403839 Datum: WGS 84

Soil Map Unit Name: Urban Land 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 _____ 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:

Low area that drains adjacent upland areas and parking lot to the west. Drains through culverts to the south. Receiving area has no significant wetland indicators. Area is periodically maintained for water conveyance.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft.)			
1. Phalaris aquatica	10	N	FACU
2. Lotus corniculatus	5	N	FAC
3. Medicago polymorpha	5	N	FACU
4. Geranium molle	10	N	UPL
5. Vinca sativa	5	N	UPL
6. Juncus phacocephalus	65	Y	FACW
7.			
8.			
	130 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 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:

- ☑ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

J. phaeorephalris conspicuous, but isolated. Juncus spp. was not in flower, however, J. phaeoephalus previously reported on site. Eucalyptus polyanthemos growing adjacent to, but not in the wetland.

SOIL

Sampling Point: W-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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5 YR 3/1	92	5 YR 3/4	8	C	M	CL	
8-16	7.5 YR 3/1	100					CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Area commonly maintained for water conveyance; seasonally ponded due to run-off from adjacent roof tops.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No 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:

Standing water observed above this area 1/4/13

Remarks:

Ponded water reported to occur during the rainy season (Oct - March for this area). None observed during this site visit. 0.24 inches recorded within last 7 days (Contra Costa Co. Flood Control and Water Conservation District - Gage 21).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Phase I RBC City/County: Contra Costa Sampling Date: 2/13/13

Applicant/Owner: UC Berkeley State: CA Sampling Point: W-2

Investigator(s): Pennington, Siegel Section, Township, Range: NW1/4 SW1/4 S20, T1NR4W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR): C Lat: 37.9128709279 Long: -122.336458151 Datum: WGS 84

Soil Map Unit Name: Urban Land 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:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft.)			
1. Vinca sativa	10	N	UPL
2. Helminthotheca echiodes	10	N	FACU
3. Medicago polymorpha	5	N	FACU
4. Geranium molle	5	N	UPL
5. Phalaris aquatica	90	Y	FACU
6. Foeniculum vulgare	5	N	UPL
7.			
8.			
	125 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	105	x 4 =	420
UPL species	20	x 5 =	100
Column Totals:	125 (A)		520 (B)

Prevalence Index = B/A = 4.16

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: W-2

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
0-18	10YR 3/1	100					CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** 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) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No 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** X

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

Remarks:

Drained area below small culvert; below sample point W-1; however, no hydraulic indicators. Standing water may occur during wet season, but no evidence of long duration ponding.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Phase I RBC City/County: Contra Costa Sampling Date: 2/13/13

Applicant/Owner: UC Berkeley State: CA Sampling Point: W-3

Investigator(s): Pennington, Siegel Section, Township, Range: NW1/4 SW1/4 S20, T1NR4W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR): C Lat: 37.9129680169 Long: -122.336444924 Datum: WGS 84

Soil Map Unit Name: Urban Land 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:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Eucalyptus polyanthemos	25	Y	UPL
2.			
3.			
4.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft.)			
1. Phalaris aquatica	80	Y	FACU
2. Lotus cornicalatus	5	N	FAC
3. Helminthotheca echioides	5	N	FACU
4. Vinca sativa	5	N	UPL
5. Geranium molle	8	N	UPL
6. Medicago polymorpha	8	N	FACU
7.			
8.			
	111	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	93	x 4 =	372
UPL species	38	x 5 =	190
Column Totals:	136 (A)		577 (B)

Prevalence Index = B/A = 4.24

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: W-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** 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) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No 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** X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Phase I RBC City/County: Contra Costa Sampling Date: 2/13/13

Applicant/Owner: UC Berkeley State: CA Sampling Point: W-4

Investigator(s): Pennington, Siegel Section, Township, Range: NW1/4 SW1/4 S20, T1NR4W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR): C Lat: 37.9134929656 Long: -122.336087861 Datum: _____

