

July 27, 2012

U.S. Army Corps of Engineers
San Francisco District
1455 Market Street
San Francisco, California 94103-1398

Attention: Mr. Cameron Johnson

**RE: Request for Jurisdictional Determination
EBMUD 39th Avenue Reservoir Replacement Project,
Oakland, California**

Dear Mr. Johnson

1. INTRODUCTION

On behalf of East Bay Municipal Utility District (EBMUD) (herein referred to as the applicant), Monk & Associates, Inc. (M&A) completed a wetland delineation of the proposed 39th Avenue Reservoir Replacement Project Site (herein referred to as the project site), located at 4290 Maybelle Avenue in the City of Oakland, California (Figures 1 and 2). The project site is approximately 7.6 acres. The applicant is proposing to improve existing access roads, replace the existing reservoir with a smaller tank type reservoir and replace the existing pipeline within the project site. Additional access roads and landscaping will be added within the existing reservoir footprint.

This letter-report presents the results of M&A's delineation of potential waters of the United States. M&A requests that the U.S. Army Corps of Engineers (Corps) confirm those areas on the project site that meet criteria as wetlands and all other areas that would be within the Corps jurisdiction pursuant to Section 404 of the Clean Water Act.

2. APPLICANT

East Bay Municipal Utilities District
P.O. Box 24055, MS 604
Oakland, California 94623-1055
Attention: Mr. Tim Fuelle
Phone: (510) 287-1324

3. PROPERTY LOCATION AND SETTING

The project site is located in the City of Oakland, east of Highway 13 (Figure 1 and 2). It is bordered to the north by Selkirk Street and 39th Avenue, to the east by Gregory Place and to the south by residential housing and to the west by Maybelle Avenue, 39th Avenue and residential housing. The project site is bounded on its northwestern edge by 39th Avenue. The immediate

surrounding area on all sides of the project site except the northwestern edge is dominated by residential housing. Figure 3 provides an aerial photograph showing the surrounding land use.

4. WETLAND DELINEATION METHODS

On July 11, 2012, Monk & Associates' biologists Ms. Hope Kingma and Ms. Christy Owens conducted a wetland delineation of the project site. Before conducting the delineation, M&A biologists reviewed the Natural Resources Conservation Service (NRCS) Soil Data Mart¹ for Alameda County to determine soil types within the project site.

The wetland delineation was conducted according to the Corps' 1987 *Wetlands Delineation Manual*² in conjunction with the Regional Supplement for the Arid West Region³. Vegetation, hydrology, and soils information from selected data points were recorded on data sheets that are attached to this report. The locations of these data points are indicated on the preliminary wetland delineation map (Sheet 1).

Data points and potential wetland areas were mapped using a Trimble Pro-XR Global Positioning System (GPS) having sub-meter accuracy. GPS data were corrected using base station files from California Survey and Drafting. The delineation map was made from the GPS files using ArcMap 9.0. All spatial data were projected into the California State Plane, NAD 83 coordinate system, Zone 3. Using GPS technology, the boundaries (within 30 inches) of each delineated wetland was transferred to an aerial photograph of the project site (Sheet 1).

5. WETLAND DELINEATION RESULTS

5.1 Project Site Topography and Hydrology

The project site topography is slightly to moderately sloped along the northern, southern and eastern edges of the project site adjacent to the reservoir. The western half of the project site is slightly sloped on the northwestern, western and southwestern edges of the project site which drain to a topographic low in the center of the western half of the project site near the pump station (Figures 2 and 3).

There are three small potential seasonal wetlands mapped in topographic low areas on the western half of the project site. Two smaller potential seasonal wetlands occur to the east of the pump station (ISW1 & ISW2 on Sheet 1). The other small potential seasonal wetland occurs near the northern boundary of project site adjacent to a paved access road that surrounds the existing

¹ NRCS. 2012. Natural Resources Conservation Service Soil Data Mart website INTERNET: <http://soildatamart.nrcs.usda.gov/Default.aspx>

² U.S. Army Corps of Engineers. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station. Technical Report, Y-87-1. Vicksburg, Mississippi. 100 pp

³ U.S. Army Corps of Engineers. 2008. Regional supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center (December 2008).

reservoir. This feature appears to be fairly new, developing due to a broken irrigation pipe from the backyard of an offsite residence (ISW3 on Sheet 1).

There is one potential “other waters” mapped in the topographic low on the western half of the project site. This drainage feature drains west from the pump station towards the toe of the berm surrounding the reservoir. Although there are a few small discrete pockets of hydrophytic vegetation along this drainage feature, the feature as a whole supports less than 5% vegetation, with evidence of scour and drift deposits, and thus meets the criteria to be classified as an “other water” (IOW1 on Sheet 1).

5.2 Project Site Soils

The Natural Resources Conservation Service (NRCS) mapped one soil series, Xerorthents-Los Osos complex, 30 to 50 percent slopes, on the project site. Figure 4 provides a map of the soil type mapped on the project site. This soil complex is found in areas used mainly for residential developments that have a density of two to four single-family dwellings per acre on moderately sloping topography. The parent material typified by this complex is variable due to its high use in urban construction. Very slow to slow permeability and rapid runoff is characteristic of the soil types within this complex and the typical vegetation currently associated with them is residential and urban landscaping and horticultural features.

During the site investigation visit, test pits dug by M&A at each sample site for the wetland delineation confirmed that much of the project site soils were consistent with the soil description provided by the NRCS. The soil matrix colors in the areas mapped as hydric soils were noted as 10YR2/2, or 10YR2/1 with redoximorphic features noted as 7.5YR4/4 and 5YR4/6. Soil matrix colors in areas mapped as non-hydric soils were noted as 10YR3/3, 10YR3/2 and 10YR2/2, with no redoximorphic features.

5.2.1 XEROTHENTS-LOS OSOS COMPLEX, 30 TO 50 PERCENT SLOPES

The Xerorthents-Los Osos Complex soils are comprised of 70% of Xerorthents, loamy and similar soils, 20% of Los Osos silty clay loam and similar soils, 5% of Alamount clay and similar soils, 3% of Climara clay and similar soils and 2% of Millsholm silty loam and similar soils. This complex consists of soils on hills at an elevation of 200 to 1,500 feet. Xerorthents consist of soil material from urban cut and fill activities thus its characteristics are widely variable. These materials are comprised of clay loam, heavy loam and silty clay loam with as much as 20% angular fragments of shale and sandstone. Permeability is slow, runoff is rapid and the risk of erosion is high. However, there is no water-restricting layer and the rooting zone is more than 10 inches deep.

The Los Osos soil is moderately deep and well-drained, weathered from sedimentary rock and characterizes most undisturbed portions of this soil unit. The Los Osos soils are characterized by grayish-brown, silty clay loam to approximately 8 inches below soil surface. The subsoil extends to a depth of 30 inches and is typified by a dark grayish-brown, silty clay loam underlain by weathered shale. Permeability is slow, runoff is rapid and the risk of erosion is high. However, there is no water-restricting layer and the rooting zone is 24 to 40 inches deep.

5.3 Plant Communities

A complete list of plant species observed on the project site is presented in Table 1. Nomenclature used for plant names follows *The Jepson Manual, 2nd edition* (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website⁴.

The majority of the project site is highly manipulated and disturbed. Habitats found within the project area are described below.

5.3.1 ANTHROPOGENIC COMMUNITIES

The existing vegetation over most of the project site is classified as an anthropogenic community. Anthropogenic communities are plant communities dominated by plants introduced by man and established or maintained by human disturbance. Some of these communities are assemblages of ruderal species that have invaded disturbed areas while others are entirely artificial communities such as urban landscaping or orchards. Specifically, the project site is dominated by an “urban mix” of plant species. This occurs in areas adjacent to urban or residential developments where horticultural plants have escaped and naturalized or been planted. In such areas, a mix of native and non-native vegetation typically occurs.

The overstory includes native tree species, some of which are often planted for landscaping, such as coast redwood (*Sequoia sempervirens*), Monterey pine (*Pinus radiata*), big leaf maple (*Acer macrophyllum*) and coast live oak (*Quercus agrifolia*). Non-native tree species that also occur in the overstory include golden wattle (*Acacia pycnantha*), Chinese elm (*Ulmus parvifolia*) and late cotoneaster (*Cotoneaster lacteus*). The understory varies from largely unvegetated with redwood and pine duff, to areas completely dominated by English ivy (*Hedera helix*). Non-native species that occur in the understory include bull thistle (*Cirsium vulgare*), stinkwort (*Dittrichia graveolens*), common chickweed (*Stellaria media*), cutleaf geranium (*Geranium dissectum*), bristly ox-tongue (*Helminthotheca echioides*), Himalayan blackberry (*Rubus armeniacus*) and spiderwort (*Tradescantia fluminensis*). A few native species occur in the understory including Spanish clover (*Acmispon americanus* var. *americanus*), small-flowered melic (*Melica imperfecta*) and miner’s lettuce (*Claytonia perfoliata*).

5.3.2 SEASONAL WETLANDS AND DRAINAGE FEATURES

Several small potential seasonal wetlands and one sparsely vegetated drainage feature occur within topographic low areas in the center of the western half of the project site. These potential wetland features support a mix of both hydrophytic (wetland) and upland vegetation. Non-native species that occur within these features include prickly lettuce (*Lactuca serriola*)(FACU), prostrate spurge (*Chamaesyce prostrata*)(FACU), hyssop loosestrife (*Lythrum hyssopifolia*)(OBL), common vetch (*Vicia sativa*)(FACU) and common knotweed (*Polygonum aviculare*)(FACW). Native species that occur within these features include alder (*Alnus rhombifolia*)(FACW), summer cottonweed (*Epilobium brachycarpum*)(UPL), Pacific willow (*Salix lasiandra* var. *lasiandra*)(FACW), flatsedge (*Cyperus eragrostis*)(FACW), rush (*Juncus mexicanus*)(FACW) and narrow-leaved cattail (*Typha angustifolia*)(OBL). All areas mapped as seasonal wetlands were characterized by a dominance of hydrophytic vegetation and their adjacent upland areas were dominated by upland vegetation.

⁴ <http://ucjeps.berkeley.edu/interchange/index.html>

The small potential seasonal wetland (ISW3 on Sheet 1) on the northern boundary of the project site, adjacent to the paved road supports non-native species such as wart cress (*Lepidium didymum*)(UPL), prostrate spurge, common vetch and scarlet pimpernel (*Anagalis arvensis*)(FAC), and native species such as black nightshade (*Solanum americanum*)(UPL). Wetland taxa that occur within this feature include the non-native species everlasting cudweed (*Pseudognaphalium luteoalbum*)(FAC) and hyssop loosestrife (*Lythrum hyssopifolia*)(OBL) and the native species toad rush (*Juncus bufonius* var. *bufonius*)(FACW). As for all areas mapped as seasonal wetlands, this feature is dominated by hydrophytic vegetation.

6. DISCUSSION

The potential seasonal wetlands and other waters on the project site are considered to be “isolated” since these features have no connectivity to waters of the United States or navigable waters, and therefore are not subject to the Corps’ jurisdiction pursuant to the SWANCC Supreme Court decision.

7. ADDITIONAL INFORMATION

In addition to the regional location and project site location maps (Figures 1 and 2), M&A is including an aerial photograph (Figure 3), a soils map (Figure 4), a list of plants observed on the project site (Table 1), and a preliminary wetland delineation map depicted over an aerial photograph of the project site (Sheet 1). We have also attached the seven routine data sheets for the sampling sites that were investigated, which indicate the soil properties, presence/absence of hydrology indicators, and the plant species that were identified as dominants at each data point.

I would like to schedule a site visit at your convenience to further discuss our methods and findings and so that the Corps can verify the extent of its jurisdiction on the project site. Should you have questions or need other information, please do not hesitate to call me anytime at (925) 947-4867 ext. 212. Many thanks for your consideration.

Sincerely,

Ms. Hope Kingma
Associate Biologist

cc: Mr. Tim Fuelle, EBMUD

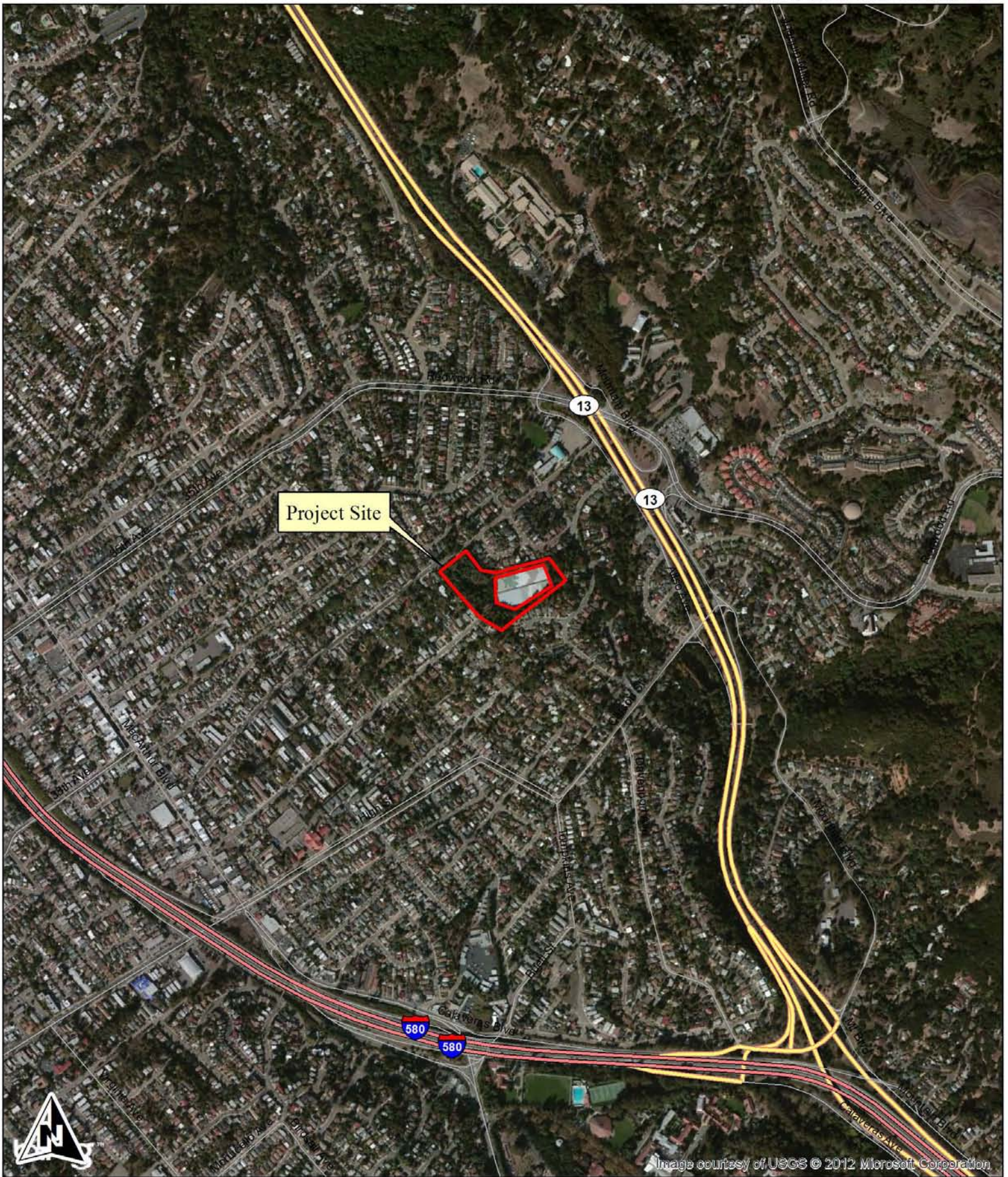
Attachments: Figures 1-4
 Table 1
 Data Sheets 1-7
 Sheet 1: Preliminary Wetland Delineation Map



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Figure 1. 39th Avenue Reservoir Replacement Project
4290 Maybelle Avenue Regional Map
Oakland, California

County: Alameda
Map Preparation Date: May 29, 2012



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Figure 2. 39th Avenue Reservoir Replacement Project
4290 Maybelle Avenue Location Map
Oakland, California

7.5-Minute Oakland East quadrangle
Map Preparation Date: May 29, 2012
Aerial Photograph Source:
http://goto.arcgisonline.com/maps/World_Imagery (2008)





Soil Types:

- 158 - Xerorthents-Los Osos complex, 30 to 50 percent slopes
- 162 - Water

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**Figure 4. Soils of the
 39th Avenue Reservoir Replacement Project
 4290 Maybelle Avenue, Oakland, California**

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Map Preparation Date: May 29, 2012
 Aerial Photograph Source:
[http://goto.arcgisonline.com/
 maps/World_Imagery](http://goto.arcgisonline.com/maps/World_Imagery) (2008)
 Soils Data Source:
<http://soildatamart.nrcs.usda.gov>

Table 1

Plants Species Observed on the 39th Avenue Reservoir Replacement Project Site

Gymnosperms

Cupressaceae

<i>Sequoia sempervirens</i>	Redwood
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Pinaceae

<i>Pinus radiata</i>	Monterey pine
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Angiosperms - Dicots

Araliaceae

* <i>Hedera helix</i>	English ivy
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Asteraceae

* <i>Cirsium vulgare</i>	Bull thistle
* <i>Dittrichia graveolens</i>	Stinkwort
* <i>Helminthotheca echioides</i>	Bristly ox-tongue
* <i>Lactuca saligna</i>	Willow lettuce
* <i>Lactuca serriola</i>	Prickly lettuce
* <i>Pseudognaphalium luteoalbum</i>	Everlasting cudweed

Betulaceae

<i>Alnus rhombifolia</i>	White alder
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Brassicaceae

* <i>Lepidium didymum</i>	Wart cress
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Caryophyllaceae

* <i>Stellaria media</i>	Common chickweed
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Euphorbiaceae

* <i>Chamaesyce prostrata</i>	Prostrate spurge
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Fabaceae

* <i>Acacia pycnantha</i>	Golden wattle
<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish-clover
* <i>Vicia sativa</i>	Common vetch

Fagaceae

<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast live oak
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Geraniaceae

* <i>Geranium dissectum</i>	Cut-leaf geranium
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Lythraceae

* <i>Lythrum hyssopifolia</i>	Hyssop loosestrife
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Myrsinaceae

* <i>Anagalis arvensis</i>	Scarlet pimpernel
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Onagraceae

<i>Epilobium brachycarpum</i>	Summer cottonweed
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* Indicates a non-native species

Table 1

Plants Species Observed on the 39th Avenue Reservoir Replacement Project Site

Polygonaceae	
* <i>Polygonum aviculare</i>	Common knotweed
Rosaceae	
* <i>Cotoneaster lacteus</i>	Late cotoneaster
* <i>Rubus armeniacus</i>	Himalayan blackberry
Salicaceae	
<i>Salix lasiandra</i> var. <i>lasiandra</i>	Pacific willow
Sapindaceae	
<i>Acer macrophyllum</i>	Big-leaf maple
Solanaceae	
<i>Solanum americanum</i>	Black nightshade
Ulmaceae	
* <i>Ulmus parvifolia</i>	Chinese elm
Angiosperms - Monocots	
Commelinaceae	
* <i>Tradescantia fluminensis</i>	Spiderwort
Cyperaceae	
<i>Cyperus eragrostis</i>	Tall flatsedge
Juncaceae	
<i>Juncus bufonius</i> var. <i>bufonius</i>	Toad rush
<i>Juncus mexicanus</i>	Mexican rush
Poaceae	
<i>Melica imperfecta</i>	Small-flowered melic
Typhaceae	
<i>Typha angustifolia</i>	Narrow-leaved cattail

* Indicates a non-native species

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: 39th Avenue Reservoir Replacement City/County: Oakland Sampling Date: 7/11/12
 Applicant/Owner: East Bay Municipal Utilities District State: CA Sampling Point: 1
 Investigator(s): Hope Kingma & Christy Owens Section, Township, Range: San Antonio
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%) 2%
 Subregion (LRR): California Lat: 37°47'40.43"N Long: 122°11'18.7"W Datum: NAD 83
 Soil Map Unit Name: Xerorthents-Los Osos Complex NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks:
Topographic low that collects surface runoff from slope and hardscape above.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>1 sq meter</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Sequoia sempervirens</u>	<u>10</u>	<u>X</u>	<u>UPL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>40</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>7</u> x 1 = <u>7</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species <u>15</u> x 5 = <u>75</u> Column Totals: <u>37</u> (A) <u>112</u> (B) Prevalence Index: B/A = <u>3.0</u>
Sapling/Shrub Stratum (Plot size: <u>1sq meter</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>1 sq meter</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is: ≤3.0* <input type="checkbox"/> Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation* (Explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Dittrichia graveolens</u>	<u>5</u>	<u>X</u>	<u>UPL</u>	
2. <u>Polygonum aviculare</u>	<u>15</u>	<u>X</u>	<u>FACW</u>	
3. <u>Helminthotheca echioides</u>	<u>2</u>		<u>FACU</u>	
4. <u>Lactuca serriola</u>	<u>1</u>		<u>FACU</u>	
5. <u>Vicia sativa</u>	<u>1</u>		<u>FACU</u>	
6. <u>Hedera helix</u>	<u>1</u>		<u>UPL</u>	
7. <u>Lythrum hyssopifolium</u>	<u>7</u>	<u>X</u>	<u>OBL</u>	
8. <u>Melica imperfecta</u>	<u>3</u>		<u>UPL</u>	
<u>35</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>65</u> % Cover of Biotic Crust _____				

Remarks:
Vegetation suppression due to prolonged inundation. Meets the hydrophytic vegetation criterion.

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	LOC ²		
0-12	10YR2/2	95	7.5YR4/4	5	C	M	Gravelly Loam	

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5) (LRR C)</p> <p><input type="checkbox"/> 1 cm Muck (A9) (LRR D)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p>	<p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input checked="" type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Vernal Pools (F9)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 1 cm Muck (A9) (LRR C)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR 13)</p> <p><input type="checkbox"/> Reduced Vertic (F18)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
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<p>Restrictive Layer (if present):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Remarks:
Mixed soil profile. Gravelly Loam with 5% redoximorphic features.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one required: check all that apply)</p>			<p>Secondary Indicators (2 or more required)</p>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input checked="" type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	

<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p>	<p>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Vegetation suppression due to prolonged inundation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: 39th Avenue Reservoir Replacement City/County: Oakland Sampling Date: 7/11/12
 Applicant/Owner: East Bay Municipal Utilities District State: CA Sampling Point: 2
 Investigator(s): Hope Kingma & Christy Owens Section, Township, Range: San Antonio
 Landform (hillslope, terrace, etc.): level ground Local relief (concave, convex, none): none Slope (%) 0
 Subregion (LRR): California Lat: 37°47'40.43"N Long: 122°11'18.7"W Datum: NAD 83
 Soil Map Unit Name: Xerorthents-Los Osos Complex NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 Upland sample point adjacent to seasonal wetlands

VEGETATION - Use scientific names of plants.

<p><u>Tree Stratum</u> (Plot size: <u>1 sq meter</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <th style="width:60%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:20%;"></th> </tr> <tr> <td>1. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td colspan="3"></td> <td align="right">_____ = Total Cover</td> </tr> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: <u>1 sq meter</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td>1. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>3. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>4. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>5. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td colspan="3"></td> <td align="right">_____ = Total Cover</td> </tr> </table> <p><u>Herb Stratum</u> (Plot size: <u>1 sq meter</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">1. <u>Dittrichia graveolens</u></td> <td style="width:10%; text-align: center;">6</td> <td style="width:10%; text-align: center;">X</td> <td style="width:20%; text-align: center;">UPL</td> </tr> <tr> <td>2. <u>Acmispon americanus var. americanus</u></td> <td style="text-align: center;">2</td> <td></td> <td style="text-align: center;">UPL</td> </tr> <tr> <td>3. <u>Polygonum aviculare</u></td> <td style="text-align: center;">20</td> <td style="text-align: center;">X</td> <td style="text-align: center;">FACW</td> </tr> <tr> <td>4. <u>Lythrum hyssopifolia</u></td> <td style="text-align: center;">2</td> <td></td> <td style="text-align: center;">OBL</td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>7. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="3"></td> <td align="right">30 = Total Cover</td> </tr> </table> <p><u>Woody Vine Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <tr> <td>1. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>2. _____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td colspan="3"></td> <td align="right">_____ = Total Cover</td> </tr> </table> <p>% Bare Ground in Herb Stratum <u>70</u> % Cover of Biotic Crust _____</p>					1. _____	_____	_____	_____	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____				_____ = Total Cover	1. _____	_____	_____	_____	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	5. _____	_____	_____	_____				_____ = Total Cover	1. <u>Dittrichia graveolens</u>	6	X	UPL	2. <u>Acmispon americanus var. americanus</u>	2		UPL	3. <u>Polygonum aviculare</u>	20	X	FACW	4. <u>Lythrum hyssopifolia</u>	2		OBL	5. _____				6. _____				7. _____				8. _____							30 = Total Cover	1. _____	_____	_____	_____	2. _____	_____	_____	_____				_____ = Total Cover	<p>Dominance Test worksheet:</p> Number of Dominant Species That Are OBL, FACW or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW or FAC: <u>50</u> (AB)
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<p>Hydrophytic Vegetation Indicators:</p> <input type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0' <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	<p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>																																																																																																
<p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Remarks: Dominated by hydrophytic vegetation.</p>																																																																																																

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	LOC ²		
0-12	10YR2/2	100					Gravelly loam	

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

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

<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR 13)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (AI 1)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Mucky Mineral (SI)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Vernal Pools (F9)	

³Indicators 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:

No redoximorphic features. Non-hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B1 1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes No

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

Remarks:

Surface runoff only. No standing water.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: 39th Avenue Reservoir Replacement City/County: Oakland Sampling Date: 7/11/12
 Applicant/Owner: East Bay Municipal Utilities District State: CA Sampling Point: 3
 Investigator(s): Hope Kingma & Christy Owens Section, Township, Range: San Antonio
 Landform (hillslope, terrace, etc.): level ground Local relief (concave, convex, none): None. Slope (%) 0
 Subregion (LRR): California Lat: 37°47'40.43"N Long: 122°11'18.7"W Datum: NAD83
 Soil Map Unit Name: Xerorthents-Los Osos Complex NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks:			
Upland sample point			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute Dominant Indicator % Cover Species? Status			Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW or FAC: <u>1</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW or FAC: <u>33</u> (A/B)	
4. _____	_____	_____	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
1. _____	_____	_____	_____ = Total Cover	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
Herb Stratum (Plot size: _____)				UPL species _____ x 5 = _____	
1. <u>Acmispon americanus var. americanus</u>	<u>30</u>	<u>X</u>	<u>UPL</u>	Column Totals: _____ (A) _____ (B)	
2. <u>Dittrichia graveolens</u>	<u>25</u>	<u>X</u>	<u>UPL</u>	Prevalence Index = B/A = _____	
3. <u>Polygonum aviculare</u>	<u>30</u>	<u>X</u>	<u>FACW</u>		
4. <u>Helminthotheca echioides</u>	<u>5</u>		<u>FACU</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____	_____	_____	_____	<input type="checkbox"/> Dominance Test is >50%	
2. _____	_____	_____	_____ = Total Cover	<input type="checkbox"/> Prevalence Index is: ≤3.0 ¹	
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
Remarks:				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:
 Does not meet hydrophytic vegetation criterion.

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	LOC ²		
0-12	10YR3/2	100					Gravelly loam	

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A1 1) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p> <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9) </p>	<p>Indicators for Problematic Hydric SoilS3:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR 13) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if present): Type: _____ Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks:

 No redoximorphic features observed, non-hydric soil.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p>		
<p>Primary Indicators (minimum of one required: check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B1 1) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p>Secondary Indicators (2 or more required)</p> <input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

<p>Field Observations:</p> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

 No evidence of wetland hydrology observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: 39th Avenue Reservoir Replacement City/County: Oakland Sampling Date: 7/11/12

Applicant/Owner: East Bay Municipal Utilities District State: CA Sampling Point: 4

Investigator(s): Hope Kingma & Christy Owens Section, Township, Range: San Antonio

Landform (hillslope, terrace, etc.): level ground Local relief (concave, convex, none): None Slope (%) 0

Subregion (LRR): California Lat: 37°47'40.43"N Long: 122°11'18.7"W Datum: NAD83

Soil Map Unit Name: Xerorthents-Los Osos Complex NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks:

Evidence of prolonged inundation in topographic low.

VEGETATION - Use scientific names of plants.

<p><u>Tree Stratum</u> (Plot size: _____)</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p align="right">_____ = Total Cover</p> <p><u>Sapling/Shrub Stratum</u> (Plot size: _____)</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p align="right">_____ = Total Cover</p> <p><u>Herb Stratum</u> (Plot size: _____)</p> <table border="0"> <tr> <td>1. <u>Typha angustifolia</u></td> <td>7</td> <td>X</td> <td>OBL</td> </tr> <tr> <td>2. <u>Lythrum hyssopifolium</u></td> <td>3</td> <td>X</td> <td>OBL</td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>7. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8. _____</td> <td></td> <td></td> <td></td> </tr> </table> <p align="right">10 = Total Cover</p> <p><u>Woody Vine Stratum</u> (Plot size: _____)</p> <p>1. _____</p> <p>2. _____</p> <p align="right">_____ = Total Cover</p> <p>% Bare Ground in Herb Stratum <u>90</u> % Cover of Biotic Crust _____</p>	1. <u>Typha angustifolia</u>	7	X	OBL	2. <u>Lythrum hyssopifolium</u>	3	X	OBL	3. _____				4. _____				5. _____				6. _____				7. _____				8. _____				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW or FAC: <u>2</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>2</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW or FAC: <u>100</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <p>Total % Cover of: _____ Multiply by: _____</p> <p>OBL species _____ x 1 = _____</p> <p>FACW species _____ x 2 = _____</p> <p>FAC species _____ x 3 = _____</p> <p>FACU species _____ x 4 = _____</p> <p>UPL species _____ x 5 = _____</p> <p>Column Totals: _____ (A) _____ (B)</p> <p>Prevalence Index: B/A = _____</p> <p>Hydrophytic Vegetation Indicators:</p> <p><input checked="" type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Index is <=3.0'</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
1. <u>Typha angustifolia</u>	7	X	OBL																														
2. <u>Lythrum hyssopifolium</u>	3	X	OBL																														
3. _____																																	
4. _____																																	
5. _____																																	
6. _____																																	
7. _____																																	
8. _____																																	

Remarks:

Majority of feature is unvegetated (<5%) thus mapped as Other Waters. Sample point was dominated by hydrophytic vegetation.

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	LOC ²		
0-12	10YR2/2	95	7.5R4/4	5	C	M	Gravelly loam	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 SoilS3:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR 13)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators 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:

5% of redoximorphic features observed, hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

Vegetation suppression due to prolonged inundation observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: 39th Avenue Reservoir Replacement City/County: Oakland Sampling Date: 7/11/12
 Applicant/Owner: East Bay Municipal Utilities District State: CA Sampling Point: 5
 Investigator(s): Hope Kingma & Christy Owens Section, Township, Range: San Antonio
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%) 2
 Subregion (LRR): California Lat: 37°47'40.43"N Long: 122°11'18.7"W Datum: NAD83
 Soil Map Unit Name: Xerorthents-Los Osos Complex NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks:
 Vegetated swale. Does not meet the hydrophytic vegetation criterion.

VEGETATION - Use scientific names of plants.

<p>Tree Stratum (Plot size: <u>1 sq meter</u>)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;">Species</th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Indicator</th> <th style="width:20%;">Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Sequoia sempervirens</u></td> <td align="center">30</td> <td align="center">X</td> <td align="center">UPL</td> </tr> <tr> <td>2. <u>Quercus agrifolia</u></td> <td align="center">5</td> <td></td> <td align="center">UPL</td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2"></td> <td align="right">35</td> <td>= Total Cover</td> </tr> </tbody> </table> <p>Sapling/Shrub Stratum (Plot size: <u>1 sq meter</u>)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2"></td><td></td><td>= Total Cover</td></tr> </tbody> </table> <p>Herb Stratum (Plot size: <u>1 sq meter</u>)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;">Species</th> <th style="width:10%;">Absolute % Cover</th> <th style="width:10%;">Dominant Indicator</th> <th style="width:20%;">Status</th> </tr> </thead> <tbody> <tr> <td>1. <u>Polygonum aviculare</u></td> <td align="center">25</td> <td align="center">X</td> <td align="center">FACW</td> </tr> <tr> <td>2. <u>Helminthotheca echioides</u></td> <td align="center">10</td> <td align="center">X</td> <td align="center">FACU</td> </tr> <tr> <td>3. <u>Lactuca saligna</u></td> <td align="center">5</td> <td></td> <td align="center">UPL</td> </tr> <tr> <td>4. <u>Lythrum hyssopifolia</u></td> <td align="center">5</td> <td></td> <td align="center">OBL</td> </tr> <tr> <td>5. <u>Chamaesyce prostrata</u></td> <td align="center">5</td> <td></td> <td align="center">FACU</td> </tr> <tr> <td>6. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>7. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2"></td> <td align="right">50</td> <td>= Total Cover</td> </tr> </tbody> </table> <p>Woody Vine Stratum (Plot size: _____)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2"></td><td></td><td>= Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>50</u> % Cover of Biotic Crust _____</p>	Species	Absolute % Cover	Dominant Indicator	Status	1. <u>Sequoia sempervirens</u>	30	X	UPL	2. <u>Quercus agrifolia</u>	5		UPL	3. _____				4. _____						35	= Total Cover	1. _____				2. _____				3. _____				4. _____				5. _____							= Total Cover	Species	Absolute % Cover	Dominant Indicator	Status	1. <u>Polygonum aviculare</u>	25	X	FACW	2. <u>Helminthotheca echioides</u>	10	X	FACU	3. <u>Lactuca saligna</u>	5		UPL	4. <u>Lythrum hyssopifolia</u>	5		OBL	5. <u>Chamaesyce prostrata</u>	5		FACU	6. _____				7. _____				8. _____						50	= Total Cover	1. _____				2. _____							= Total Cover	<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW or FAC: <u>1</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>3</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW or FAC: <u>33</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr> <td>OBL species <u>5</u></td> <td>x 1 =</td> <td><u>5</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 =</td> <td><u>50</u></td> </tr> <tr> <td>FAC species _____</td> <td>x 3 =</td> <td>_____</td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 =</td> <td><u>60</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 =</td> <td><u>25</u></td> </tr> <tr> <td>Column Totals: <u>50</u> (A)</td> <td></td> <td><u>140</u> (B)</td> </tr> </tbody> </table> <p align="center">Prevalence Index = B/A = <u>2.8</u></p> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Index is ≤3.0'</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? 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Remarks:
 Does not meet hydrophytic vegetation criterion.

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	LOC ²		
0-12	10YR2/1	95	5YR4/6	5	C	M		Gravelly loam/mixed fill

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

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

<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (I-RR 13)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A1 1)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Mucky Mineral (SI)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Vernal Pools (F9)	

³Indicators 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:

5% redoximorphic features observed.

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B1 1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes No Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

No evidence of wetland hydrology present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: 39th Avenue Reservoir Replacement City/County: Oakland Sampling Date: 7/11/12

Applicant/Owner: East Bay Municipal Utilities District State: CA Sampling Point: 6

Investigator(s): Hope Kingma & Christy Owens Section, Township, Range: San Antonio

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

Subregion (LRR): California Lat: 37°47'40.43"N Long: 122°11'18.7"W Datum: NAD83

Soil Map Unit Name: Xerorthents-Los Osos Complex NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>				
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>				

Remarks:

Upland sample point

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>1 sq meter</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Sequoia sempervirens</u>	<u>5</u>	<u>X</u>	<u>UPL</u>	Number of Dominant Species That Are OBL, FACW or FAC: <u>0</u>	(A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u>	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW or FAC: <u>0</u>	(A/B)
4. _____	_____	_____	_____		
			<u>5</u> = Total Cover		
Sampling/Shrub Stratum (Plot size: <u>1 sq meter</u>)				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of: _____	Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____	
3. _____	_____	_____	_____	FACW species _____ x 2 = _____	
4. _____	_____	_____	_____	FAC species _____ x 3 = _____	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
			_____ = Total Cover	UPL species _____ x 5 = _____	
				Column Totals: _____ (A) _____ (B)	
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>1 sq meter</u>)				Hydrophytic Vegetation Indicators:	
1. <u>Stellaria media</u>	<u>30</u>	<u>X</u>	<u>FACU</u>	<input type="checkbox"/> Dominance Test is >50%	
2. <u>Geranium dissectum</u>	<u>3</u>	_____	<u>UPL</u>	<input type="checkbox"/> Prevalence Index is: ≤3.0 ¹	
3. <u>Melica imperfecta</u>	<u>10</u>	<u>X</u>	<u>UPL</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
4. <u>Cirsium vulgare</u>	<u>2</u>	_____	<u>FACU</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
5. <u>Claytonia perfoliata</u>	<u>1</u>	_____	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
			<u>46</u> = Total Cover		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
			_____ = Total Cover		
% Bare Ground in Herb Stratum <u>51</u>		% Cover of Biotic Crust _____			

Remarks:

Bare ground covered by redwood duff (leaf litter). No hydrophytic vegetation present.

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	LOC ²		
0-12	10YR3/2	100					Gravelly loam	

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A1 1) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p>Indicators for Problematic Hydric SoilS3:</p> <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR 13) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators 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:
 No redoximorphic features observed, non-hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

<p><u>Primary Indicators (minimum of one required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B1 1) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<p><u>Secondary Indicators (2 or more required)</u></p> <input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:
 No evidence of surface hydrology observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: 39th Avenue Reservoir Replacement City/County: Oakland Sampling Date: 7/11/12
 Applicant/Owner: East Bay Municipal Utilities District State: CA Sampling Point: 7
 Investigator(s): Hope Kingma & Christy Owens Section, Township, Range: San Antonio
 Landform (hillslope, terrace, etc.): level ground Local relief (concave, convex, none): none Slope (%) 0
 Subregion (LRR): California Lat: 37°47'40.43"N Long: 122°11'18.7"W Datum: NAD83
 Soil Map Unit Name: Xerorthents-Los Osos Complex NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: Upland sample point taken at the toe of the berm.			

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>1 sq meter</u>)	Absolute Dominant Indicator % Cover	Species?	Status	Dominance Test worksheet:
1. <u>Cotoneaster lacteus</u>	<u>15</u>	<u>X</u>	<u>UPL</u>	Number of Dominant Species That Are OBL, FACW or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size: <u>1 sq meter</u>)				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Herb Stratum (Plot size: <u>1 sq meter</u>)				UPL species _____ x 5 = _____
1. <u>Rubus armeniacus</u>	<u>5</u>	_____	<u>FACU</u>	Column Totals: _____ (A) _____ (B)
2. <u>Hedera helix</u>	<u>95</u>	<u>X</u>	<u>UPL</u>	Prevalence Index B/A = _____
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	<input type="checkbox"/> Dominance Test is >50%
2. _____	_____	_____	_____	<input type="checkbox"/> Prevalence Index is ≤3.0'
_____ = Total Cover				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Remarks: Dominated by upland species. Does not meet the hydrophytic vegetation criterion.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	LOC ²		
0-12	10YR3/3	100					loam	with gravel

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A1 1) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (I-RR 13) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 No redoximorphic features observed, non-hydric soil.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B1 1) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 No surface hydrology evident.

-  Pump Station
-  Area of Impacts: "Isolated" Waters (150 Sq. Ft., 0.0034 Acre)
-  Potential "Isolated" Other Waters (442 Sq. Ft., 0.010 Acre)
-  Potential "Isolated" Seasonal Wetlands (152 Sq. Ft., 0.004 Acre)
-  Pipeline Trench



Please note that while M&A can estimate Corps regulated areas, only the Corps can confirm the extent of area falling under their jurisdiction. Thus, it is most important to have a confirmed map from the Corps which can be relied upon for project planning purposes.

Monk & Associates
 Environmental Consultants
 1136 Saranap Avenue, Suite Q
 Walnut Creek, California 94595
 (925) 947-4867

0 25 50 100 150 200 Feet

Figure X. Preliminary Assessment Area of Impacts to "Isolated" Other Waters & "Isolated" Wetlands, 39th Avenue Reservoir Replacement Project
 4290 Maybelle Avenue, Oakland, California


 © 2012 Microsoft Corporation
 Map Preparation Date: July 27, 2012
 Aerial Photograph Source: Bing Maps



"Isolated" Other Waters	Sq. Ft.	Acres
IOW 1	422	0.010

"Isolated" Seasonal Waters	Sq. Ft.	Acres
ISW 1	66	0.0015
ISW 2	62	0.0014
ISW 3	24	0.0006

Legend

- Data Point
- Pump Station
- Potential "Isolated" Other Waters (442 Sq. Ft., 0.010 Acre)
- Potential "Isolated" Seasonal Wetlands (152 Sq. Ft., 0.004 Acre)
- Project Area

Please note that while M&A can estimate Corps regulated areas, only the Corps can confirm the extent of area falling under their jurisdiction. Thus, it is most important to have a confirmed map from the Corps which can be relied upon for project planning purposes.