Soil Map Unit Name: Clear Lake Clay 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 _____ 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 X	No _____	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Area is periodically maintained for water conveyance. Drains water from adjacent roof tops.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Eucalyptus polyanthemos	5	Y	UPL
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft.)			
1. Medicago polymorpha	5	N	FACU
2. Geranium molle	5	N	UPL
3. Phalaris aquatica	90	Y	FACU
4. Plantago lanceolata	10	N	FAC
5. Helminthotheca echiodes	5	N	FACU
6. Vinca sativa	5	N	UPL
7.			
8.			
	120	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	15	x 5 =	75
Column Totals:	120 (A)		475 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: W-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 Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					L	
3-9	10 YR 3/1	65	7.5 YR 5/2	45	LL		LL	
9-10	10 YR 3/1	95	5 YR 4/4	5			SCL	
10-16	10 YR 3/1	90	5 YR 4/4	10			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)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No 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** X

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

Remarks:

The sample point is in the immediate vicinity of a culvert that drains water from adjacent roof tops; however, no evidence of ponding during the site visit.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Phase I RBC City/County: Contra Costa Sampling Date: 2/13/13

Applicant/Owner: UC Berkeley State: CA Sampling Point: W-5

Investigator(s): Pennington, Siegel Section, Township, Range: NW1/4 SW1/4 S20, T1NR4W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR): C Lat: 37.9132336613 Long: -122.336310776 Datum: WGS 84

Soil Map Unit Name: Clear Lake Clay 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 _____ 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 X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Areas is periodically maintained for water conveyance. Drains water from adjacent roof tops.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft.)			
1. Phalaris aquatica	95	Y	FACU
2. Medicago polymorpha	5	N	FACU
3. Geranium molle	5	N	UPL
4. Plantago lanceolata	5	N	FAC
5.			
6.			
7.			
8.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	0	x 2 =	
FAC species	1	x 3 =	
FACU species	100	x 4 =	400
UPL species	5	x 5 =	25
Column Totals:	105 (A)		425 (B)

Prevalence Index = B/A = 4.04

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: W-5

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 4/1	95	5 YR 4/6	5	C	M	CL	
4-16	10 YR 4/1	98	5 YR 4/6	2	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No 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 – Arid West Region

Project/Site: Phase I RBC City/County: Contra Costa Sampling Date: 2/15/13

Applicant/Owner: UC Berkeley State: CA Sampling Point: W-6

Investigator(s): Pennington, Siegel Section, Township, Range: NW1/4 SW1/4 S20, T1NR4W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR): C Lat: 37.9130765936 Long: -122.33637623 Datum: WGS 84

Soil Map Unit Name: Urban Land 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 _____ 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 X	No _____	

Remarks:

Areas is periodically maintained for water conveyance. Drains water from adjacent roof tops.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft.)			
1. Phalaris aquatica	95	Y	FACU
2. Geranium molle	5	N	UPL
3. Helminthotheca echiodes	5	N	FACU
4. Plantago lanceolata	5	N	FAC
5.			
6.			
7.			
8.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	1	x 3 =	15
FACU species	100	x 4 =	400
UPL species	5	x 5 =	25
Column Totals:	110 (A)		440 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: W-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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					CL	
8-16	10 YR 4/1	92	7.5 YR 5/1	8	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soils are disturbed due to regular maintenance. Otherwise F8 conditions might be expected.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No 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 – Arid West Region

Project/Site: Phase I RBC City/County: Contra Costa Sampling Date: 2/15/13

Applicant/Owner: UC Berkeley State: CA Sampling Point: W-7

Investigator(s): Pennington, Siegel Section, Township, Range: NW1/4 SW1/4 S20, T1NR4W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR): C Lat: 37.913018875 Long: -122.336392944 Datum: WGS 84

Soil Map Unit Name: Urban Land 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:

Areas is periodically maintained for water conveyance. Drains water from adjacent roof tops.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft.)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft.)			
1. Juncus phaecephalus	90	Y	FACW
2. Vinca sativa	5	N	UPL
3. Helminthotheca echiodes	5	N	FACU
4.			
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft.)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 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:

- ✔ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Eucalyptus polyanthemos growing adjacent to, but not inside the wetland.

SOIL

Sampling Point: W-7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5 YR 3/1	95	5 YR 3/4	5	C	M	CL	
8-10	7.5 YR 3/1	65	5 YR 3/4	35	C	M	CL	
10-16	7.5 YR 3/1	90	5 YR 3/4	10	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Area commonly maintained for water conveyance; seasonally ponded due to run-off from adjacent roof tops.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No 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: