APPENDIX H

2017 Dry Season Fairy Shrimp Sampling Results

DUDEK

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August 17, 2017 9420-03

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: ***2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California***

Dear Recovery Permit Coordinator:

The 2017 dry season survey for the presence or absence of two federally listed endangered vernal pool branchiopod species, Riverside fairy shrimp (*Streptocephalus woottoni*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*), was conducted on June 9, 2017. Dudek biologist Paul Lemons (TE-051248-5) conducted the soil collection according to the Survey Guidelines for the Listed Large Branchiopods (USFWS 2015). This report summarizes the results of the 2017 dry season survey in order to fulfill the report requirements in accordance with the Section 10(a)(1)(A) Recovery Permit for the Pure Water San Diego Program North City Project, located in San Diego County, California.

Soil samples from a total of 30 basins were collected during the 2017 dry season survey. Focused surveys were conducted during the 2016/17 wet season for 19 of the 30 basins. 11 basins were not previously surveyed.

The 2017 dry season soil collection was performed by Dudek biologist Paul Lemons (Permit # TE051248-5) with assistance from Dudek biologist Jeff Priest. Soil samples were collected on June 9, 2017. The samples were then submitted to, and later evaluated and cysts cultured by, biologist Greg Mason (Alden Environmental, Inc.). The survey focused on the determination of the presence/absence of two federally listed endangered vernal pool branchiopod species, Riverside fairy shrimp (*Streptocephalus woottoni*) and San Diego fairy shrimp (*Branchinecta sandiegonensis*), and was conducted according to the *Survey Guidelines for the Listed Large Branchiopods* (USFWS, 2015).

PROJECT LOCATION AND EXISTING CONDITIONS

Proposed North City Project pipelines extend through the cities of San Diego, Santee, and the community of Lakeside in unincorporated San Diego County, in addition to federal lands within MCAS Miramar (Figure 1, Regional Map). The Project site occupies portions of Township 14

South, Range 1 East, projected Sections 30 and 31; Township 14 South, Range 1 West, projected Sections 25 and 36; Township 14 South, Range 2 West, projected Sections 32, and 33; Township 15 South, Range 1 East, projected Sections 6 and 18; Township 15 South, Range 1 West, projected Sections 1, 23, and 30; Township 15 South, Range 2 West, projected Sections 6, 25, 29, 30, 31, 32, 33, 35, and 36; Township 15 South, Range 3 West, projected Sections 9, 10, 11, 16, 17, 20, 25, 26, and 28; Township 16 South, Range 2 West, projected Sections 1, 2, 3, and 4; and Township 16 South, Range 3 West, projected Section 9 on the San Vicente Reservoir, El Cajon, La Mesa, Poway, La Jolla, and Del Mar U.S. Geological Survey 7.5 minute quadrangle maps (Figure 2, Vicinity Map).

Elevations range from about 94 feet amsl in the southwestern portion of the Project site to approximately 688 feet amsl.

Soils within the Project site consist of acid igneous rock land; Altamont clay; Carlsbad-Urban Land complex, Chesterton fine sandy loam; Chesterton-Urban Land complex; Cieneba rocky and very rocky coarse sandy loam, Cieneba-Fallbrook rocky sandy loam; Diablo clay; Diablo-Olivenhain complex; Diablo-Urban land complex; Fallbrook sandy loam; Fallbrook-Vista sandy loam; Friant rocky fine sandy loam; Gaviota fine sandy loam; gravel pits; Huerhuero loam; metamorphic rock land; Olivenhain cobbly loam; Ramona sandy loam; Redding cobbly and gravelly loam; Redding-Urban land complex; riverwash; Salinas clay loam; stony land; terrace escarpments; Tujunga sand; and Visalia sandy loam (SanGIS 2016).

VEGETATION COMMUNITIES, DEPRESSIONS, AND LAND COVER TYPES

A total of 28 vegetation communities and/or land cover types were identified within a 500-foot buffer of the Miramar Reservoir Alternative study area, and 26 vegetation communities and/or land cover types were observed within a 500-foot buffer of the San Vicente Pipeline Alternative study area. Dominate vegetation community/land cover categories within the study areas include disturbed and developed areas, scrub and chaparral, riparian and bottomlands, woodlands, and grasslands.

Suitable and potentially suitable habitat (i.e., ephemerally wet/ponded basins) for vernal pool branchiopods was identified on site and consists primarily of road rut (man-made) depressions, lacking vegetation, located immediately adjacent to roads and driveway access areas along the proposed project alignments; however, one basin (PWP 8) appears to be a naturally occurring pool adjacent to the Metro Biosolids Center (located north of State Route 52 (SR-52), adjacent to the Miramar Landfill). All of the basins surveyed are considered potentially suitable habitat for vernal pool branchiopods. All 19 basins surveyed were found in areas mapped as disturbed habitat.

Disturbed habitats are areas that have been physically disturbed and are no longer recognizable as native or naturalized vegetation associations (Oberbauer et al. 2008). These areas may continue to retail soil substrate. If vegetation is present, it is almost entirely composed of non-native vegetation, such as ornamentals or ruderal exotic species. Examples of these areas may include graded landscapes or areas, graded firebreaks, graded construction pads, construction staging areas, off-highway vehicle (OHV) trails, areas repeatedly cleared for fuel management, or repeatedly used areas that prevent revegetation (e.g., parking lots, trails that have persisted for years). On site, the dirt roads, dirt trails, and OHV areas are mapped as disturbed habitat.

PREVIOUS BRANCHIOPOD STUDIES

Dudek conducted presence/absence surveys for vernal pool branchiopods within 19 of the 30 basins discussed in this report during the 2016/17 wet season. The 19 basins surveyed during the 2016/17 wet season include PWP1 through PWP19. To Dudek's knowledge, no previous protocol-level surveys have been conducted within the additional 11 basins (VP5, VP8, VP10, VP11, VP12, VP15, VP17, VP18, VP19, VP26, and VP27) surveyed during the 2017 dry season and discussed in this report.

A general habitat assessment to evaluate the potential for vernal pool branchiopods within the survey area was conducted by Dudek biologist Brock Ortega in November 2016 prior to conducting protocol-level surveys.

SURVEY METHODS

Thirteen of the 30 basins were between 25 and 235 square meters, therefore 25 samples were collected from the lowest topographic areas of each of these basins. The remaining seventeen depressions were under 25 square meters, therefore 10 samples were collected from the lowest topographic areas of each of these basins. Small (6 inch) hand spades were used to excavate each sample (approximately 100ml each) of soil from the top 1-3 centimeters of soil. Data sheets were completed for each basin that was surveyed (Appendix A). Selected photographs of basins sampled are attached to this report as Appendix B.

Immediately after sample collection, each soil sample was carefully placed into plastic bags and labeled according to basin ID. Soil samples collected on June 9, 2017 from each basin were immediately submitted to Mr. Greg Mason of Alden Environmental, Inc. that same day. Soil samples were then processed by Mr. Mason for examination in the laboratory using the methods described in the dry season report by Alden Environmental, Inc. (Appendix C).

SURVEY RESULTS

Basin Descriptions

A total of 30 basins were surveyed during the 2017 dry survey season. The basins within the study area are distributed in topographically flat areas primarily along Eastgate Mall Road in the City of San Diego and Moreno Avenue in Lakeside, CA (Figures 3A-3G). Seventeen (17) of the basins are considered road ruts. Road ruts are depressions that are typically formed by vehicular traffic within or immediately adjacent to roadways, generally lack aquatic vegetation, and are heavily disturbed by vehicular traffic moderately to highly disturbed, showing evidence of current roadside disturbance (i.e., parked vehicles, trailers, tire tracks, trash). Thirteen basins (PWP 1, PWP 8, VP5, VP8, VP10, VP11, VP12, VP15, VP17, VP18, VP19, VP26, and VP27) are considered vernal pools. Vernal pools are depressions that retain sufficient water level, support vernal pool indicator plant species, and likely support vernal pool branchiopods.

Fairy Shrimp Presence/Absence

Results of the dry sample analysis yielded the presence of cysts from the fairy shrimp genus *Branchinecta* in 14 basins, including PWP 3, PWP 4, PWP 5, PWP 8, PWP 9, PWP 11, PWP 12, PWP 13, PWP 14, PWP 15, PWP 16, PWP 17, VP8, and VP11. All cysts collected from these basins were attempted to be cultured and raised to maturity to make a species-level identification. This attempt was successful in 12 of the 14 basins where cysts were collected. Only basins PWP 13 and PWP 16 failed to produce hatched shrimp, therefore, the cysts from these two basins could only be positively identified to genus level (i.e., *Branchinecta*). All shrimp that were successfully raised to maturity were identified as versatile fairy shrimp (*Branchinecta lindahli*). No listed San Diego fairy shrimp or Riverside fairy shrimp were identified during this dry season survey effort. Detailed results of soil analysis and cyst culturing are included in the Alden Environmental Report (Appendix C).

All required data collection information per the survey guidelines (USFWS, 2015) was recorded and is included as Appendices A through C of this report.

I certify that the information presented in this survey report and attached exhibits fully and accurately represents my work. Please feel free to contact me at 760.942.5147 if you have any questions regarding the contents of this report.

Sincerely,

Paul Lemons
TE051248

Att: Figures 1–3G
Appendix A, Survey Data Form
Appendix B, Photo Exhibits
Appendix C, Dry Season Fairy Shrimp Sampling Results (Alden Environmental, Inc.)

cc: Brock Ortega, Dudek
Greg Mason, Alden Environmental, Inc.

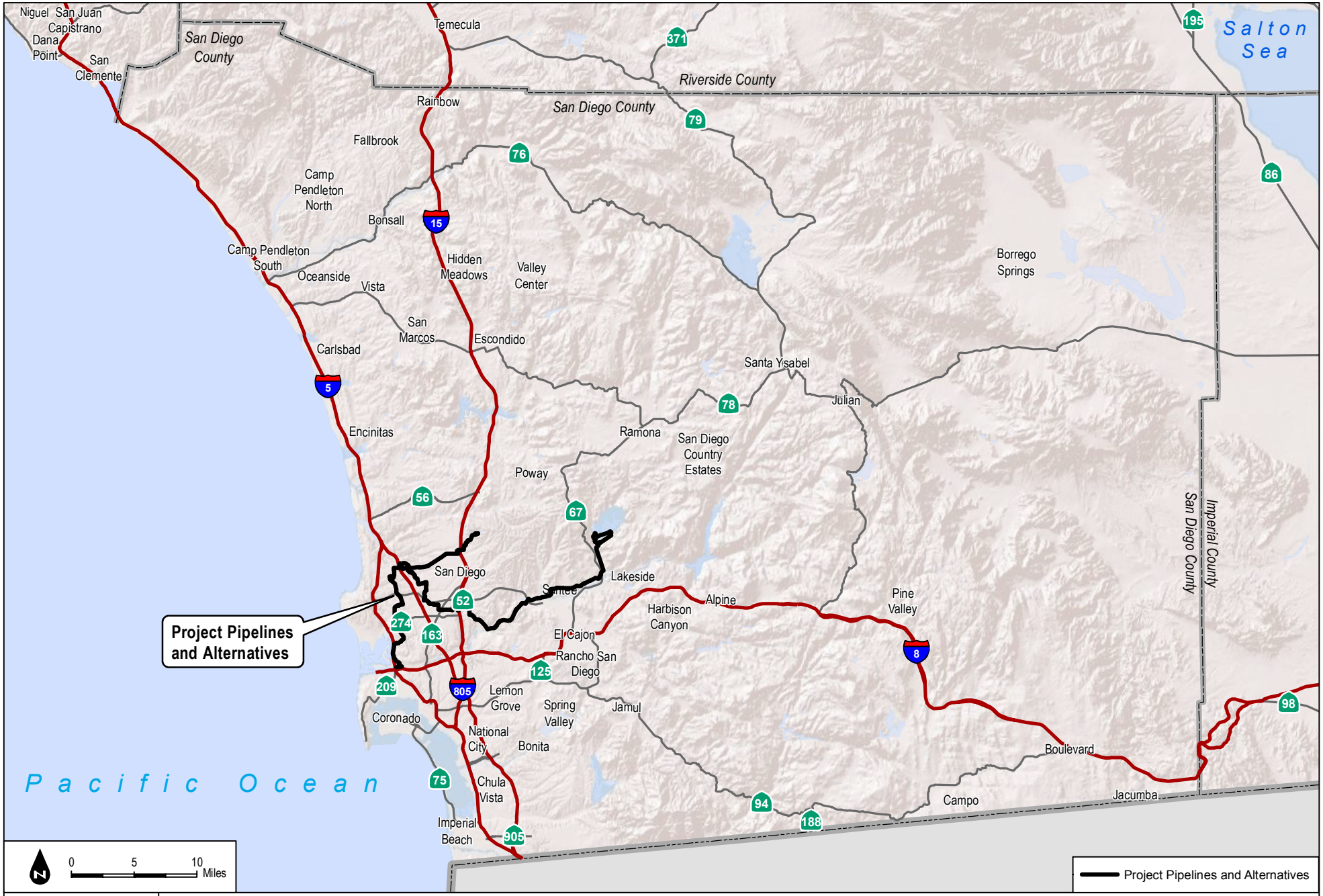
REFERENCES CITED

Bowman, R. H. 1973. *Soil Survey, San Diego Area, California, Part 1*. United States Department of Agriculture. 104 pp. + appendices.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California.* Nongame-Heritage Program. California Department of Fish and Game.

Oberbauer, Thomas, Meghan Kelley, and Jeremy Buegge. March 2008. *Draft Vegetation Communities of San Diego County.* Based on *Preliminary Descriptions of the Terrestrial Natural Communities of California*, Robert F. Holland, Ph.D., October 1986.

U.S. Fish and Wildlife Service (USFWS). 2015. *Survey Guidelines for the Listed Large Branchiopods*. Sacramento, California: U.S. Fish and Wildlife Service Sacramento Field Office. May 31.



SOURCE: City San Diego 2016; ESRI 2017

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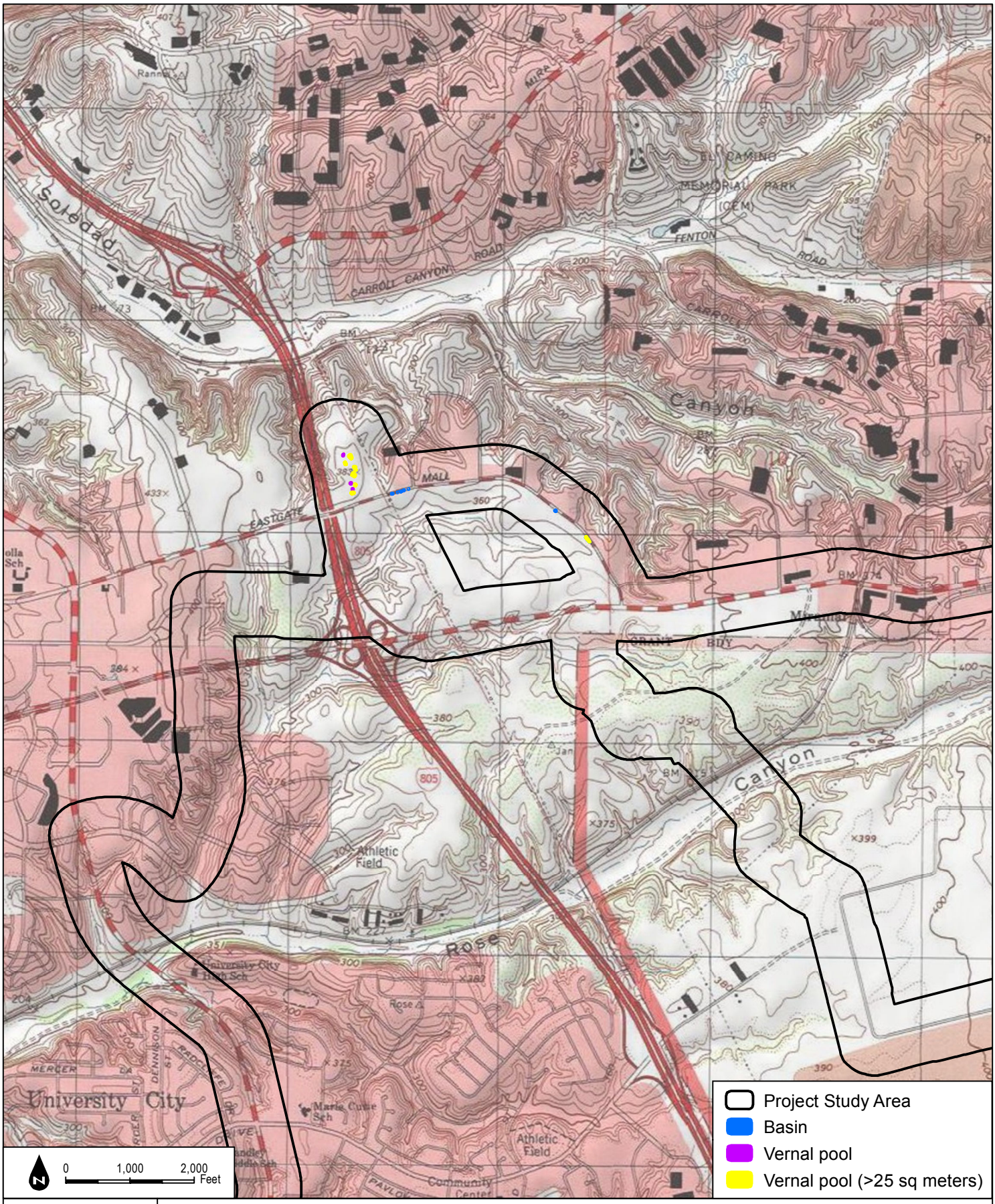
FIGURE 1

Regional Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California



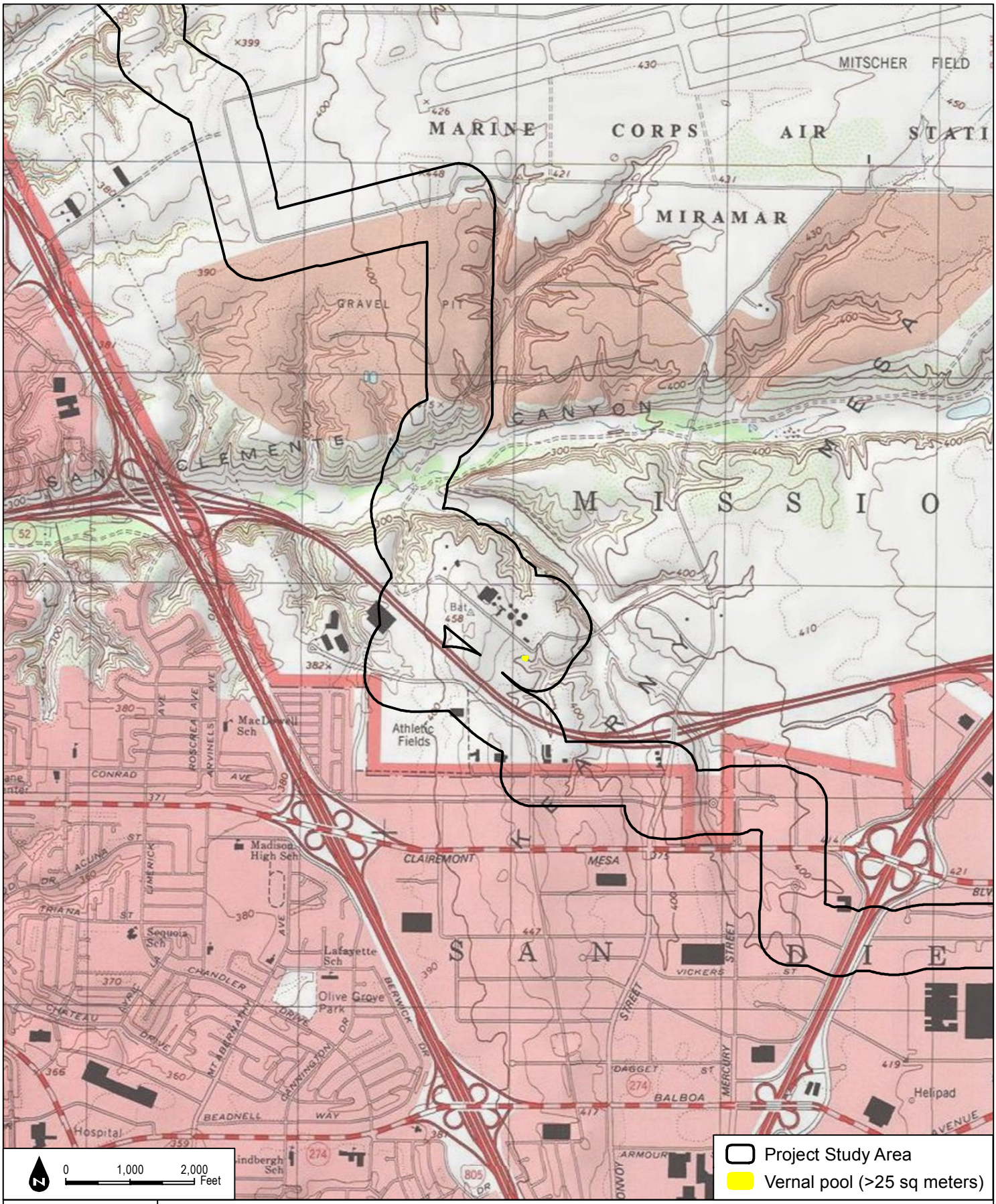
DUDEK

SOURCE: USGS 7.5-Minute Series El Cajon, San Vicente Reservoir Quadrangles.

FIGURE 2A

Vicinity Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California

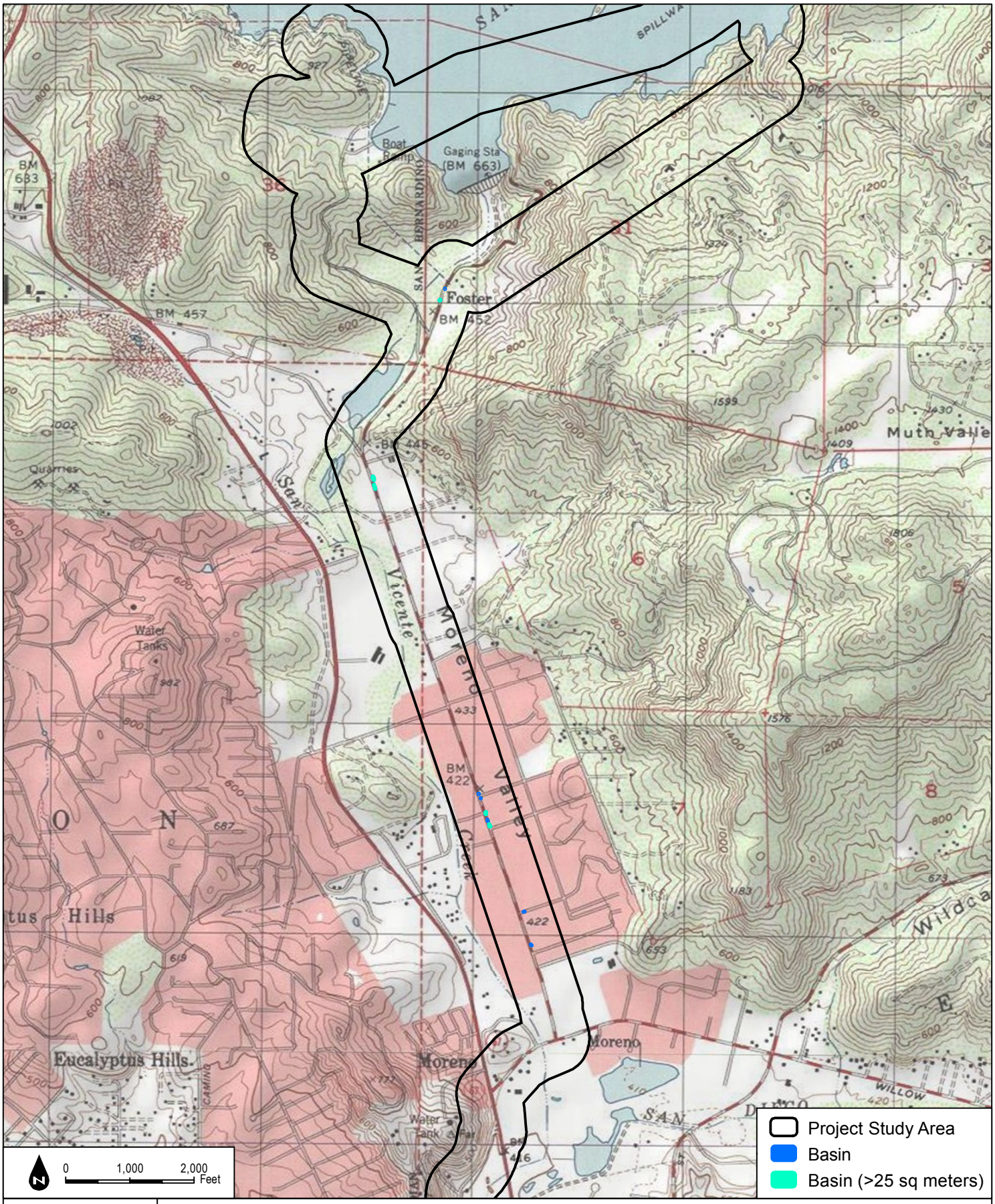


DUDEK

SOURCE: USGS 7.5-Minute Series El Cajon, San Vicente Reservoir Quadrangles.

FIGURE 2B
Vicinity Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California



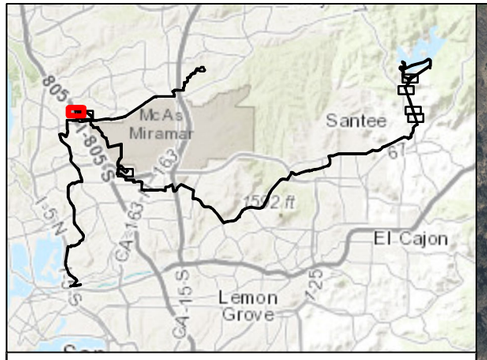
DUDEK

SOURCE: USGS 7.5-Minute Series El Cajon, San Vicente Reservoir Quadrangles.

FIGURE 2C

Vicinity Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California



LEGEND

- Project Study Area
- San Vicente Pure Water Pipeline (San Vicente Pipeline)
- North City Pure Water Pipeline and San Vicente Pure Water Pipelines
- Vernal Pool Study Area
- Vernal Pool Survey Areas
- Helix Vernal Pool Study Area

Survey Results
*** indicates pools >25 square meters**

- Basin with Branchinecta lindahli not present
- Basin with Branchinecta lindahli present
- Vernal pool with Branchinecta lindahli not present
- Vernal pool with Branchinecta lindahli present

0 250 500 Feet

SOURCE: SANDAG, 2016; SanGIS 2016

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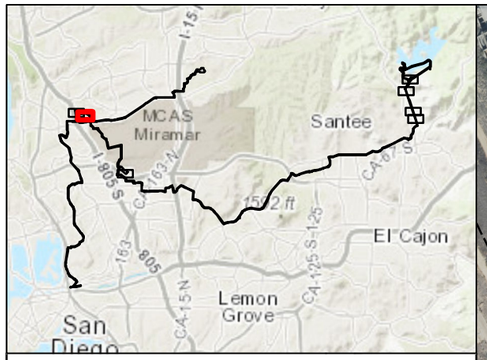
FIGURE 3A
Survey Results Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California

Date: 8/17/2017 - Last saved by: agoss - Path: T:\Projects\SAN\30108\MAPDOC\DUDEN\SurveyResult_EpochRange\FIG 3A Survey Results Map.mxd



LEGEND

- Project Study Area
- San Vicente Pure Water Pipeline (San Vicente Pipeline)
- North City Pure Water Pipeline and San Vicente Pure Water Pipelines
- Moreno Waste Water Forcemain and Brine Line (Morena Pipelines)
- Vernal Pool Study Area
- Vernal Pool Survey Areas
- Helix Vernal Pool Study Area

Survey Results
*** indicates pools >25 square meters**

- Basin with Branchinecta lindahli not present
- Basin with Branchinecta lindahli present
- Vernal pool with Branchinecta lindahli not present

PWP 1*
PWP 2
PWP 3
PWP 4
PWP 5
PWP 6
PWP 7

N

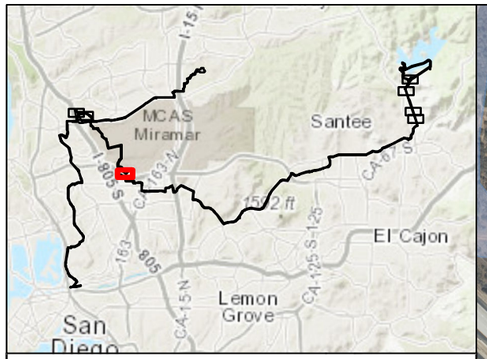
0 250 500 Feet

SOURCE: SANDAG, 2016; SanGIS 2016

DUDEK

FIGURE 3B
Survey Results Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California

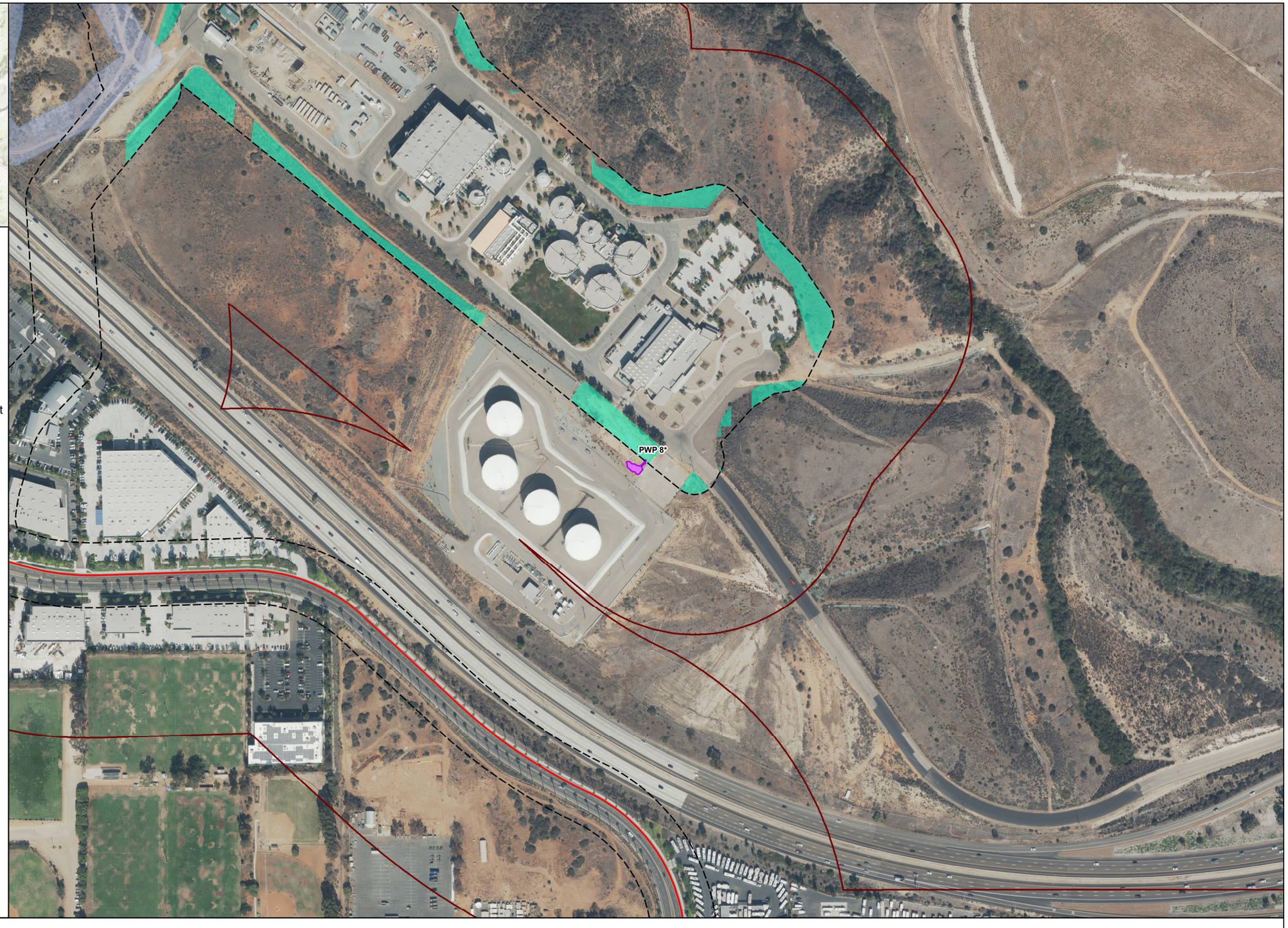


LEGEND

- Project Study Area
- San Vicente Pure Water Pipeline (San Vicente Pipeline)
- Vernal Pool Study Area
- Vernal Pool Survey Areas
- Helix Vernal Pool Study Area

Survey Results
*** indicates pools >25 square meters**

- Vernal pool with Branchinecta lindahli present



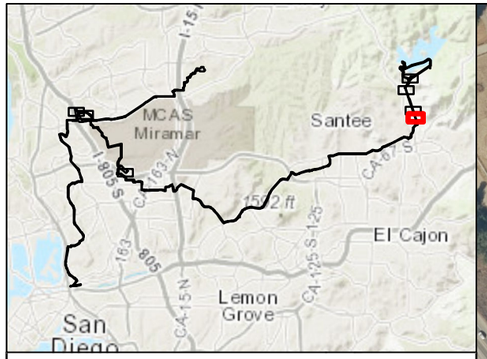
0 250 500 Feet

SOURCE: SANDAG, 2016; SanGIS 2016

DUDEK

FIGURE 3C
Survey Results Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California

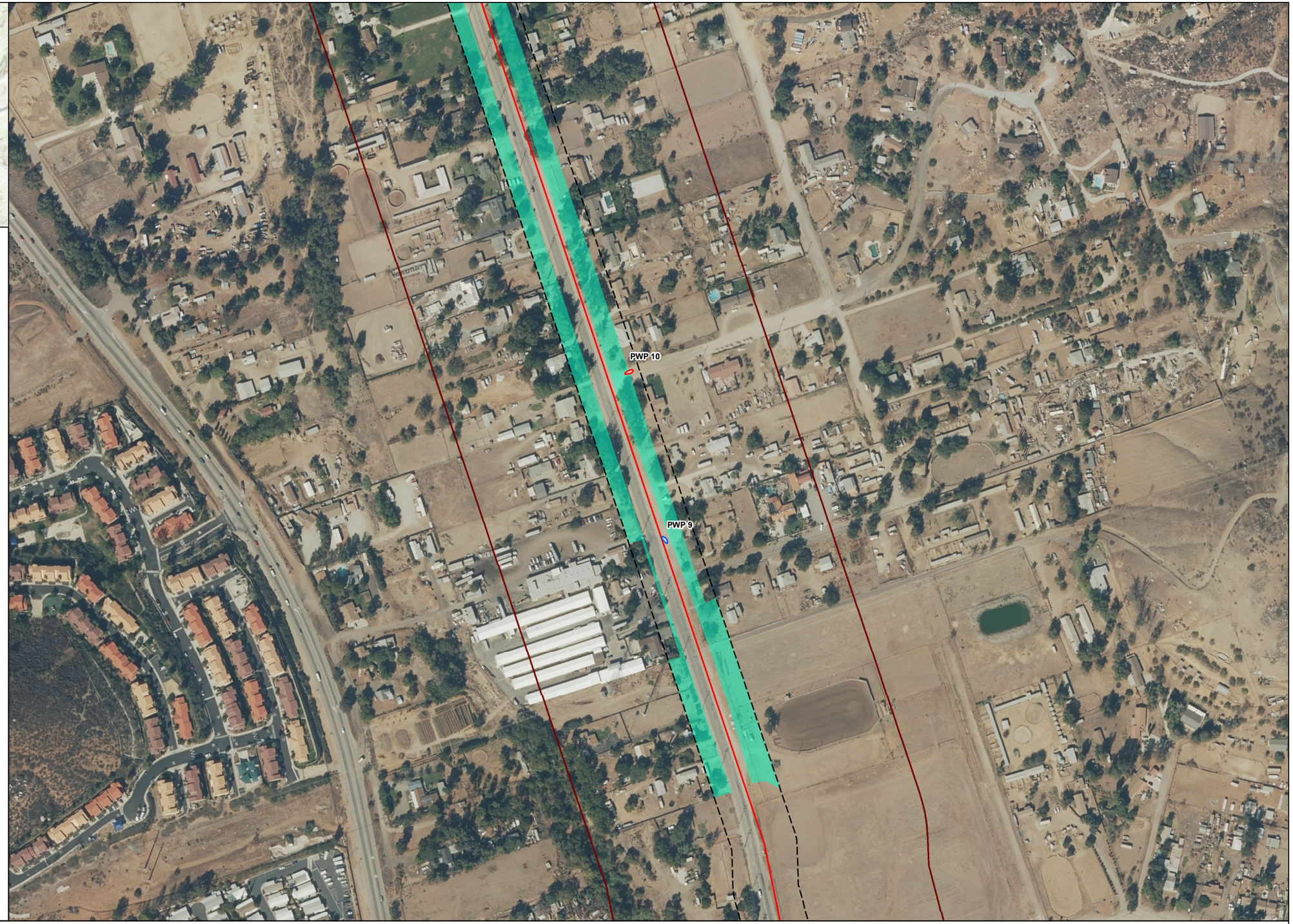


LEGEND

- Project Study Area
- San Vicente Pure Water Pipeline (San Vicente Pipeline)
- Vernal Pool Study Area
- Vernal Pool Survey Areas

Survey Results
*** indicates pools >25 square meters**

- Basin with Branchinecta lindahli not present
- Basin with Branchinecta lindahli present



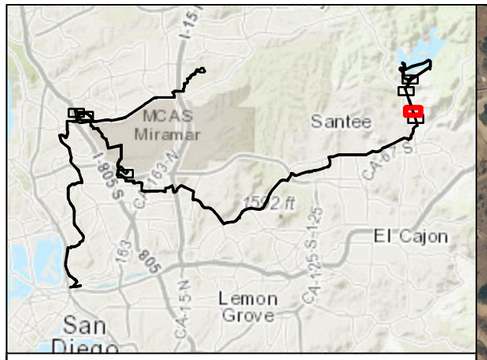
0 250 500 Feet

SOURCE: SANDAG, 2016; SanGIS 2016

DUDEK

FIGURE 3D
Survey Results Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California



LEGEND

- Project Study Area
- San Vicente Pure Water Pipeline (San Vicente Pipeline)
- Vernal Pool Study Area
- Vernal Pool Survey Areas

Survey Results
*** indicates pools >25 square meters**

- Basin with Branchinecta lindahli present
- Basin with Branchinecta spp.

PWP 15
PWP 14
PWP 13*
PWP 12
PWP 11*

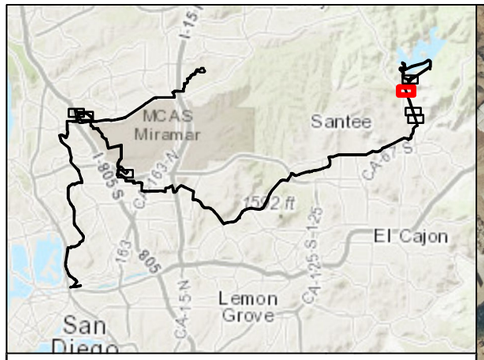
0 250 500 Feet

SOURCE: SANDAG, 2016; SanGIS 2016

DUDEK

FIGURE 3E
Survey Results Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California



LEGEND

- Project Study Area
- San Vicente Pure Water Pipeline (San Vicente Pipeline)
- Vernal Pool Study Area
- Vernal Pool Survey Areas

Survey Results
*** indicates pools >25 square meters**

- Basin with Branchinecta lindahli present
- Basin with Branchinecta spp.

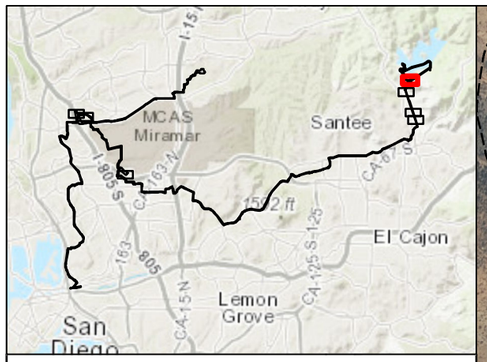
0 250 500 Feet

SOURCE: SANDAG, 2016; SanGIS 2016

DUDEK

FIGURE 3F
Survey Results Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California

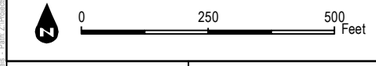


LEGEND

- Project Study Area
- San Vicente Pure Water Pipeline (San Vicente Pipeline)
- San Vicente Pure Water Pipeline - Tunnel Alternative
- San Vicente Pure Water Pipeline - In-Reservoir Alternative
- San Vicente Pure Water Pipeline - Marina Alternative
- Vernal Pool Study Area
- Vernal Pool Survey Areas

Survey Results
*** indicates pools >25 square meters**

- Basin with Branchinecta lindahli not present



SOURCE: SANDAG, 2016; SanGIS 2016

DUDEK

FIGURE 3G
Survey Results Map

2017 Dry Season Survey for Vernal Pool Branchiopods, City of San Diego Pure Water Project, San Diego County, California

APPENDIX A

Survey Data Form

Appendix 2. U.S. Fish and Wildlife Service – Data Sheet for Dry Season Sample Analysis for Listed Large Branchiopods

Project Information

Project Name: Pure Water San Diego
USFWS Project Number:
County: San Diego
Lat: See Report
Long: "

Quad: Several - See Report
Township: "
Range: "
Section: "

Biologist Information

Name of Person(2) Who Conducted the Following Tasks and Permit Number(s):

Soil Collection: Paul Lemons TE051248-5
Soil Processing: Greg Mason TE58862A-0
Soil Analysis/Cysts ID: Greg Mason "
Soil Collection Date: June 9, 2017

Pool/ Habitat/ Basin No.	Invertebrates Present (X)															Comments
	Insect Exo-Skeletons	Micro-Turbellaria Cysts	Cladocera Ephippia	Ostracods Live/Cysts/ Carapaces	Copepods Live/Cysts	Number of Large Branchiopod Cysts: *Branchinecta* sp.	*Lepidurus packardi*	*Streptocephalus wootoni*	*Linderiella occidentalis*	*Lynceus brachyurus*	*Cyzicus californicus*	Hydracarina Live	Nematoda	Collembola	Other Species	
PWP 1																
2																
3						X- 45										BRL1
4						X- 7										BRL1
5						X- 5										BRL1
6																
7																
8						X- 4122										BRL1
9						X- 2										BRL1
10																
11						X- 358										BRL1
12						X- 10										BRL1
13						X- 73										Br. spp
14						X- 1175										BRL1
15						X- 108										BRL1
16						X- 11										Br. spp
17						X- 30										BRL1
18																
19																
VP 5																
8						X - 40										BRL1
10																
11						X - 65										BRL1
12																
15																
17																
18																
19																
26																
29																

APPENDIX B

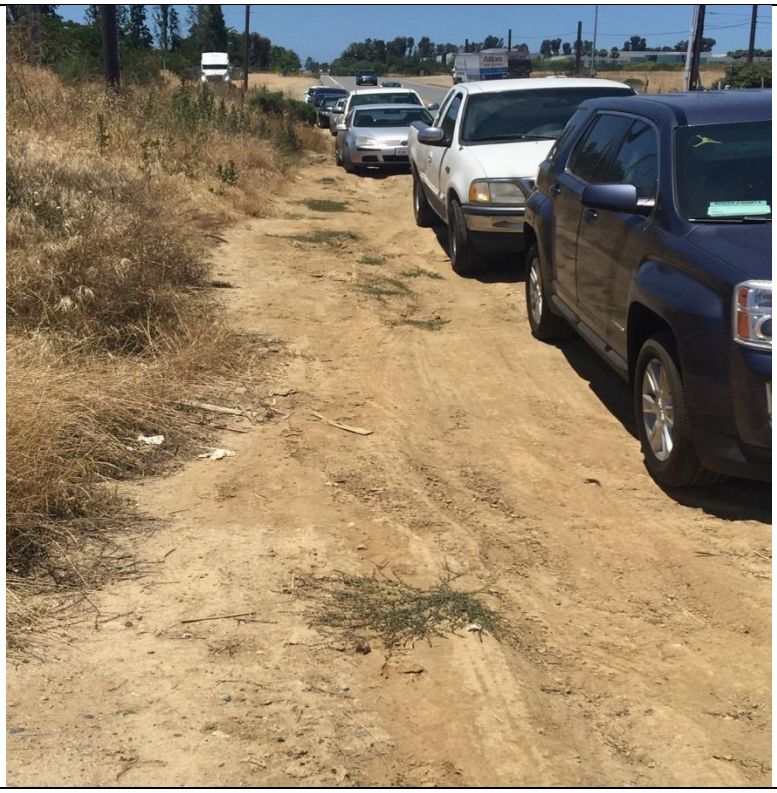
Photo Exhibits

APPENDIX B
Photo Exhibits

Overview photo of vernal pools VP5, VP8, VP10, VP11, VP12, VP15, VP17, VP18, VP19, VP26, and VP27

Photo of vernal pool PWP 1

Photo of road rut PWP 1



Overview photo of road ruts PWP 3 through PWP 7

Photo of vernal pool PWP 8

Overview photos of road ruts PWP 9 through PWP 19

APPENDIX C

Dry Season Fairy Shrimp Sampling Results

ALDEN ENVIRONMENTAL, INC
3245 University Ave, #1188 | San Diego, CA 92104 | **Phone/Fax:** 619.284.3815

July 23, 2017

Mr. Brock Ortega
Dudek
605 Third Street
Encinitas, CA 92024

Subject: Dry Season Fairy Shrimp Sampling Results

Dear Mr. Ortega:

This letter presents the results of dry season sampling conducted on soil samples collected from basins on the Pure Water site.

Methods

Dry Sampling

On Friday, June 9, 2017 Alden received soil samples collected from 30 basins on the Pure Water site. The soil was provided in bags labeled with the basin number. The collected soil from each basin was divided into100ml subsamples, based on the area of the pool and the amount of soil collected. Each sample was then hydrated and processed through a series of sieves to separate out fairy shrimp cysts that may be present. The sieves used were of 710-, 355-, and 212-µm pore size screens. The final sieve pore size is smaller than the target fairy shrimp genera (*Branchinecta* and *Streptocephalus*) average cyst diameter and therefore would retain cysts. The material remaining on the final sieve was next placed in a brine solution to help separate organic from inorganic material. The organic portion was then filtered through a standard coffee filter and allowed to dry. The dried material on the filters was then examined under a stereo dissecting scope to determine if cysts were present. Cyst surface characteristics were then used to identify cysts to genus, if present.

Hatching

Fairy shrimp cysts of the species *Branchinecta* collected during the dry sampling effort were hydrated by placing them into plastic containers, filled with approximately 525 ml of filtered, non-chlorinated drinking water. The coffee filters with the collected cysts were slowly opened over the container and gently shaken to allow the material to fall into the water. The sides of the filter were then rubbed against one another to release any additional material. Finally, a squirt bottle filled with filtered drinking water was used to spray any additional material from the filter into the container.

The containers were given a sample id numbers and placed on a table in a climate controlled room. Lighting in the room was provided by indirect sunlight as well as an overhead light that was kept on approximately 12 hours a day to help emulate spring season lighting conditions. An overhead fan also was kept on at a low level to provide for some air movement across the water surface in the sample containers.

The samples were checked daily to see if any fairy shrimp had emerged. Once nauplii were observed, feeding began. The hatched shrimp were fed a single drop of prepared food on a daily basis until they were collected. The food used was a mix of active brewer's yeast, sugar, powdered fish food, and water.

The hatched shrimp were allowed to continue under these conditions until they had reached maturity, as determined by reaching full size, antennal development (males) and brood pouch (females). Once mature, the fairy shrimp were collected for identification by pouring the material in each container through a small strainer. Collected shrimp were then placed into a dish of carbonated (soda) water to slowly asphyxiate the shrimp. Once dead, the collected shrimp were placed in a 27 x 57 mm (5 dram) clear glass vial, filled with 70% ethyl alcohol. The collected shrimp were then identified to the species level with the aid of a stereo dissecting scope.

Results

Dry Sampling

Of the 30 basins, 14 were found to contain cysts of the genus *Branchinecta* (Table 1). The cyst densities in these 14 basins ranged from 2 to 4,122 cysts per basin. No *Streptocephalus* cysts were recovered from any of the basins.

Hatching

Two rounds of hydration and rearing were conducted for the samples that were found to have cysts present. Following the first round, Lindahl's fairy shrimp were collected and identified in 8 basins (Table 2). Following the second round, Lindahl's fairy shrimp were collected from an additional 5 basins. Only 2 basins (PWP 13 and PWP 16) failed to produce hatched shrimp. No listed San Diego fairy shrimp were identified in either rearing round.

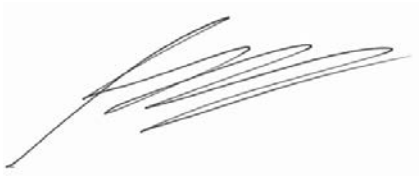
ALDEN ENVIRONMENTAL, INC
3245 University Ave, #1188 | San Diego, CA 92104 | **Phone/Fax:** 619.284.3815

Table 1 **Dry Season Fairy Shrimp Sampling Results**				
Basin	**Volume Collected (ml)**	**Number of Subsamples Processed**	**Fairy Shrimp Cysts Recovered**	
			Branchinecta	***Streptocephalus***
PWP1	2,500	25	0	0
PWP2	1,000	10	0	0
PWP3	1,000	10	45	0
PWP4	1,000	10	7	0
PWP5	1,000	10	5	0
PWP6	1,000	10	0	0
PWP7	1,000	10	0	0
PWP8	2,500	25	4,122	0
PWP9	1,000	10	2	0
PWP10	1,000	10	0	0
PWP11	2,500	25	358	0
PWP12	1,000	10	10	0
PWP13	2,500	25	73	0
PWP14	1,000	10	1,175	0
PWP15	1,000	10	108	0
PWP16	2,500	25	11	0
PWP17	2,500	25	30	0
PWP18	2,500	25	0	0
PWP19	1,000	10	0	0
Total	**29,500**	**295**	**5,946**	**0**
VP5	2,500	25	0	0
VP8	2,500	25	40	0
VP10	1,000	10	0	0
VP11	2,500	25	615	0
VP12	2,500	25	0	0
VP15	1,000	10	0	0
VP17	2,500	25	0	0
VP18	1,000	10	0	0
VP19	2,500	25	0	0
VP26	1,000	10	0	0
VP27	1,000	10	0	0
Total	**20,000**	**200**	**655**	**0**
Combined Total	**49,500**	**495**	**6,601**	**0**

Table 2 **Fairy Shrimp Hatching Results**		
Basin	***Branchinecta lindahli***	
	Male	**Female**
PWP3	3	0
PWP4	0	1
PWP5	3	1
PWP8	5	1
PWP9	6	0
PWP11	15	25
PWP12	3	2
PWP13	0	0
PWP14	20	14
PWP15	4	8
PWP16	0	0
PWP17	5	3
VP8	3	2
VP11	4	2

The above text presents the final results of the dry season fairy shrimp and hatching effort conducted for the project. If you have any questions or need additional information please call.

Sincerely,



Greg Mason
Principal/Senior Biologist

APPENDIX I

Jurisdictional Delineation Report

DUDEK

MAIN OFFICE
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July 21, 2017 9420

Ms. Keli Balo
City of San Diego
9192 Topaz Way
San Diego, California 92123

Subject: ***Jurisdictional Delineation Report for the North City Project, San Diego County, California***

Dear Ms. Balo:

This report documents the results of a jurisdictional delineation for the proposed Pure Water San Diego Program North City project (North City Project). The 730.6-acre North City Project Study Area (Study Area) consists of the North City Project impacts and an approximately 50-foot buffer along the linear portions of the North City Project. The North City Project Alternatives include a variety of facilities located throughout the central coastal areas of San Diego County in the North City geographic area (Figure 1, Regional Map). The two alternatives, the Miramar Reservoir Alternative and San Vicente Reservoir Alternative, include overlapping areas. A new pure water facility and three pump stations would be located within the corporate boundaries of the City of San Diego (City). Pipelines would traverse a number of local jurisdictions, including the cities of San Diego and Santee and the community of Lakeside in unincorporated San Diego County, in addition to federal lands within Marine Corps Air Station (MCAS) Miramar (Figure 2, Vicinity Map).

This jurisdictional delineation report includes a description of jurisdictional delineation methods and the results of the jurisdictional delineation.

METHODS

Literature Review

Dudek reviewed aerial maps from the San Diego Association of Governments (SANDAG 2014) and Bing (Microsoft 2016); the U.S. Fish and Wildlife Service National Wetlands Inventory (USFWS 2016); the U.S. Geological Survey National Hydrography Dataset (NHD; USGS 2016); the Web Soil Survey (USDA 2016a); Overview of San Diego Region Watershed Management Areas (SDRWQCB 2002); vegetation mapping by Dudek in 2016; vernal pool and basin mapping (HELIX 2016a, 2016b); Draft Existing Conditions Letter Report for the Pure Water San

Diego Program North City Water Purifications Project (HELIX 2016c); topographic data (SANGIS 1999; SDSU n.d.); and historical aerials and topographic maps (Google Earth 2016; Historic Aerials Online 2016a, 2016b, 2016c, 2016d).

Jurisdictional Delineation

A formal jurisdictional delineation was completed by Dudek biologists in September and October 2016 (Table 1) to delineate the extent of jurisdictional aquatic features within the Study Area. In November 2016, the potential vernal pool areas were refined during the site visit. The riparian vegetation communities mapped by Dudek in 2016, vernal pool mapping (HELIX 2016a, 2016b), National Wetlands Inventory data (USFWS 2016), NHD data (USGS 2016), and focused drone flights were used to identify areas within the Study Area on which to concentrate the jurisdictional delineation.

Table 1
Survey Schedule

Date	Time	Surveyors[1]	Weather Conditions[2]
9/26/2016	0930–1700	DM, CA	80°F– 93°F, 0% cc, 1 mph wind
9/27/2016	0930–1700	DM, CA, JW, KD	84°F–96°F, 0% cc, 0–2 mph wind
9/28/2016	0930–1700	DM, CA, JW, KD	80°F–93°F, 0% cc, 0–2 mph wind
10/5/2016	0930–1700	CA, PS	68°F–78°F, 0% cc, 0–2 mph wind
10/26/2016	0730–1050	KD	62°F–71°F, 0% cc, 0–3 mph wind
11/29/2016	1200-1600	BO	56°F–69°F, 70% cc, 0-2 mph wind

Notes:
1 DM = Danielle Mullen; CA = Callie Amoaku; JW = Janice Wondolleck; KD = Katie Dayton; PS = Patricia Schuyler; BO = Brock Ortega.
2 °F = degrees Fahrenheit; cc = cloud cover; mph = miles per hour

The delineation defined areas under the jurisdiction of the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600–1603 of the California Fish and Game Code, under the jurisdiction of the U.S. Army Corps of Engineers (ACOE) pursuant to Section 404 of the federal Clean Water Act, under the jurisdiction of the Regional Water Quality Control Board (RWQCB) pursuant to Clean Water Act Section 401 and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), and wetlands under the jurisdiction of the City of San Diego pursuant to Section 114 of the San Diego Municipal Code.

Specifically, the methodology used for each jurisdiction or regulating agency, including ACOE, CDFW, RWQCB, and the City, is described in the following paragraphs.

The ACOE wetlands delineation was performed in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (Wetlands Manual; ACOE 1987), the Regional Supplement to the

Corps of Engineers Wetland Delineation Manual: Arid West Region (Regional Supplement; ACOE 2008), Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Updated OHWM Datasheet; ACOE 2010), and guidance provided by ACOE and the U.S. Environmental Protection Agency on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the Clean Water Act (ACOE and EPA 2008). ACOE and RWQCB, pursuant to the federal Clean Water Act, include all areas supporting all three wetlands criteria described in the ACOE Wetlands Manual: hydric soils, hydrology, and hydrophytic vegetation. RWQCB may also take jurisdiction over surface waters lacking ACOE regulation pursuant to the state Porter-Cologne Act. These areas generally include areas that have at least one of the three wetlands indicators but that are isolated from a tributary of navigable water, as determined through lack of evidence of surface water hydrology. Jurisdiction of RWQCB is coincident with that of ACOE in accordance with the federal Clean Water Act, except in cases where a resource is determined to be isolated from navigable waters of the United States and where RWQCB may take jurisdiction under the Porter-Cologne Act. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

Section 114 of the San Diego Municipal Code describes specific development regulations pertaining to sensitive biological resources, including wetlands. The City's definition of wetlands is broader than the definition applied by ACOE.

Collectively, areas under the jurisdiction of ACOE, RWQCB, and/or CDFW are termed "jurisdictional aquatic resources." All jurisdictional aquatic resources are considered wetlands under the City's jurisdiction.

To assist in the determination of jurisdictional areas on site, data was collected at 40 locations (i.e., data stations) using wetland determination data forms (Appendix A). Hydrology, vegetation, and soils were assessed and data were collected and captured on approved ACOE forms. The locations of data stations were collected using a Trimble GeoXT handheld Global Positioning System (GPS) unit with sub-meter accuracy. Based on the GPS data collected in the field, potentially jurisdictional areas were digitized in a geographic information system (GIS) using ArcGIS software.

Hydrophytic Vegetation

Changes in human land-use practices and seasonal changes in species composition, wildfires, and other natural disturbances can adversely affect the hydrophytic vegetation determination. During the delineation, a data station point was considered positive for hydrophytic vegetation if it passed the basic dominance test (Indicator 1), meaning that more than 50% of the dominant species sampled were characterized as either obligate wetland, facultative wetland, and/or facultative per the Arid West 2016 Regional Wetland Plant List (Lichvar et al. 2016). In those cases where the dominance test failed, the vegetation parameter was reevaluated using the prevalence index (Indicator 2), which takes into account all plant species in the community, not just dominants. All plant species observed during the surveys were identified and recorded. Where plant identification could not be made in the field, a sample was taken and later identified in the laboratory.

Hydric Soils

According to the National Technical Committee for Hydric Soils, hydric soils are "soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USDA 1994). Soil pits were prepared using a "sharp shooter" shovel to determine whether hydric soils were present. The presence of hydric soils was determined through consultations with the 1987 ACOE Wetlands Manual; Field Indicators of Hydric Soils in the United States, version 7.0 (USDA 2010); ACOE's Regional Supplement (ACOE 2008); and Munsell soil color charts (Munsell 2016). Where feasible, soil pits were prepared to depths ranging from 10 to 16 inches, and dry soils were moistened to obtain the most accurate color. Excavated soils were examined for evidence of hydric conditions, including low chroma values and mottling, vertical streaking, sulfidic odor, and high organic matter content in the upper horizon. Evidence of previous ponding or flooding was assessed along with the slope, slope shape, existing landform characteristics, soil material/composition, and hydrophytic vegetation to determine whether hydric soils were present.

Hydrology

Per the guidelines prescribed in the Regional Supplement (ACOE 2008), wetland hydrology indicators are separated into four major groups: groups A, B, C, and D. Group A indicators are based on direct observations of surface flow, ponding, and soil saturation/groundwater. Group B indicators consist of evidence that the Study Area has been or is currently subjected to ponding, including, but not limited to, water marks, drift deposits, and sediment deposits. Group C indicators include signs of previous and/or current saturation, including oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur, both of which are indicative

of extended periods of soil saturation. Group D indicators consist of "vegetation and soil features that are indicative of current rather than historic wet conditions and include a shallow aquitard and results of the Facultative (FAC)-Neutral test" (ACOE 2008). Each group is subdivided into primary and secondary categories based on their frequency and reliability to occur in the Arid West region. Signs of hydrology were investigated on the Study Area. For unvegetated areas, the Updated OHWM Datasheet (ACOE 2010) was used to assess hydrology.

Desktop Analysis

Desktop analysis was used to make preliminary determinations for areas where no access was permitted. Potential jurisdictional areas were mapped using riparian vegetation communities, nearby features accessed during the survey, location of the potential features, and other data (USGS 2016; USFWS 2016; Historic Aerials 2016d). One area is mapped as unvegetated channel, but based on the review of the NHD and topographic maps, there is no connectivity to waters of the United States; therefore, it was mapped under the jurisdiction of CDFW only. Another area within an access-restricted area is mapped as a vernal pool (PW53) in the vernal pool survey data (HELIX 2016a, 2016b); it is described in the HELIX report as being inundated for less than 7 days and not further described with regard to vernal pool indicator species (HELIX 2016c). Therefore, to be conservative, this feature was mapped as a potential vernal pool. Figure 3, Methods – No Access, shows the "no access" areas.

In addition, four vernal pools (PW55, PW56, PW57, and PW58), totaling 0.04 acre, were mapped by HELIX on the North City Pure Water Facility (NCPWF) and described in their report as having vernal pool indicator plant species present (HELIX 2016c) and therefore considered jurisdictional aquatic resources. Additional pools were mapped at NCPWF during the extraordinary rain events in 2017 totaling an additional 0.34 acre of vernal pool area. These pools were found to support indicator plant species, so are therefore considered to be vernal pools in accordance with the Draft Vernal Pool Habitat Conservation Plan (City of San Diego 2016b). Six of these 2017 pools expanded the surface area of the HELIX pools to 0.24 acre and created eleven new pools (0.14 acre). The total vernal pool acreage within the Miramar Reservoir Alternative study area is 0.38 acre including the expanded pools. HELIX and Rocks evaluated this site for potential jurisdictional drainages and none were identified. The vernal pools mapped on the NCPWF site are considered isolated from navigable waters with no federal nexus that would allow these pools to be considered jurisdictional wetlands by the ACOE under the federal Clean Water Act (HELIX 2016c). The RWQCB may try to assert jurisdiction over the vernal pools as wetland waters of the State under the Porter–Cologne Act; however, these pools are small, isolated, and contain limited biological value given that they do not support listed species (HELIX 2016c). The vernal pools would be considered City wetlands in accordance with the City's Biological Guidelines (HELIX 2016c).

The San Vicente Reservoir Dam Raise was completed in 2014 to raise the inundation area from the existing OHWM of 650 feet above mean sea level (amsl) to a new spillway elevation of approximately 766 feet amsl (excluding an Emergency Storage Project area, which was raised to approximately 710 feet amsl) (ACOE 2009). The new spillway elevation was used in combination with information provided by the City of San Diego (Adleberg, pers. comm. 2016a) to determine the OHWM of the San Vicente Reservoir.

Survey Limitations

The survey was conducted during the fall, thereby limiting detection of some annual plant species. However, based on characteristics observed at each of the investigation locations, this limitation is not expected to have affected the jurisdictional determination. Additionally, although the ongoing drought in the region may affect the current conditions observed in the field; other resources were reviewed to supplement the field survey in making the final determinations.

Where possible, plants were mapped to genus. The only areas where a spring survey may provide additional information are the vernal pools that were mapped by HELIX (2016a, 2016b) but were not addressed further in their draft report (HELIX 2016c); where access allowed, these areas were visited by Dudek in October, but survey timing did not coincide with the blooming period of most annual species and therefore not all plants could be identified.

Areas that were inaccessible due to restrictions were delineated via desktop analysis, but were not visited in person during the surveys.

The vernal pool survey area covered a portion of the Study Area, and it is possible there are other vernal pools within upland areas that were not surveyed as part of the jurisdictional delineation. Those potential vernal pool areas have been identified and are further analyzed as part of the 2016/2017 vernal pool surveys.

Biological Resource Mapping

Vegetation communities were mapped by Dudek prior to the jurisdictional delineation in early 2016; however, some vegetation communities and boundaries were refined as needed during the jurisdictional delineation, which mapped boundaries using a Trimble GeoXT GPS with submeter accuracy. These boundaries and locations were digitized by Dudek GIS technician Andrew Greis using ArcGIS software. Additional GIS data was received from HELIX in October and replaced previous vegetation mapping for the North City Pure Water Facility area (HELIX 2016d).

As adopted in the City Municipal Code, Land Development Code—Biology Guidelines (City of San Diego 2012), the vegetation community and land cover mapping follows the Preliminary

Descriptions of the Terrestrial Natural Communities of California (Holland 1986) as modified by the County and noted in Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008), with modifications to accommodate the lack of conformity of the observed communities to those of Holland. Plant species identified during the delineation are described by their scientific names according to the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2016) and common names follow the U.S. Department of Agriculture Natural Resources Conservation Service PLANTS Database (USDA 2016b).

PHYSICAL CHARACTERISTICS

Site Description

The North City Project Alternatives are located in San Diego, Santee, Lakeside, and MCAS Miramar (Figure 1). The Study Area is located on the U.S. Geological Survey 7.5-minute Del Mar, Poway, San Vicente Reservoir, La Jolla, La Mesa, and El Cajon quadrangles (Figure 2).

The Study Area ranges from approximately 10 feet amsl to 1,080 feet amsl. Much of the site is gently sloping or relatively flat, with steeper areas around the reservoirs.

Soils

Soil types within the Study Area are shown in Table 2 and on Figure 4, Soils Map (USDA 2016a). The hydric soils are indicated by shading (USDA 2010, 2015).

Table 2
Soils

Soil Category	Soil Description	Hydric Rating	Acreage
Acid igneous rock land	Acid igneous rock land	No	3.8
Altamont clay	Altamont clay, 9% to 15% slopes	No	0.6
Altamont clay	Altamont clay, 15% to 30% slopes	No	11.4
Altamont clay	Altamont clay, 30% to 50% slopes	No	1.9
Carlsbad gravelly loamy sand	Carlsbad gravelly loamy sand, 2% to 5% slopes	Yes	5.6
Carlsbad-Urban land complex	Carlsbad-Urban land complex, 2% to 9% slopes	No	11.5
Chestern fine sandy loam	Chesterton fine sandy loam, 5% to 9% slopes	No	3.5
Chestern fine sandy loam	Chesterton fine sandy loam, 9% to 15% slopes, eroded	No	1.3
Chestern fine sandy loam	Chesterton fine sandy loam, 2% to 5% slopes	Yes	47.9
Chestern-Urban land complex	Chesterton-Urban land complex, 2% to 9% slopes	No	39.4
Cieneba rocky coarse sandy loam	Cieneba rocky coarse sandy loam, 9% to 30% slopes, eroded	No	2.1

Table 2
Soils

Soil Category	Soil Description	Hydric Rating	Acreage
Cieneba very rocky coarse sandy loam	Cieneba very rocky coarse sandy loam, 30% to 75% slopes	No	23.4
Cieneba-Fallbrook rocky sandy loams	Cieneba-Fallbrook rocky sandy loams, 30% to 65% slopes, eroded	No	4.3
Corralis loamy sand	Corralitos loamy sand, 0% to 5% slopes	Yes	2.0
Diablo clay	Diablo clay, 2% to 9% slopes	No	5.7
Diablo clay	Diablo clay, 15% to 30% slopes	No	16.8
Diablo-Olivenhain complex	Diablo-Olivenhain complex, 9% to 30% slopes	No	15.1
Fallbrook rocky sandy loam	Fallbrook rocky sandy loam, 9% to 30% slopes	No	0.0
Fallbrook sandy loam	Fallbrook sandy loam, 9% to 15% slopes, eroded	No	7.5
Fallbrook-Vista sandy loams	Fallbrook-Vista sandy loams, 15% to 30% slopes	No	0.7
Friant rocky fine sandy loam	Friant rocky fine sandy loam, 30% to 70% slopes	No	4.3
Gaviota fine sandy loam	Gaviota fine sandy loam, 30% to 50% slopes	No	11.8
Grangeville fine sandy loam	Grangeville fine sandy loam, 0% to 2% slopes	Yes	2.0
Gravel pits	Gravel pits	No	1.6
Huerhuero loam	Huerhuero loam, 9% to 15% slopes, eroded	No	2.3
Huerhuero loam	Huerhuero loam, 15% to 30% slopes, eroded	No	9.0
Huerhuero loam	Huerhuero loam, 2% to 9% slopes	Yes	1.8
Huerhuero-Urban land complex	Huerhuero-Urban land complex, 2% to 9% slopes	No	22.2
Huerhuero-Urban land complex	Huerhuero-Urban land complex, 9% to 30% slopes	No	2.3
Lagoon water	Lagoon water	No	0.2
Loamy alluvial land-Huerhuero complex	Loamy alluvial land-Huerhuero complex, 9% to 50% slopes, severely eroded	Yes	0.9
Metamorphic rock land	Metamorphic rock land	No	4.3
Olivenhain cobbly loam	Olivenhain cobbly loam, 30% to 50% slopes	No	20.7
Olivenhain cobbly loam	Olivenhain cobbly loam, 9% to 30% slopes	Yes	0.5
Placentia sandy loam	Placentia sandy loam, thick surface, 2% to 9% slopes	Yes	8.6
Ramona sandy loam	Ramona sandy loam, 5% to 9% slopes	No	7.3
Redding cobbly loam	Redding cobbly loam, 9% to 30% slopes	Yes	26.9
Redding cobbly loam dissected	Redding cobbly loam, dissected, 15% to 50% slopes	No	17.9
Redding gravelly loam	Redding gravelly loam, 2% to 9% slopes	Yes	191.0
Redding-Urban land complex	Redding-Urban land complex, 2% to 9% slopes	No	30.6
Redding-Urban land complex	Redding-Urban land complex, 9% to 30% slopes	No	13.5
Riverwash	Riverwash	Yes	18.4
Salinas clay	Salinas clay, 0% to 2% slopes	No	2.6
Salinas clay loam	Salinas clay loam, 2% to 9% slopes	No	6.6
stony land	Stony land	No	2.7
Terrace escarpments	Terrace escarpments	No	28.5

Table 2
Soils

Soil Category	Soil Description	Hydric Rating	Acreage
Tujunga sand	Tujunga sand, 0% to 5% slopes	Yes	21.3
Urban land	Urban land	No	7.8
Visalia gravelly sandy loam	Visalia gravelly sandy loam, 2% to 5% slopes	No	1.8
Visalia gravelly sandy loam	Visalia gravelly sandy loam, 5% to 9% slopes	No	1.3
Visalia sandy loam	Visalia sandy loam, 0% to 2% slopes	Yes	38.6
Water	Water	No	16.9
		Total	**730.6**

Sources: USDA 2016a, 2010, 2015.
Note: Shaded rows denote hydric soils.

Hydrology

The Study Area lies within the San Diego and Peñasquitos Hydrologic Units. The San Diego Hydrologic Unit (906.00) is a long, triangular area covering approximately 440 square miles; the Peñasquitos Hydrologic Unit (907.00) is a triangular area covering approximately 170 square miles (Figure 5, Hydrologic Setting) (SDRWQCB 2002). These hydrologic units are bordered by the San Dieguito Hydrologic Unit to the north and Pueblo San Diego and Sweetwater Hydrologic Units to the south. The Study Area lies within the Miramar, Miramar Reservoir, Tecolote, Mission San Diego, Santee, and Fernbrook Hydrologic Subareas (Figure 5).

The San Diego Hydrologic Unit includes the San Diego River and its tributaries, with the San Vicente, Jennings, Murray, El Capitan, and Cuyamaca Reservoirs providing major water storage within the unit. Historically the San Diego River flowed into San Diego Bay and Mission Bay; however, the channelized river now flows directly into the Pacific Ocean (SDRWQCB 2002).

The Peñasquitos Hydrologic Unit includes Tecolote Creek and several other small creeks and Miramar Reservoir. This hydrologic unit drains into Mission Bay or the San Diego River (SDRWQCB 2002).

The NHD identifies the San Diego River and Tecolote Creek and their tributaries as the drainage features within the Study Area. San Vicente Creek is also a prominent creek that flows into San Vicente Reservoir. Although the City does not routinely release water from the San Vicente Reservoir into the downstream portion of San Vicente Creek, the creek connects the reservoir to the San Diego River, which discharges into the Pacific Ocean near Mission Bay (SDCWA and ACOE 2008).

RESULTS OF SURVEY

Jurisdictional Aquatic Resources

As described in the introduction, the 730.6-acre Study Area consists of the North City Project Alternatives (Miramar Reservoir Alternative and the San Vicente Reservoir Alternative) and an approximately 50-foot buffer along the linear portions of the Proposed Action (Figure 2). The features evaluated during the survey were typically tributaries to, or part of, the San Diego River, Tecolote Creek, San Vicente Reservoir, and Miramar Reservoir. Other features included vernal pools, as well as riparian habitat not associated with waters of the United States.

This section includes the results of the survey described by each alternative separately; the results are shown on Figures 6A–6P, Special Aquatic Resources. Table 3 includes a detailed summary and description of the San Vicente Reservoir and San Vicente Creek, Miramar Reservoir, San Diego River, and Tecolote Creek, which was used to determine the jurisdictional aquatic resources subject to state and/or federal regulations.

Table 3
Summary of Jurisdictional Areas in Study Area

Attribute	San Vicente Reservoir and San Vicente Creek	Miramar Reservoir	San Diego River	Tecolote Creek	Rose Creek/San Clemente Creek
On-site location	The San Vicente Reservoir sits at the eastern extent of the San Vicente Pure Water Pipeline. The reservoir is located east of State Route 67 (SR-67) and north of Interstate 8 (I-8), north of the City of Lakeside, in San Diego County, California. The reservoir was formed within the Cuyamaca Mountains by the damming of San Vicente Creek and the Colorado River via the First San Diego Aqueduct. The reservoir is surrounded by steep, rocky slopes containing mostly chaparral and coastal sage scrub habitats. Wetland vegetation along the shoreline is limited due to the fluctuating water levels and maintenance activities. The San Vicente Reservoir Dam Raise was completed in 2014 to raise the inundation area from the existing OHWM of 650 feet amsl to a new spillway elevation of approximately 766 feet amsl (excluding an Emergency Storage Project area, which was raised to approximately 710 feet amsl)	The Miramar Reservoir sits at the northern extent of the North City Pure Water Pipeline located within the Scripps Ranch community of the City of San Diego. The reservoir is located east of I-15, north of Pomerado Road, and south of Scripps Poway Parkway. The dam and reservoir were completed in 1960 as part of the Second San Diego Aqueduct project. Water flowing south to the reservoir originates from both the Colorado River Aqueduct and the California Aqueduct[1] (City of San Diego 2016a). The reservoir is surrounded by a mixture of wetland and upland habitats, including coastal sage scrub and eucalyptus woodland. Wetland vegetation, mainly freshwater marsh, is found along the majority of the reservoir's perimeter (Figure 6F).	The San Diego River originates north of SR-79 between San Ysabel and Julian within the Cuyamaca Mountains, and runs southwest through an unincorporated area of San Diego County before entering El Capitan Reservoir. Downstream of El Capitan Reservoir, the river flows westward through the cities of Santee and San Diego and past Famosa Slough to the San Diego River Estuary. The river discharges into the Pacific Ocean just south of the jettied entrance of Mission Bay in the community of Ocean Beach (Figure 5). The San Vicente Pure Water Pipeline crosses the San Diego River three times, once near the intersection of West Hills Parkway and SR-52, once south of Carlton Oaks Drive, and	Tecolote Creek sits between I-5 and I-805, north of I-8, forming the southern boundary of Clairemont Mesa, a community within the north-central portion of the City of San Diego (Figure 5). The Wastewater Forcemain and Brine Line (Morena Pipelines) intersect Tecolote Creek along West Moreno Boulevard (Figure 6A).	The proposed Morena Pipelines crosses San Clemente Creek south of SR-52 east of Marian Bear Memorial Park and crosses Rose Creek north of SR-52, east of Rose Canyon Open Space Park. The Landfill Gas (LFG) Pipeline crosses both creeks farther east.

Table 3
Summary of Jurisdictional Areas in Study Area

Attribute	San Vicente Reservoir and San Vicente Creek	Miramar Reservoir	San Diego River	Tecolote Creek	Rose Creek/San Clemente Creek
	(ACOE 2009). The new spillway elevation was used in combination with information provided by the City (Adleberg, pers. comm. 2016a) to determine the OHWM of the San Vicente Reservoir (Figures 6O, 6P).		again north of the intersection of Mission Gorge and Princess View Drive.		
Tributaries present	There are approximately 10 intermittent tributaries that flow into the San Vicente Reservoir from the surrounding steep slopes. Two named tributaries, San Vicente Creek and the First San Diego Aqueduct, are the major inflow sources to the reservoir. The San Vicente Creek watershed (upstream of the dam) covers approximately 74 square miles and includes several ephemeral drainages, including Padre Barona Creek, Foster Creek, West Branch Creek, and San Vicente Creek (SDCWA and ACOE 2008). San Vicente Creek flows southwest from Ramona through the Cuyamaca Mountains and into the reservoir. San Vicente Creek continues downstream of the San Vicente Dam until it merges with the San Diego River. The First San	The Second San Diego Aqueduct is the major inflow source to the Miramar Reservoir. There are no natural sources of flow into the reservoir. Based on a review of NHD flowlines, historic aerials, and topographic maps, there is only one NHD flowline at the northeastern end of the reservoir that terminates approximately 1,100 feet away from the reservoir.	The San Diego River has numerous tributaries along the entirety of its length, but the major inflow sources can be ascribed to the following tributaries: Boulder Creek, Cedar Creek, Conejos Creek, Chocolate Creek, Los Coches Creek, San Vicente Creek, and Forester Creek (USGS 2016). Only a few of these, including Forester Creek and San Vicente Creek, occur in the vicinity of the Study Area. San Vicente Creek flows southwest from Ramona, through the Cuyamaca Mountains and into the San Vicente Reservoir. San Vicente Creek	There are approximately seven intermittent tributaries that flow into Tecolote Creek from the surrounding steep slopes and canyons (USGS 2016).	San Clemente Creek is a tributary to Rose Creek. There are five unnamed tributaries of Rose Creek upstream of the confluence of Rose and San Clemente creeks. There are three unnamed tributaries of San Clemente Creek.

Table 3
Summary of Jurisdictional Areas in Study Area

Attribute	San Vicente Reservoir and San Vicente Creek	Miramar Reservoir	San Diego River	Tecolote Creek	Rose Creek/San Clemente Creek
	Diego Aqueduct flows from the Colorado River Aqueduct in San Jacinto, California, south through underground pipes to the reservoir. The First San Diego Aqueduct enters the reservoir along the southwestern edge, where it flows aboveground through a water discharge structure and into a perennial stream that flows into the reservoir.		continues downstream of the San Vicente Dam until it merges with the San Diego River. The headwaters for Forester Creek begin north of Crest, an unincorporated community in San Diego County. Forester Creek parallels La Cresta Road as it heads west toward I-8 into El Cajon. Once in El Cajon, the creek flows north into Santee along North Johnson and Marshall Avenues. The creek flows under SR-52 and converges with the San Diego River near SR-52 and West Hills Parkway. Forester Creek is channelized all through El Cajon and Santee, but the headwaters contain oak woodland, and southern willow scrub can be found at the downstream end of the creek near its confluence with the San Diego River (Google Earth 2016).		

Table 3
Summary of Jurisdictional Areas in Study Area

Attribute	San Vicente Reservoir and San Vicente Creek	Miramar Reservoir	San Diego River	Tecolote Creek	Rose Creek/San Clemente Creek
On-site topography	The San Vicente Reservoir is surrounded by steep slopes due to the surrounding hilly terrain. San Vicente Creek and West Branch San Vicente Creek are the longest tributaries to the reservoir, with elevations of approximately 2,690 feet amsl and 1,800 feet amsl, respectively. The First San Diego Aqueduct flows aboveground through the discharge structure at approximately 760 feet amsl before entering the reservoir. The other tributaries range in elevation from 1,340 feet amslo to 1,760 feet amsl, flowing into the reservoir from the east, north, and west.	The elevation of the Miramar Reservoir is approximately 700 feet amsl, and the reservoir surrounded by residential development and the Miramar Water Treatment Plant.	The San Diego River flows from its headwaters within the Cuyamaca Mountains at approximately 3,720 feet amsl to its mouth at the Pacific Ocean.	Tecolote Creek flows from its headwaters at approximately 350 feet amsl to the Pacific Ocean via Mission Bay and the San Diego River.	San Clemente Creek occurs at approximately 480 feet amsl at the headwaters and 120 feet at the confluence of San Clemente Creek and Rose Creek. Rose Creek occurs at approximately 10 feet amsl to 640 feet amsl. The proposed LFG Pipeline crosses both San Clemente Creek and Rose Creek at approximately 280 feet amsl. The Morena Pipelines cross both creeks at approximately 200 feet amsl.
Hydrology	The San Vicente Reservoir lies within the Fernbrook Hydrologic Subarea of the San Vicente Hydrologic Area of the San Diego Hydrologic Unit (Figure 5) (SDRWQCB 1995). The San Diego Hydrologic Unit is approximately 440 square miles, is drained by the San Diego River, and receives annual precipitation ranging from less than 11 inches	The Miramar Reservoir lies within the Miramar Hydrologic Area of the Peñasquitos Hydrologic Unit (Figure 5) (SDRWQCB 1995). The Peñasquitos Hydrologic Unit is approximately 170 square miles, is drained by several small creeks, and receives annual precipitation ranging from less than 8 inches along	The San Diego River is within the San Diego Hydrologic Unit of the San Diego River Watershed Management Area (Figure 5). The San Diego Hydrologic Unit is approximately 440 square miles, is drained by the San Diego River, and receives annual	Tecolote Creek is within the Peñasquitos Hydrologic Unit (Figure 5), an area of approximately 170 square miles extending from the City of Poway to the east and the City of La Jolla to the west. Annual precipitation in the hydrologic unit ranges from less than 8 inches along the coast to 18 inches inland.	Rose Creek and San Clemente Creek lie within the Miramar Subarea of the Peñasquitos Hydrologic Unit. The Peñasquitos Hydrologic Unit is approximately 100 square miles. It drains the largely urbanized areas west of I-15 in

Table 3
Summary of Jurisdictional Areas in Study Area

Attribute	San Vicente Reservoir and San Vicente Creek	Miramar Reservoir	San Diego River	Tecolote Creek	Rose Creek/San Clemente Creek
	along the coast to about 35 inches around the Cuyamaca and El Capitan reservoirs (SDRWQCB 2002).	the coast to approximately 18 inches inland (SDRWQCB 2002).	precipitation ranging from less than 11 inches along the coast to about 35 inches around the Cuyamaca and El Capitan Reservoirs (SDRWQCB 2002).	Several small creeks drain this hydrologic unit, including Tecolote Creek. Drainage from the hydrologic unit ultimately flows into Mission Bay or the San Diego River.	coastal San Diego County. The major receiving waters include Los Peñasquitos Lagoon and Mission Bay.
Tributary to ?	San Vicente Creek flows downstream of the San Vicente Dam, and although the City does not routinely release water from the San Vicente Reservoir into San Vicente Creek, the creek connects the reservoir to the San Diego River, which discharges into the Pacific Ocean near Mission Bay (SDCWA and ACOE 2008). According to the Carryover Storage and San Vicente Dam Raise Environmental Impact Report/ Environmental Impact Statement (SDCWA and ACOE 2008), this downstream portion of San Vicente Creek contains both jurisdictional wetlands and waters regulated by ACOE and CDFW.	The Miramar Reservoir does not have connectivity to waters of the United States. There are no natural sources of flows into the reservoir. The reservoir itself stores water from the Colorado River, which is transported through the Second San Diego Aqueduct. Water is not released from the reservoir. The pond located south of the reservoir ("Evans Pond") receives water from a storm drain and untreated water from various reservoirs (Adleberg, pers. comm. 2016b).	The San Diego River historically flowed into Mission Bay; however, the river has been channelized and redirected to now flow directly into the Pacific Ocean (SDRWQCB 2002).	Tecolote Creek flows into Mission Bay and out to the Pacific Ocean.	San Clemente Creek is a tributary to Rose Creek. Rose Creek is not a tributary to any other waters and flows to the Pacific Ocean via Mission Bay.
Riparian vegetation present?	Within the Study Area, there are two areas within San Vicente Creek that contain riparian vegetation. The first area	Within the Study Area, there is riparian vegetation, mapped as freshwater marsh, present along the Miramar Reservoir's	The San Diego River contains an extensive amount of riparian vegetation, and within the	Tecolote Creek is a natural streambed containing riparian vegetation as it flows through the open	On site, southern sycamore–alder riparian woodland and southern willow scrub

Table 3
Summary of Jurisdictional Areas in Study Area

Attribute	San Vicente Reservoir and San Vicente Creek	Miramar Reservoir	San Diego River	Tecolote Creek	Rose Creek/San Clemente Creek
	(containing mulefat scrub) is downstream of the dam (Figure 6N), just south of the quarry and west of Moreno Avenue. The other area is farther south along the San Vicente Pure Water Pipeline and contains southern willow scrub where San Vicente Creek passes underneath Willow Road just west of Moreno Avenue (Figure 6M).	perimeter.	Study Area riparian vegetation occurs within all areas where the San Vicente Pure Water Pipeline crosses the San Diego River. The vegetation includes southern arroyo willow riparian forest, southern willow scrub, freshwater marsh, and *Arundo*-dominated riparian.	space of Tecolote Canyon, but becomes an unvegetated concrete-lined channel as it flows out into Mission Bay.	are mapped at San Clemente Creek. At Rose Creek, southern willow scrub is mapped.
Potential ACOE jurisdiction?	Yes. ACOE issued a permit for the Carryover Storage and San Vicente Reservoir Dam Raise Project (ACOE 2009).	Potential; needs ACOE confirmation. Prior to construction of the Miramar Reservoir, there was an impoundment at this location. Based on historic topographic maps, the impoundment received flow from a channel to the northeast that originated in the adjacent hills. Water discharged from the impoundment flowed south/southwest into another channel, which discharged into another impoundment (Historic Aerials 2016c). Since both of the dams were created prior to September 1, 1976	Yes	Yes	Yes

Table 3
Summary of Jurisdictional Areas in Study Area

Attribute	San Vicente Reservoir and San Vicente Creek	Miramar Reservoir	San Diego River	Tecolote Creek	Rose Creek/San Clemente Creek
		(grandfathered under the Nationwide Permits per 33 CFR 330.3), at the time the Clean Water Act began to be enforced in this area the reservoir was already long isolated from the downstream creek, so it may not be considered an (a)(4) water body.			

Note:
[1] The NHD refers to this as the Second San Diego Aqueduct (USGS 2016).

Waters of the United States

Areas mapped as waters of the United States exhibit characteristics of ACOE/RWQCB waters (ACOE 2008, 2010) and CDFW streambeds (i.e., defined bed and bank). Through either on-site evaluation or literature review, the channels, floodplains, or reservoirs were determined to connect to the San Vicente Creek, San Diego River, or Tecolote Creek and therefore to be hydrologically connected to navigable waters of the United States and jurisdictional under ACOE, RWQCB, and CDFW regulations.

Because an Approved Jurisdictional Determination has not been provided by the ACOE, for the purposes of this report, Miramar Reservoir and the pond to the south are considered potential waters of the United States. Based on a review of historic aerials and topographic maps (Historic Aerials 2016c), there was some hydrology in this area prior to construction of the dam; however, the reservoir itself stores water from the Colorado River that is transported through the Second San Diego Aqueduct. Water is not released from the reservoir, and the reservoir has no hydrologic connection to the downstream relic creek channel. Miramar Reservoir in its current condition is an isolated intrastate water body. The pond located south of the reservoir ("Evans Pond") receives water from a storm drain and untreated water from various reservoirs (Adleberg, pers. comm. 2016b).

Areas that did not exhibit hydrology characteristics per the ACOE guidelines (ACOE 1987, 2008, 2010) were not mapped as waters of the United States.

Waters of the State

The second type of potential jurisdictional aquatic resource includes riparian vegetation communities associated with stream channels. These areas are located on the slopes or banks outside the limits of the OHWM and therefore of the ACOE/RWQCB-regulated areas. The third type of jurisdictional aquatic resource on site is waters or riparian areas that do not appear to be associated with waters of the United States. These areas are mapped as CDFW-regulated resources.

California Coastal Commission

The North City Project is entirely outside the coastal zone, with the exception of one overflow pipe that extends approximately 200 feet within the boundary along Friars Road. However, based on communication with Alexander Llerandi at the CCC, the City has received concurrence that the overflow pipe is within the City's jurisdiction (and the CC's coastal development permit appealable jurisdiction) and can be processed locally (Llerandi, pers. comm. 2017). Therefore, no jurisdictional aquatic resources are considered to be regulated by the CCC.

City of San Diego

The City of San Diego regulates jurisdictional aquatic resources, or "wetlands," according to the City's Biological Guidelines (City of San Diego 2012). The intention of the definition is to differentiate uplands from wetlands. Under the City's definition, wetlands can include vegetation communities such as freshwater marsh, riparian forest, riparian scrub, or vernal pools. They may also include areas that have hydric soil or wetland hydrology, but human activities have resulted in a lack of hydrophytic vegetation (e.g., channelized streambeds) or recurring natural events (City of San Diego 2012). However, "seasonal drainage patterns that are sufficient enough to etch the landscape (i.e., ephemeral/intermittent drainages) may not be sufficient enough to support wetland dependent vegetation. These types of drainages would not satisfy the City's wetland definition unless wetland dependent vegetation is either present in the drainage or lacking due to past human activities. Seasonal drainage patterns may constitute "waters of the United States" which are regulated by the Army Corps of Engineers and/or the California Department of Fish and Game" (City of San Diego 2012).

Jurisdictional Aquatic Resources Summary by Alternative

Wetlands and non-wetland waters within the Study Area for both Project Alternatives under the jurisdiction of ACOE/RWQCB, streambeds and associated riparian areas under CDFW jurisdiction, and/or wetlands regulated by the City of San Diego total 35.27 acres; these resources are shown on Figures 6A–6P.

Miramar Reservoir Alternative

The total wetlands and non-wetland waters in the Miramar Reservoir Alternative under the jurisdiction of ACOE/RWQCB, streambeds and associated riparian areas under CDFW jurisdiction, and/or wetlands regulated by the City of San Diego is 2.96 acres.

Table 4 lists the jurisdictional aquatic resources and acreages in the Miramar Reservoir Alternative, and Figures 6A–6G show the location of those resources.

Table 4
Jurisdictional Aquatic Resources in the Miramar Reservoir Alternative (Acres)

Jurisdictional Aquatic Resource	ACOE/RWQCB[1]	CDFW[1]	City of San Diego Wetlands[1]
Wetland or Riparian Areas			
Cismontane alkali marsh	0.02	0.02	0.02
Coast live oak woodland	—	0.09	0.09
Coastal and valley freshwater marsh	0.37	0.37	0.37

Table 4
Jurisdictional Aquatic Resources in the Miramar Reservoir Alternative (Acres)

Jurisdictional Aquatic Resource	ACOE/RWQCB[1]	CDFW[1]	City of San Diego Wetlands[1]
Disturbed coast live oak woodland	—	0.06	0.06
Disturbed southern riparian forest	—	0.02	0.02
Mulefat scrub	0.04	0.07	0.07
Southern arroyo willow riparian forest	—	0.02	0.02
Southern willow scrub	0.25	0.25	0.25
Vernal pool	0.56	—	0.98[2]
Total riparian/wetlands	*1.23*	*0.89*	*1.88*
Non-wetland Waters/Streambed			
Ephemeral stream channel (Developed – Concrete Channel)	0.03	0.03	—
Ephemeral Stream Channel (Disturbed Wetland)	0.11	0.11	0.11
Ephemeral Stream Channel (Non-vegetated Channel)	0.51	0.46	0.46
Perennial stream channel	0.51	0.51	0.51
Total non-wetland waters/streambed	*1.16*	*1.12*	*1.10*
Total jurisdictional area[3]	**2.40**	**2.01**	**2.96**

Notes:
1 The acreages listed in the ACOE, RWQCB, CDFW, and City of San Diego Wetlands columns overlap and should not be summed together.
2 This 0.98 acre of vernal pool may also be regulated by the RWQCB.
3 Acreage may not sum precisely due to rounding.

ACOE- jurisdictional areas within the Miramar Reservoir Alternative total 2.40 acres, including 1.23 acres of jurisdictional wetlands and 1.16 acres of non-wetland stream channels or lake features. Vernal pools within MCAS Miramar are considered ACOE- and RWQCB-jurisdictional and total 0.56 acre. This total includes the vernal pools within the LFG Pipeline (0.45 acre) and North City Pipeline (0.10 acre) study areas.

CDFW jurisdiction extends over all areas under ACOE and RWQCB jurisdiction discussed above and includes areas that meet ACOE wetland (i.e., hydrophytic) vegetation criteria but lack wetlands hydrology and/or hydric soils indicators. CDFW-jurisdictional areas on site total 2.01 acres, including 0.89 acres of riparian habitat and 1.12 acres of streambed or lake features.

The majority of the jurisdictional aquatic resources are considered wetlands by the City of San Diego, with the exception of 0.03 acre of ephemeral stream channel (developed – concrete channel within Tecolote Creek) that do not meet the City's criteria for a wetland. Also included under City jurisdiction are vernal pools, totaling 0.98 acre. The vernal pools occur with the study area for four components including LFG Pipeline (0.45 acre), Metro Biosolids Center (0.03 acre), North City Pipeline (0.12 acre), and the NCPWF (0.38 acre). The vernal pools at the

NCPWF, one vernal pool at the MBC, and one vernal pool along the North City Pipeline are small, isolated, and do not support listed species. However, RWQCB may try to assert jurisdiction over the vernal pools as wetland waters of the State under the Porter–Cologne Act (HELIX 2016c). The vernal pools would be considered City wetlands in accordance with the City's Biological Guidelines (City of San Diego 2012).

The Miramar Reservoir Alternative includes 0.03 acre within the Coastal Overlay Zone.

San Vicente Reservoir Alternative

The total wetlands and non-wetland waters in the San Vicente Reservoir Alternative under the jurisdiction of ACOE/RWQCB, streambeds and associated riparian areas under CDFW jurisdiction, and/or wetlands regulated by the City of San Diego is 32.31 acres.

Table 5 lists the jurisdictional aquatic resources and acreages in the San Vicente Reservoir Alternative and Figures 6A–6C and 6G–6P show the location of those resources.

Table 5
Jurisdictional Aquatic Resources in the San Vicente Reservoir Alternative (Acres)

Jurisdictional Aquatic Resource	ACOE/RWQCB[1]	CDFW[1]	City of San Diego Wetlands[1]
Wetland or Riparian Areas			
Arundo-dominated riparian	0.33	0.39	0.39
Cismontane alkali marsh	0.02	0.02	0.02
Coast live oak woodland	—	0.09	0.09
Coastal and valley freshwater marsh	0.29	0.29	0.29
Disturbed coast live oak woodland	—	0.06	0.06
Disturbed mulefat scrub	—	0.17	0.17
Disturbed southern riparian forest	—	0.02	0.02
Mulefat scrub	0.04	0.23	0.23
Southern arroyo willow riparian forest	1.12	1.56	1.56
Southern cottonwood–willow riparian forest	—	0.08	0.08
Southern sycamore–alder riparian woodland	—	0.58	0.58
Southern willow scrub	0.80	1.88	1.88
Vernal pool	1.33	—	1.73[2]
Total riparian/wetlands	*3.93*	*5.37*	*7.10*
Non-wetland Waters/Streambed			
Ephemeral Stream Channel (Developed – Concrete Channel)	0.03	0.03	—
Ephemeral Stream Channel (Disturbed Wetland)	0.11	0.11	0.11

Table 5
Jurisdictional Aquatic Resources in the San Vicente Reservoir Alternative (Acres)

Jurisdictional Aquatic Resource	ACOE/RWQCB[1]	CDFW[1]	City of San Diego Wetlands[1]
Ephemeral Stream Channel (Non-vegetated Channel)	1.69	0.95	0.94
Intermittent stream channel	0.06	0.06	0.06
Perennial stream channel/lake	24.10	24.10	24.10
Total non-wetland waters/streambed	*25.99*	*25.26*	*25.24*
Total jurisdictional area[3]	**29.92**	**30.63**	**32.31**

Notes:
1 The acreages listed in the ACOE/RWQCB, CDFW, and City of San Diego Wetlands columns overlap and should not be summed together.
2 This 1.73 acre of vernal pool may also be regulated by the RWQCB.
3 Acreage may not sum precisely due to rounding.

ACOE- and RWQCB-jurisdictional areas within the San Vicente Reservoir Alternative total 29.92 acres, including 3.93 acres of jurisdictional wetlands and 25.99 acres of non-wetland stream channels/lake. Vernal pools within MCAS Miramar are considered ACOE- and RWQCB-jurisdictional and total 1.33 acres. This total includes the vernal pools within the LFG Pipeline (0.45 acre), and the San Vicente Pipeline – Repurposed 36-inch Recycled Water Line (0.87 acre) study areas.

CDFW jurisdiction extends over all areas under ACOE and RWQCB jurisdiction discussed above and includes areas that meet ACOE wetland (i.e., hydrophytic) vegetation criteria but lack wetlands hydrology and/or hydric soils indicators. CDFW-jurisdictional areas on site total 30.63 acres, including 5.37 acres of riparian habitat and 25.26 acres of non-wetland stream channels/lake.

The San Vicente Reservoir Alternative includes 0.03 acre within the Coastal Overlay Zone.

The majority of the jurisdictional aquatic resources are considered wetlands by the City of San Diego, with the exception of 0.75 acre of ephemeral stream channels (i.e., developed – concrete channel and non-vegetated channel) that do not meet the City's criteria for a wetland. Also included only under City jurisdiction, and potentially under RWQCB jurisdiction, are vernal pools, totaling 1.73 acre. Vernal pools occur within the study area of the following four components: LFG Pipeline (0.45 acre), MBC (0.03 acre), NCPWF (0.38 acre), and the along the San Vicente Pipeline – Repurposed 36-inch Recycled Water Line (0.87 acre). The vernal pools at the NCPWF, and the one vernal pool at the MBC are small, isolated, and do not support listed species. However, RWQCB may assert jurisdiction over the vernal pools as wetland waters of the state under the Porter-Cologne Act. The vernal pools would be considered City wetlands in accordance with the City's Biological Guidelines (City of San Diego 2012).

Data Stations

Vegetation, hydrology, and soils were examined at 40 wetland sampling points (data stations) within the Study Area (Figures 6A–6P) to determine the extent of jurisdictional aquatic resources. Due to access limitations and vegetation cover, some data stations are located outside the feature but within representative conditions of the feature. Table 6 lists the results of these data stations in terms of the three criteria that determine jurisdiction: vegetation, hydrology, and soils. Appendix A includes the data station forms, and Appendix B includes representative photos at each data station.

Table 6
Jurisdictional Data Station Results

Data Station	Wetland Vegetation	Wetland Soils	Hydrology	Jurisdictional Determination
1a	No	No	Yes	ACOE/CDFW/RWQCB
1b	No	Yes	Yes	ACOE/CDFW/RWQCB
1c	Yes	No	Yes	ACOE/CDFW/RWQCB
1d	No	No	No	CDFW
2	Yes	No	No	CDFW
3a	Yes	Yes	Yes	ACOE/CDFW/RWQCB
3b	No	No	No	Non-jurisdictional
4a	Yes	Yes	Yes	ACOE/CDFW/RWQCB
4b	Yes	Yes	Yes	ACOE/CDFW/RWQCB
4c	No	No	No	Non-jurisdictional
5a	Yes	No	Yes	ACOE/CDFW/RWQCB
5b	No	No	No	Non-jurisdictional
6a	No	No	Yes	ACOE/CDFW/RWQCB
6b	Yes	No	No	CDFW
6c	No	No	No	CDFW
6d	No	No	No	CDFW
7a	No	No	Yes	ACOE/CDFW/RWQCB
7b	No	No	No	Non-jurisdictional
8	No	No	Yes	ACOE/CDFW/RWQCB
9a	No	No	Yes	ACOE/CDFW/RWQCB
9b	Yes	No	No	CDFW
9c	No	No	No	Non-jurisdictional
10	Yes	No	Yes	CDFW
11	Yes	No	No	CDFW
12a	No	Yes	Yes	ACOE/CDFW/RWQCB
12b	Yes	Yes	Yes	ACOE/CDFW/RWQCB
12c	Yes	Yes	Yes	ACOE/CDFW/RWQCB

Table 6
Jurisdictional Data Station Results

Data Station	Wetland Vegetation	Wetland Soils	Hydrology	Jurisdictional Determination
13	Yes	No	No	CDFW
14a	Yes	Yes	Yes	ACOE/CDFW/RWQCB
14b	No	No	Yes	ACOE/CDFW/RWQCB
15a	No	Yes	Yes	ACOE/CDFW/RWQCB
15b	Yes	Yes	Yes	ACOE/CDFW/RWQCB
16a	Yes	No	Yes	CDFW
16b	No	No	No	Non-jurisdictional
17a	Yes	Yes	Yes	ACOE/CDFW/RWQCB
17b	Yes	Yes	Yes	ACOE/CDFW/RWQCB
17c	No	No	No	Non-jurisdictional
18	No	No	Yes	ACOE/CDFW/RWQCB
19a	No	No	No	Non-jurisdictional
19b	Yes	Yes	Yes	ACOE/CDFW/RWQCB

Potential Vernal Pool Areas

As stated in the methods, HELIX provided vernal pool data for areas surveyed in 2015/2016 (HELIX 2016c) over a variation of the Study Area at that time. The vernal pool survey area covered a portion of the jurisdictional delineation Study Area. The delineation focused on riparian vegetation communities and areas with NHD or topography that indicated potential aquatic features. Based on soil types (hydric and clay soils), slope (0%–10%), and vegetation, there may be potential for additional vernal pool features to occur in upland areas that have not been surveyed. On November 29, 2016, Dudek biologist Brock Ortega visited these areas and further refined the potential locations. Figures 7A–7F, Potentially Suitable for Vernal Pools, show these areas that were surveyed during the 2016/2017 wet season.

APPLICABLE REGULATIONS AND PERMIT REQUIREMENTS

Local – City of San Diego

Section 114 of the San Diego Municipal Code describes specific development regulations pertaining to sensitive biological resources, including wetlands. The City's definition of wetlands is broader than the definition applied by ACOE. Guidelines that supplement the development regulation requirements described in this section are provided in the San Diego Municipal Code,

Land Development Code—Biology Guidelines (City of San Diego 2012). The majority of the waters of the United States and/or state are considered wetlands under the City's guidelines.

State and Federal

The following is a summary of permit requirements relative to the jurisdictional waters/wetlands identified on site.

ACOE

ACOE has two programs that allow for fill of jurisdictional waters pursuant to Section 404 of the Clean Water Act: Nationwide Permits (NWPs) and Individual Permits. A review of environmental impacts associated with authorizations under NWPs has been completed in accordance with the National Environmental Policy Act, and a determination has been made that, based on criteria included in NWPs, impacts resulting from authorization of its use across the nation will not result in more than minimal adverse effect on aquatic resources. Further review of the proposed impacts and consultation with ACOE would be required to determine whether any NWPs authorize the proposed activities. An Individual Permit can be pursued if no NWPs apply to the Proposed Action.

RWQCB

According to the federal Clean Water Act, ACOE may not authorize the fill of jurisdictional waters without certification that the authorized activity will not substantially impact water quality. This provision is known as a Section 401 Water Quality Certification. Within California, the 401 Water Quality Certification is issued by the RWQCB where the activity is located. The Study Area lies within the San Diego Region (Region 9) of the State Water Resources Control Board.

RWQCB typically accepts the ACOE jurisdictional determination and will process a 401 Water Quality Certification for the areas considered for authorization of impacts by ACOE following a review of short- and long-term water quality control measures and overall project avoidance, minimization, and mitigation of jurisdictional impacts. In general, water quality control measures are reviewed with greater scrutiny but still based on the applicable local and state discharge requirements. RWQCB has, in select cases, taken jurisdiction over lands not included within the ACOE jurisdiction, generally consisting of isolated surface water, additional CDFW-jurisdictional wetlands, and in the case of vernal pools, isolated wetlands. The State Water Resources Control Board is considering adopting a statewide wetlands definition that, as currently contemplated, would include CDFW-jurisdictional riparian areas. RWQCB will not be able to issue the 401 Water Quality Certification or Waste Discharge Requirement until a valid

California Environmental Quality Act (CEQA) document covering the Proposed Action has been certified/adopted by the lead agency.

CDFW

In accordance with the Section 1600 of the California Fish and Game Code, a Streambed Alteration Agreement is required for fill and/or vegetation removal within CDFW-jurisdictional riparian areas and streambeds. CDFW will not issue a Streambed Alteration Agreement until a valid CEQA document is certified/adopted.

California Coastal Act

As mentioned above, no features are considered regulated by the CCC. The jurisdictional delineation study area surveyed included a 50-foot buffer from the proposed impact area, and there are resources in the San Diego River floodplain within this buffer that would be considered wetlands within the Coastal Overlay Zone, and therefore would require adherence to the Coastal Overlay Zone wetland buffer regulations (City of San Diego 2012). According to the City's Biological Guidelines, a wetland buffer is an area surrounding a wetland that helps protect the function and value of the adjacent wetland by reducing physical disturbance; provides a transition zone where one habitat phases into another; and acts to slow flood waters for flood and erosion control, sediment filtration, water purification, ground water recharge (City of San Diego 2012). Within the Coastal Overlay Zone, wetland buffers should be a minimum of 100 feet wide (as determined on a case-by-case basis in consultation with CDFW, USFWS, and the ACOE) adjacent to a wetland. The width of the buffer is determined by factors such as type and size of development, sensitivity of the wetland resource to edge effects, topography, and the need for upland transition (City of San Diego 2012).

Should you have any questions regarding this report or require additional information, please do not hesitate to contact me at 760.479.4293 or cford@dudek.com.

Sincerely,

Callie Amoaku

Callie Amoaku
Biologist

Att: Figures 1–7F
Appendix A: Wetland Determination Data Forms
Appendix B: Representative Photographs

REFERENCES CITED

ACOE (U.S. Army Corps of Engineers). 1987. *Corps of Engineers Wetlands Delineation Manual.* Online ed. Environmental Laboratory, Wetlands Research Program Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station. January 1987. http://www.fedcenter.gov/Bookmarks/index.cfm?id=6403&pge_id=1606.

ACOE. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).* Environmental Laboratory, ERDC/EL TR-08-28. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center. September 2008. http://el.erdc.usace.army.mil/elpubs/pdf/trel08-28.pdf.

ACOE. 2009. Permit Number SPL-2006-01015-RRS. Issued to San Diego County Water Authority by ACOE, Los Angeles District. February 9, 2009.

ACOE. 2010. *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.* Wetland Regulatory Assistance Program, ERDC/CRREL TN-10-1. Prepared by K.E. Curtis and R.W. Lichvar. Hanover, New Hampshire: U.S. Army Corps of Engineers Research and Development Center Cold Regions Research and Engineering Laboratory. July 2010.

ACOE and EPA (U.S. Environmental Protection Agency). 2008. "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States* & *Carabell v. United States*." December 2, 2008. http://water.epa.gov/lawsregs/guidance/wetlands/upload/2008_12_3_wetlands_CWA_Jurisdiction_Following_Rapanos120208.pdf.

Adleberg, S. 2016a. San Vicente Reservoir Elevation. Email communication between S. Adleberg (City of San Diego) and B. Ortega (Dudek). October 28, 2016.

Adleberg, S. 2016b. Pond South of Miramar Reservoir. Email communication between S. Adleberg (City of San Diego) and B. Ortega (Dudek). October 18, 2016.

City of San Diego. 2012. *San Diego Municipal Code, Land Development Code—Biology Guidelines*. Amended April 23, 2012, by Resolution No. R-307376. https://www.sandiego.gov/sites/default/files/ldc_biology_guidelines_vphcp_wildlife-city_draft_july_2016.pdf.

City of San Diego. 2016a. "Miramar Reservoir." City of San Diego Official Website. Accessed October 18, 2016. https://www.sandiego.gov/water/recreation/reservoirs/miramar.

City of San Diego. 2016b. *Draft City of San Diego Vernal Pool Habitat Conservation Plan.* September 2016. https://www.sandiego.gov/sites/default/files/vphcp_public_draft.pdf.

Cowardin, L.M., V. Carter V., F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31.Washington, D.C.

Google Earth. 2016. Aerial photograph. 1:200 scale.

HELIX (HELIX Environmental Planning). 2016a. "HELIX Environmental GIS Data" [Shapefiles]. Received from City of San Diego on July 27, 2016.

HELIX. 2016b. "HELIX Environmental GIS Data" [Shapefiles]. Received from City of San Diego on September 14, 2016.

HELIX. 2016c. "Draft Existing Conditions Letter Report for the Pure Water San Diego Program North City Water Purifications Project." Letter report prepared by HELIX for S. Adleberg (City of San Diego). September 9, 2016.

HELIX. 2016d. "HELIX Environmental GIS Data (October 18, 2016)" [Shapefiles]. Received from City of San Diego on October 20, 2016.

Historic Aerials Online. 2016a. Historical image of Eastgate Mall. Accessed October 18, 2016.http://historicaerials.com/map/index.php?.

Historic Aerials Online. 2016b. Historical image of Clairemont Mesa. Accessed October 18, 2016.http://historicaerials.com/map/index.php?.

Historic Aerials Online. 2016c. Historical images of Miramar Reservoir: 1942, 1953, 1959. Accessed October 18, 2016.http://historicaerials.com/map/index.php?.

Historic Aerials Online. 2016d. Historical image of Vegas Drive. Accessed October 18, 2016.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game. October 1986.

Jepson Flora Project. 2016. Jepson eFlora. Berkeley, California: University of California. Accessed September 2016. http://ucjeps.berkeley.edu/cgi-bin/get_JM_name_data.pl.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. "The National Wetland Plant List: 2016 Wetland Ratings." *Phytoneuron* 2016(30): 1–17. ISSN 2153 733X.

Llerandi, A. 2017. "City of San Diego jurisdiction/Friars Rd. and 1-5 area." Email between A. Llerandi (California Coastal Commission) and S. Adleberg (City of San Diego). January 20, 2017.

Microsoft. 2016. Bing Aerial Imagery.

Munsell (Munsell Color). 2016. Munsell Color System. http://munsell.com/.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. March 2008. http://www.sdcanyonlands.org/pdfs/veg_comm_sdcounty_2008_doc.pdf.

SANDAG (San Diego Association of Governments). 2014. Orthoimagery consisting of 1-foot pixel resolution, 4-band orthoimages covering the San Diego region.

SANGIS. 1999. 2-Foot Elevation Data for the North City Project.

SDCWA and ACOE (San Diego County Water Authority and U.S. Army Corps of Engineers). 2008. *Final Environmental Impact Report/Environmental Impact Statement for the Carryover Storage and San Vicente Dam Raise Project*. SCH No. 2006101044. April 2008.

SDRWQCB (San Diego Regional Water Quality Control Board). 1995. "San Diego Hydrologic Basin Planning Area (SD)" [map]. Scale 1:250,000.

SDRWQCB. 2002. "Overview of San Diego Region Watershed Management Areas." Appendix A in *Watershed Management Approach for the San Diego Region*, Eighth Version. January 25, 2002. http://www.waterboards.ca.gov/sandiego/water_issues/programs/wmc/index.shtml.

SDSU (San Diego State University). n.d. "Elevation contour coverage for the entire San Diego region at a 40-foot contour interval." SDSU Department of Geography.

USDA (U.S. Department of Agriculture). 1994. Soil Conservation Service, National Technical Committee for Hydric Soils.

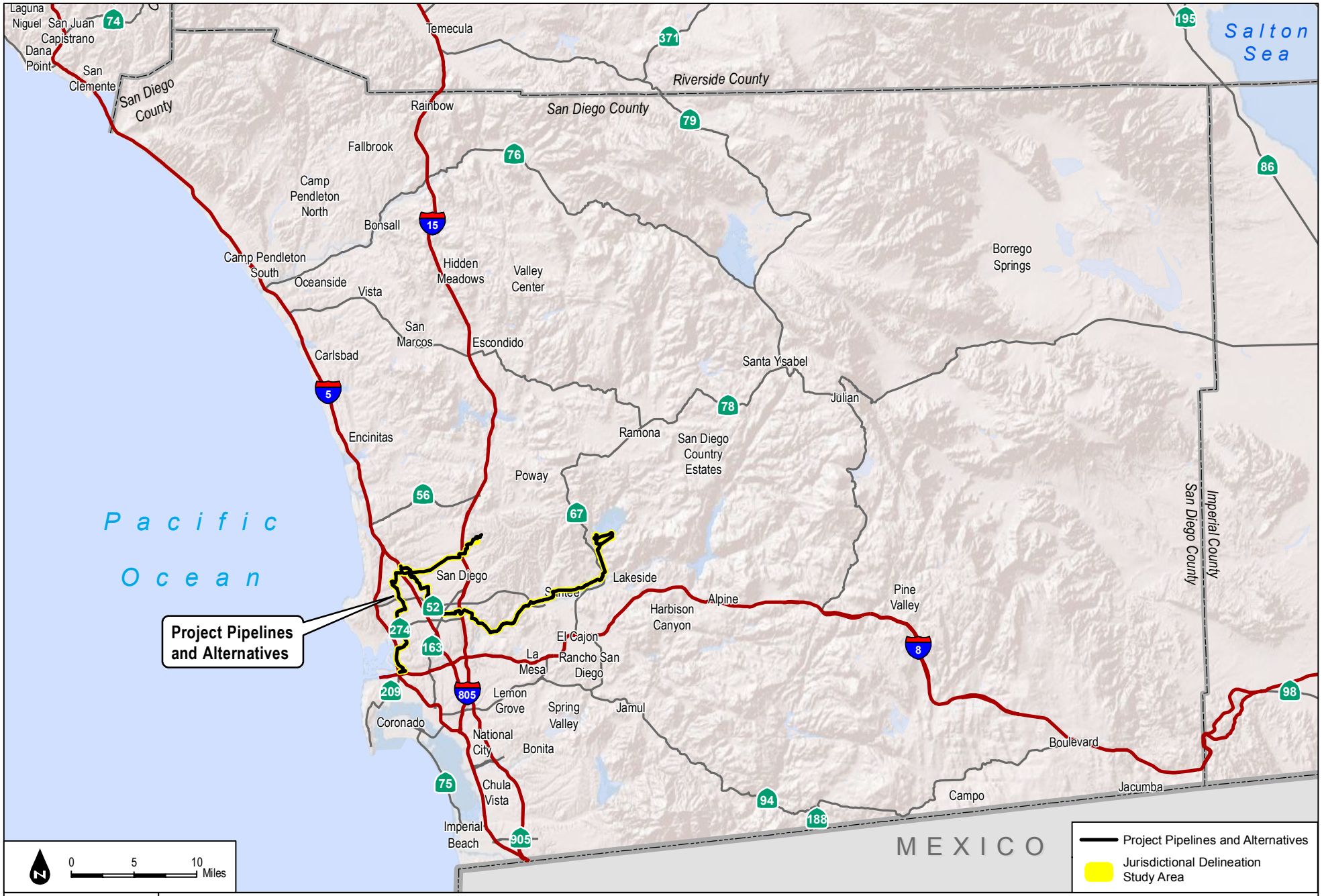
USDA. 2010. *Field Indicators of Hydric Soils in the United States.* Version 7.0.

USDA. 2016a. Web Soil Survey. USDA, Natural Resources Conservation Service, Web Soil Survey Staff. Accessed September 22, 2016. http://websoilsurvey.nrcs.usda.gov/.

USDA. 2016b. "California." State PLANTS Checklist. Accessed October 2016. http://plants.usda.gov/dl_state.html.

USFWS (U.S. Fish and Wildlife Service). 2016. "NWI Wetlands for California" [Shapefiles]. National Wetlands Inventory. Data last updated March 5, 2013. Accessed September 2016. http://www.fws.gov/wetlands/Data/State-Downloads.html.

USGS (U.S. Geological Survey). 2016. "National Hydrography Dataset" [digital GIS data]. Data last updated September 30, 2016. http://nhd.usgs.gov/.



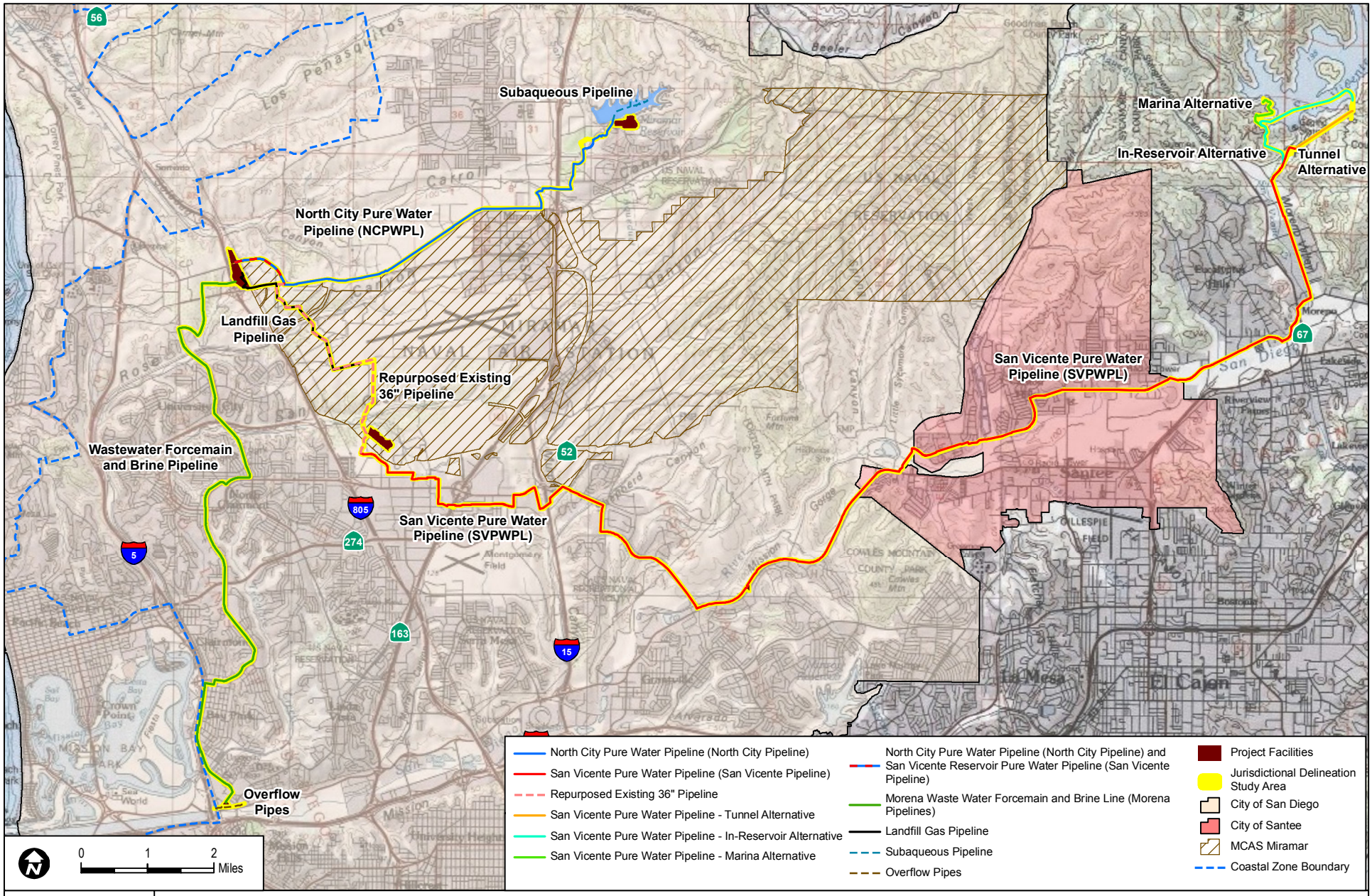
SOURCE: City San Diego 2016; ESRI 2016

FIGURE 1

Regional Map

DUDEK

North City Project Jurisdictional Delineation



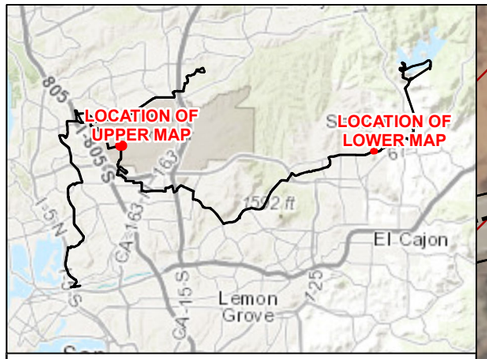
DUDEK

SOURCE: USGS 7.5-Minute Series Del Mar, Poway, San Vicente Reservoir, La Jolla, La Mesa, El Cajon Quadrangles; City of San Diego 2016; CA Coastal Commission

FIGURE 2

Vicinity Map

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pure Water Pipeline (SVPWPL)
- Repurposed Existing 36" Pipeline
- Electrical Transmission Line
- Jurisdictional Delineation Study Area
- No Property Access
- Potential Jurisdictional Resources
- Vegetation
- CSS, Diegan Coastal Sage Scrub
- CSSB, Diegan Coastal Sage Scrub: Baccharis-dominated
- DEV, Urban/Developed
- DH, Disturbed Habitat
- NNG, Non-Native Grassland
- NNV, Non-Native Vegetation
- NVC, Non-Vegetated Channel or Floodway
- dCSS, disturbed Diegan Coastal Sage Scrub

N 0 25 50 Feet

SOURCE: ESRI Word Topographic Basemap, 2016; Helix 2016; SANDAG 2016

DUDEK

FIGURE 3
Methods - No Access

North City Project Jurisdictional Delineation

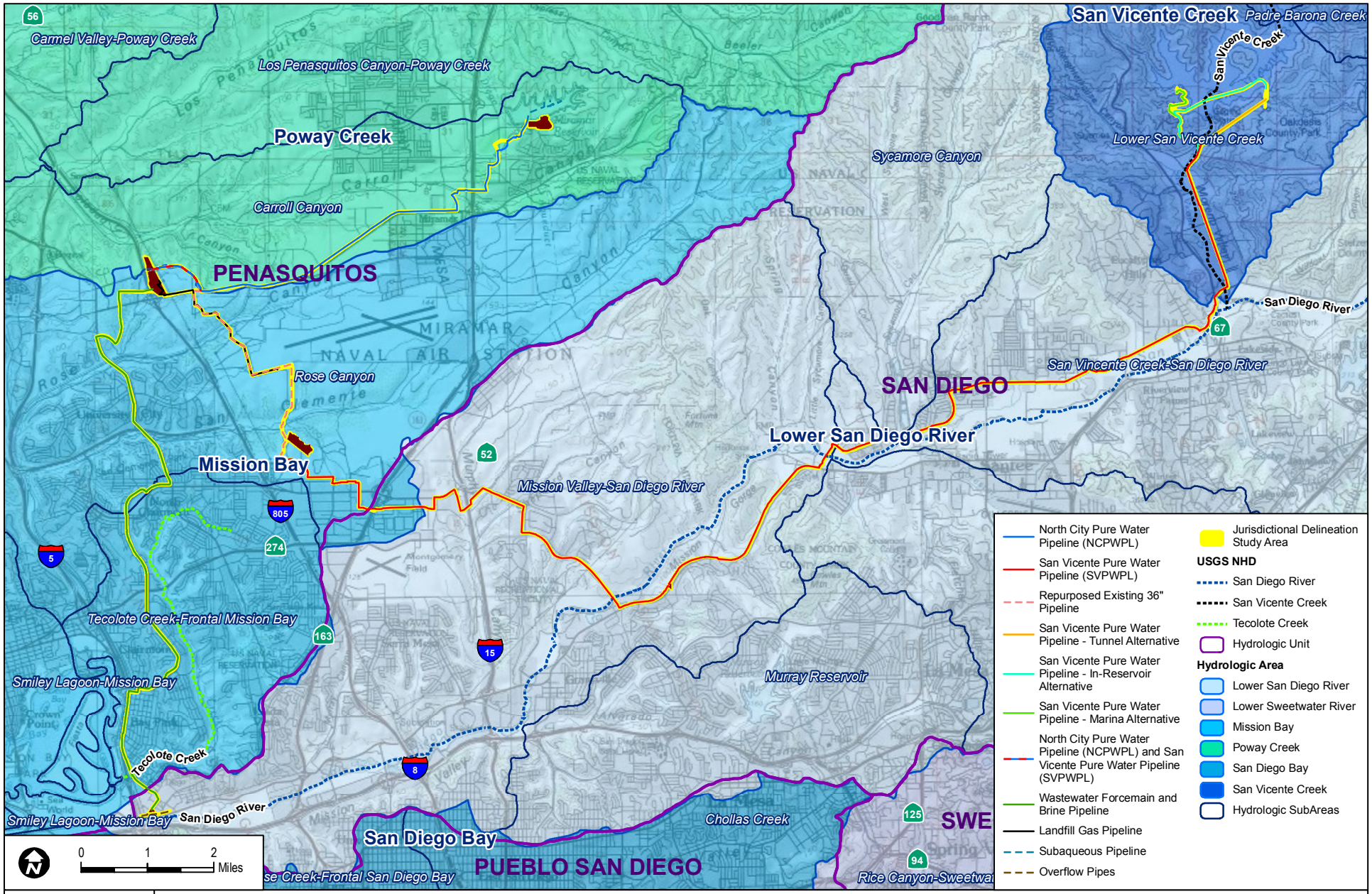
SOURCE: City of San Diego 2016; SanGIS 2016

DUDEK

FIGURE 4

Soils Map

North City Project Jurisdictional Delineation



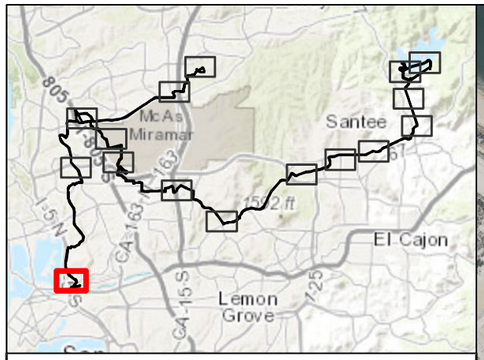
SOURCE: City of San Diego 2016; CA Dept. Water Resources; USGS

FIGURE 5

Hydrologic Setting

DUDEK

North City Project Jurisdictional Delineation



LEGEND

- Moreno Wastewater Forcemain and Brine Line
- Overflow Pipes
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
  - CAM, Cismontane Alkali Marsh
  - FWM, Coastal and Valley Freshwater Marsh
  - MFS, Mulefat Scrub
  - NVC, Non-Vegetated Channel or Floodway
  - SWS, Southern Willow Scrub
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral
- Wetland or Riparian Area

California Coastal Commission

- CCC-regulated Wetlands
- Coastal Zone Boundary

N

0 500 1,000 Feet

NVC
SWS
CAM
MFS
FWM
CAM
SWS
19a
19b
SWS

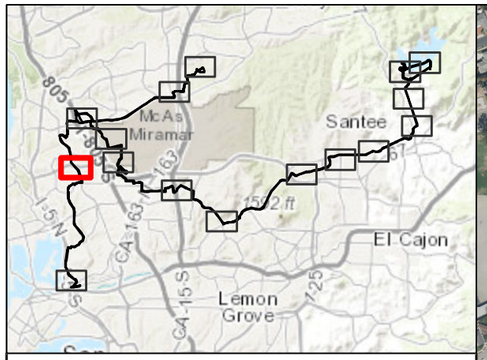
DUDEK

SOURCE: SANDAG, 2016; CA Coastal Commission

FIGURE 6A

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- Moreno Wastewater Forcemain and Brine Line
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
- NVC, Non-Vegetated Channel or Floodway
- SWRF, Southern Arroyo Willow Riparian Forest
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral

Waters of the State (CDFW Only)

- Wetland or Riparian Area

Waters of the U.S. and State (ACOE/RWQCB)/Riparian Habitat (CDFW)

- Non-wetland Water - Ephemeral (ACOE/RWCQB)/Riparian Area (CDFW)

0 500 1,000 Feet

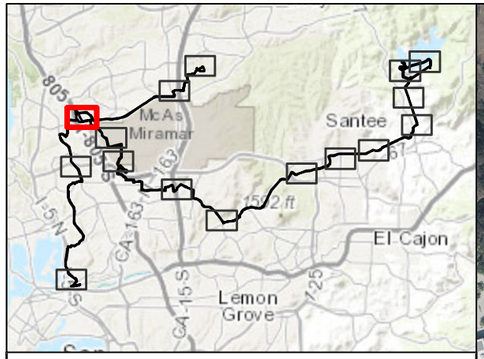
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6B

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- North City Pipeline
- San Vicente Pipeline
- Repurposed Existing 36" Pipeline
- North City Pipeline and San Vicente Pipeline
- Moreno Wastewater Forcemain and Brine Line
- Landfill Gas Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
  - FWM, Coastal and Valley Freshwater Marsh
  - MFS, Mulefat Scrub
  - SWS, Southern Willow Scrub
  - VP, Vernal Pool
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Wetland or Riparian Area

Waters of the State (CDFW Only)

- Wetland or Riparian Area

Waters of the State (RWQCB/CDFW)

- Wetland or Riparian Area

0 500 1,000 Feet

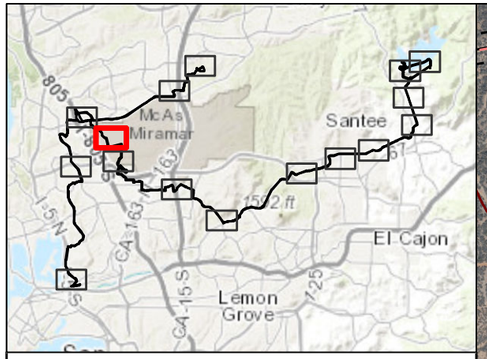
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6C

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- Repurposed Existing 36" Pipeline
- Landfill Gas Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
- FWM, Coastal and Valley Freshwater Marsh
- NVC, Non-Vegetated Channel or Floodway
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral
- Wetland or Riparian Area

Waters of the State (CDFW Only)

- Non-wetland Water - Ephemeral

0 500 1,000 Feet

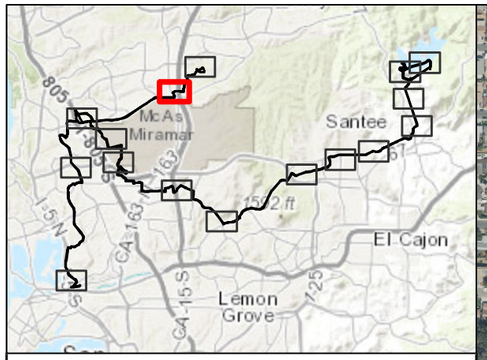
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6D

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- North City Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
- NVC, Non-Vegetated Channel or Floodway
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral

0 500 1,000 Feet

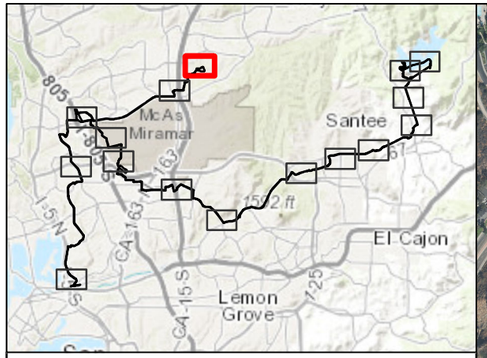
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6E

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- North City Pipeline
- Subaqueous Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
  - FWM, Coastal and Valley Freshwater Marsh
  - NVC, Non-Vegetated Channel or Floodway
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral
- Non-wetland Water - Perennial
- Wetland or Riparian Area

Waters of the State (ACOE/RWQCB/CDFW)

- Water of the State (ACOE/RWQCB/CDFW), Wetland or Riparian Area

0 500 1,000 Feet

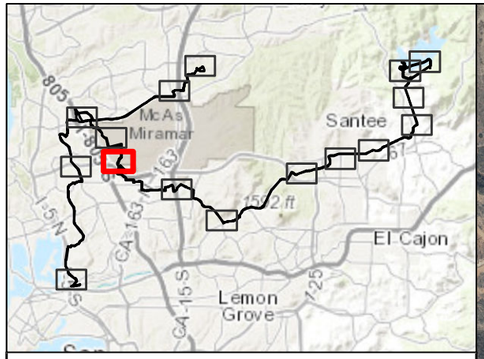
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6F

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- Repurposed Existing 36" Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
  - NVC, Non-Vegetated Channel or Floodway
  - SARW, Southern Sycamore-Alder Riparian Woodland
  - SWS, Southern Willow Scrub
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral

Waters of the State (CDFW Only)

- Wetland or Riparian Area

0 500 1,000 Feet

SARW
6d
6c
SARW
SWS
SWS
6a
SARW
SWS
SARW
NVC
6b
SWS

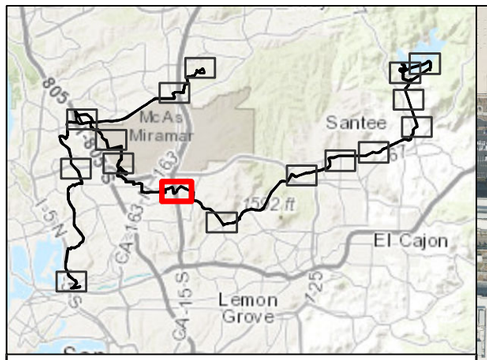
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6G

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
  - NVC, Non-Vegetated Channel or Floodway
  - SCWRF, Southern Cottonwood-Willow Riparian Forest
  - SWS, Southern Willow Scrub
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral
- Non-wetland Water - Intermittent

Waters of the State (CDFW Only)

- Wetland or Riparian Area

0 500 1,000 Feet

10 NVC SWS

11 SWS NVC SWS

9c NVC 9a SCWRF 9b SCWRF

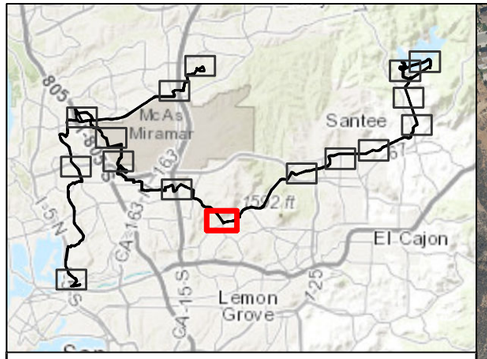
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6H

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
  - ARU, Arundo-Dominated Riparian
  - FWM, Coastal and Valley Freshwater Marsh
  - OW, Open Water
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Perennial

0 500 1,000 Feet

ARU
12c
FWM
12b
12a
OW

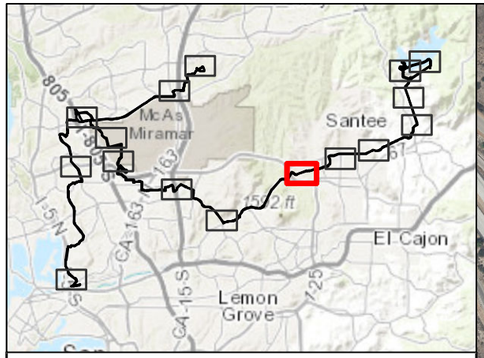
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6I

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
- NVC, Non-Vegetated Channel or Floodway
- SWRF, Southern Arroyo Willow Riparian Forest
- SWS, Southern Willow Scrub
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Perennial
- Wetland or Riparian Area

Waters of the State (CDFW Only)

- Wetland or Riparian Area

0 500 1,000 Feet

SWRF
13
SWRF
SWRF
SWRF
14a
14b
NVC
SWS
15b
15a

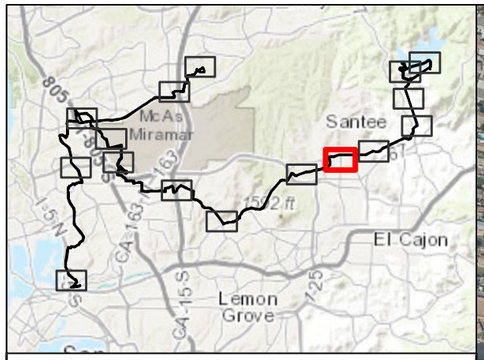
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6J

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
- NVC, Non-Vegetated Channel or Floodway

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral

NVC

NVC

0 500 1,000 Feet

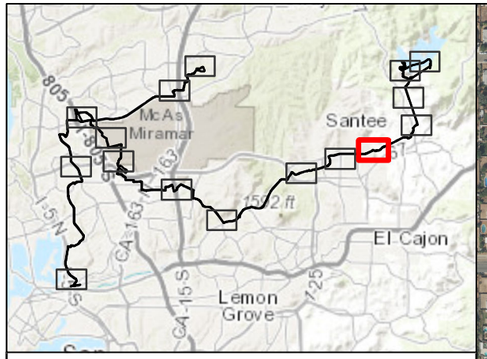
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6K

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Potential Wetland or Riparian Area

Waters of the State (RWQCB/CDFW)

- Wetland or Riparian Area

0 500 1,000 Feet

SOURCE: SANDAG, 2016; CA Coastal Commission

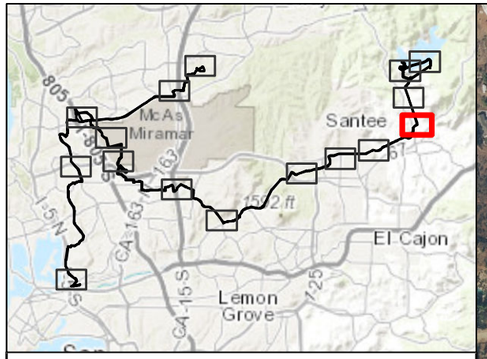
DUDEK

FIGURE 6L

Special Aquatic Resources

North City Project Jurisdictional Delineation

Date: 3/8/2017 - Last saved by: jsmith - Path: Z:\Projects\6\2070\MAPDOC\DOCUMENT\DEIR\Fig6_SpecialAquaticResources.mxd



LEGEND

- San Vicente Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
- SWS, Southern Willow Scrub
- Data Stations

Waters of the U.S. and State (ACOE/RWQCB)/Riparian Habitat (CDFW)

- Non-wetland Water - Ephemeral (ACOE/RWCQB)/Riparian Area (CDFW)

0 500 1,000 Feet

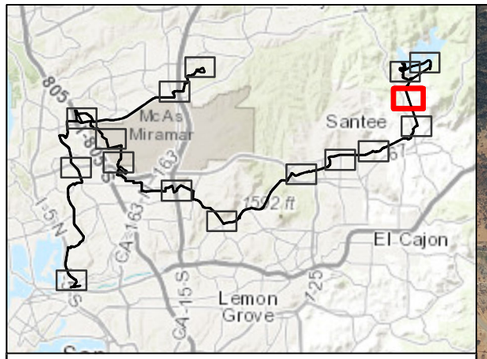
SOURCE: SANDAG, 2016; CA Coastal Commission

FIGURE 6M

Special Aquatic Resources

DUDEK

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
  - ARU, Arundo-Dominated Riparian
  - MFS, Mulefat Scrub
  - dMFS, disturbed Mulefat Scrub

Waters of the U.S. and State (ACOE/RWQCB)/Riparian Habitat (CDFW)

- Non-wetland Water - Ephemeral (ACOE/RWCQB)/Riparian Area (CDFW)

0 500 1,000 Feet

MFS
dMFS
ARU

SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6N

Special Aquatic Resources

North City Project Jurisdictional Delineation

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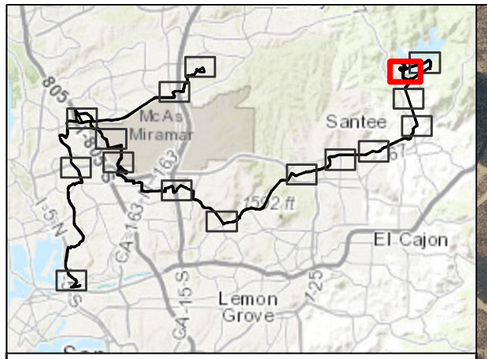


LEGEND

- San Vicente Pipeline
- San Vicente Pure Water Pipeline - Tunnel Alternative
- San Vicente Pure Water Pipeline - In-Reservoir Alternative
- San Vicente Pure Water Pipeline - Marina Alternative
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
- NVC, Non-Vegetated Channel or Floodway
- OW, Open Water
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral
- Non-wetland Water - Perennial

0 500 1,000 Feet

OW
OW
OW
OW
7b
7a
NVC

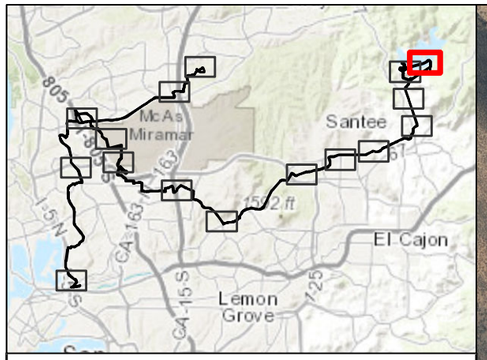
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6O

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pure Water Pipeline - Tunnel Alternative
- San Vicente Pure Water Pipeline - In-Reservoir Alternative
- Jurisdictional Delineation Study Area
- Project Study Area
- Vegetation (Wetland Communities Only)
- NVC, Non-Vegetated Channel or Floodway
- OW, Open Water
- Data Stations

Waters of the U.S. (ACOE/RWQCB/CDFW)

- Non-wetland Water - Ephemeral
- Non-wetland Water - Perennial

0 500 1,000 Feet

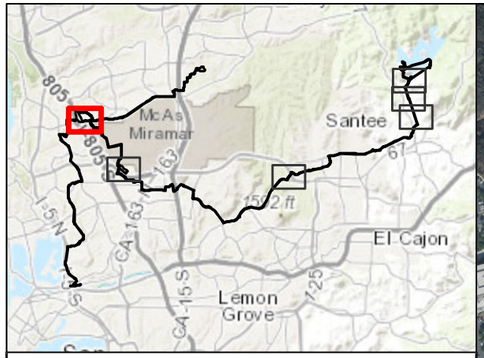
SOURCE: SANDAG, 2016; CA Coastal Commission

DUDEK

FIGURE 6P

Special Aquatic Resources

North City Project Jurisdictional Delineation



LEGEND

- North City Pipeline
- San Vicente Pipeline
- Repurposed Existing 36" Pipeline
- North City Pipeline and San Vicente Pipeline
- Moreno Wastewater Forcemain and Brine
- Landfill Gas Pipeline
- Vernal Pool Study Area
- Project Study Area
- Helix Vernal Pool Study Area
- Potential for Vernal Pools

0 500 1,000 Feet

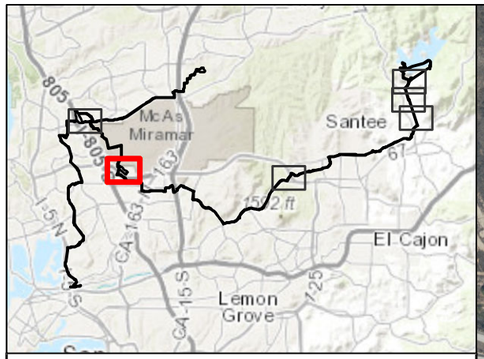
DUDEK

SOURCE: SANDAG, 2016; SanGIS 2016

FIGURE 7A

Potentially Suitable for Vernal Pools

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Repurposed Existing 36" Pipeline
- Vernal Pool Study Area
- Project Study Area
- Helix Vernal Pool Study Area
- Potential for Vernal Pools

0 500 1,000 Feet

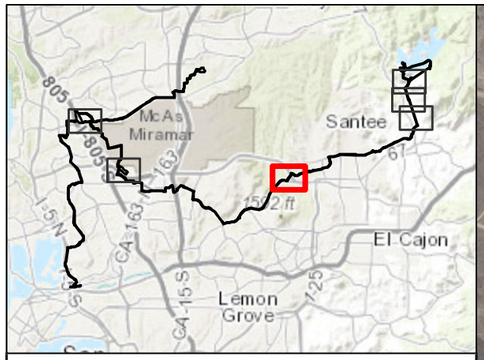
SOURCE: SANDAG, 2016; SanGIS 2016

DUDEK

North City Project Jurisdictional Delineation

FIGURE 7B

Potentially Suitable for Vernal Pools



LEGEND

- San Vicente Pipeline
- Vernal Pool Study Area
- Project Study Area
- Potential for Vernal Pools

0 500 1,000 Feet

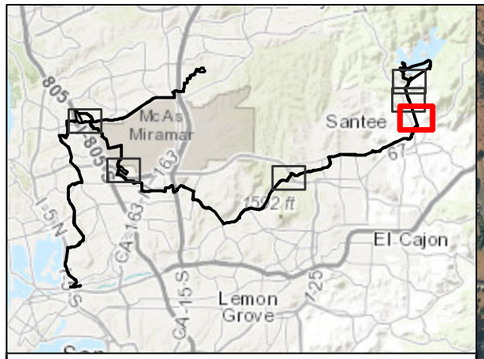
SOURCE: SANDAG, 2016; SanGIS 2016

FIGURE 7C

Potentially Suitable for Vernal Pools

DUDEK

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Vernal Pool Study Area
- Project Study Area
- Potential for Vernal Pools

0 500 1,000 Feet

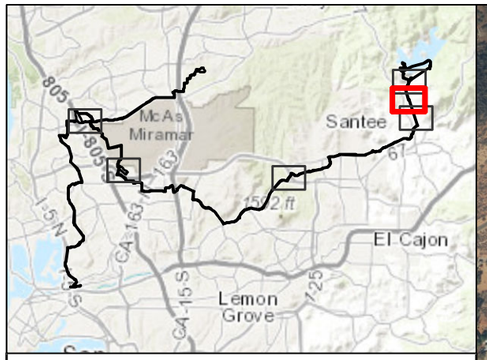
SOURCE: SANDAG, 2016; SanGIS 2016

FIGURE 7D

Potentially Suitable for Vernal Pools

DUDEK

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- Vernal Pool Study Area
- Project Study Area
- Potential for Vernal Pools

0 500 1,000 Feet

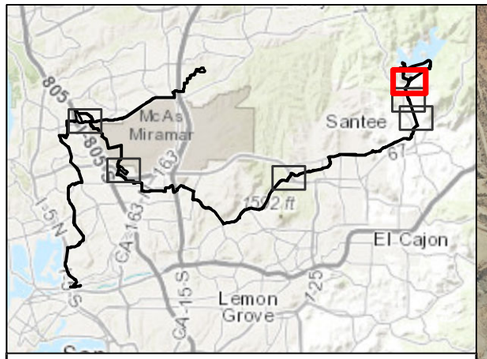
SOURCE: SANDAG, 2016; SanGIS 2016

FIGURE 7E

Potentially Suitable for Vernal Pools

DUDEK

North City Project Jurisdictional Delineation



LEGEND

- San Vicente Pipeline
- San Vicente Pure Water Pipeline - Tunnel Alternative
- San Vicente Pure Water Pipeline - In-Reservoir Alternative
- San Vicente Pure Water Pipeline - Marina Alternative
- Vernal Pool Study Area
- Project Study Area
- Potential for Vernal Pools

0 500 1,000 Feet

SOURCE: SANDAG, 2016; SanGIS 2016

DUDEK

FIGURE 7F

Potentially Suitable for Vernal Pools

North City Project Jurisdictional Delineation

APPENDIX A

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/26/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 1a

Investigator(s): Callie Ford, Danielle Mullen | Section, Township, Range: 28, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.20 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater forested/shrub

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area**
Wetland Hydrology Present?	Yes (●)	No ( )	**within a Wetland?** Yes ( ) No (●)

Remarks: The data station was taken outside of the low flow channel within the active floodplain.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis sarothroides*	5	No	FACU
2. *Malosma laurina*	2	No	Not Listed
3.			
4.			
5.			
Total Cover:	7 %		
Herb Stratum			
1. *Ambrosia psilostachya*	25	Yes	FACU
2. *Foeniculum vulgare*	2	No	Not Listed
3. *Heterotheca grandiflora*	1	No	Not Listed
4. *Plantago lanceolata*	5	No	FAC
5.			
6.			
7.			
8.			
Total Cover:	33 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	5	x 3 =	15
FACU species	30	x 4 =	120
UPL species	5	x 5 =	25
Column Totals:	40 (A)		160 (B)

Prevalence Index = B/A = 4.00

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 1a

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[3]	Remarks
0-4	10 YR 3/2	100					Sand	
4-6	N/A	100					Cobbles	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 4

Hydric Soil Present? Yes ○ No ◉

Remarks: The sandy, cobbly soil sample had a restrictive layer of bedrock at 4 inches deep.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: The data station is adjacent to the low flow channel within the active floodplain.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program City/County: San Diego/San Diego Sampling Date: 09/26/2016

Applicant/Owner: City of San Diego State: CA Sampling Point: 1b

Investigator(s): Callie Ford, Danielle Mullen Section, Township, Range: 28, 15S, 3W

Landform (hillslope, terrace, etc.): Low flow channel Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR): C - Mediterranean California Lat: 32.84 Long: -117.20 Datum:

Soil Map Unit Name: Riverwash NWI classification: Freshwater forrested/shrub

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 ○	No ◉	
Hydric Soil Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: This data station was taken within the active floodplain in a low flow channel. The recent drought may have impacted this area.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (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.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: This data station is within the non-vegetated, low flow channel in open water.

SOIL

Sampling Point: 1b

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
							Sandy	
							Cobbles	
							Pebbles	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: The soil is assumed to be hydric based on saturation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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): 24

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/26/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 1c

Investigator(s): Callie Ford, Danielle Mullen | Section, Township, Range: 28, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.20 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater forrested/shrub

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 ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: This data station was taken within the active floodplain adjacent to the low flow channel. The recent drought may have impacted this area.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	30	Yes	FACW
2. *Salix lasiolepis*	15	Yes	FACW
3. *Platanus racemosa*	25	Yes	FAC
4.			
Total Cover:	70 %		
Sapling/Shrub Stratum			
1. *Juncus acutus*	5	No	FACW
2. *Baccharis salicifolia*	5	No	FAC
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Pennisetum spp.*	2	No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	2 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	50	x 2 =	100
FAC species	30	x 3 =	90
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	80 (A)		190 (B)

Prevalence Index = B/A = 2.38

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.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: 1c

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[3]	Remarks
0-10	10 YR 2/2	50					Sandy	
0-10	N/A	50					Cobble	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Cobble

Depth (inches): 0-10

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: This data station is located within the floodplain and outside the low flow channel.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/26/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 1d

Investigator(s): Callie Ford, Danielle Mullen | Section, Township, Range: 28, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.19 | Datum:

Soil Map Unit Name: Salinas clay loam | NWI classification: None

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 ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	60	Yes	Not Listed
2. *Platanus racemosa*	60	Yes	FAC
3.			
4.			
Total Cover:	120%		
Sapling/Shrub Stratum			
1. *Toxicodendron diversilobum*	70	Yes	FACU
2.			
3.			
4.			
5.			
Total Cover:	70 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	60	x 3 =	180
FACU species	70	x 4 =	280
UPL species	60	x 5 =	300
Column Totals:	190 (A)		760 (B)

Prevalence Index = B/A = 4.00

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: The jurisdiction is CDFW only from the toe of the slope to the sidewalk along Genesse Ave.

SOIL

Sampling Point: 1d

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No soil sample was taken due to very dense poison oak.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks: This data station is located on a slope above the ACOE active floodplain, and there is no evidence of a bed and bank.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/26/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 2

Investigator(s): Callie Ford, Danielle Mullen | Section, Township, Range: 09, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.87 | Long: -117.19 | Datum:

Soil Map Unit Name: Altamont clay/Redding cobbly loam | NWI classification: Freshwater emergent wetland

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 (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	70	Yes	FACW
2.			
3.			
4.			
Total Cover:	70 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	5 %		
Herb Stratum			
1. *Helminthotheca echioides (dead)*	20	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 60 % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	70	x 2 =	140
FAC species	5	x 3 =	15
FACU species	20	x 4 =	80
UPL species		x 5 =	0
Column Totals:	95 (A)		235 (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2	10 YR 3/2	100					Loam	
2-20	10 YR 3/2	5					Loam	
2-20	2.5 YR 5/4	95					Silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks: There is no bed and bank present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 3a

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 32, 14S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.91 | Long: -117.10 | Datum:

Soil Map Unit Name: Redding-urban land complex | NWI classification: Freshwater emergent wetland

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 (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: This data station was taken within freshwater marsh adjacent to the San Vicente Reservoir.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	5	No	FAC
2. *Baccharis sarothroides*	10	No	FACU
3. *Salvia mellifera*	1	No	Not Listed
4.			
5.			
Total Cover:	16 %		
Herb Stratum			
1. *Schoenoplectus acutus*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species		x 2 =	0
FAC species	5	x 3 =	15
FACU species	10	x 4 =	40
UPL species	1	x 5 =	5
Column Totals:	116 (A)		160 (B)

Prevalence Index = B/A = 1.38

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 3a

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[3]	Remarks
0-3	7.5 YR 2.5/1	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Roots, gravel

Depth (inches): 3

Hydric Soil Present? Yes ◉ No ○

Remarks: Assume hydric soils due to inundation and obligate vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 3b

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 32, 14S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.91 | Long: -117.10 | Datum:

Soil Map Unit Name: Redding-urban land complex | NWI classification: Freshwater emergent wetland

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis sarothroides*	30	Yes	FACU
2. *Salvia mellifera*	3	No	Not Listed
3. *Baccharis salicifolia*	15	No	FAC
4.			
5.			
Total Cover:	48 %		
Herb Stratum			
1. *Schoenoplectus acutus*	5	No	OBL
2. *Unknown herb*	5	No	
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species		x 2 =	0
FAC species	15	x 3 =	45
FACU species	30	x 4 =	120
UPL species	3	x 5 =	15
Column Totals:	53 (A)		185 (B)

Prevalence Index = B/A = 3.49

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 3b

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[3]	Remarks
0-6	N/A	50					Gravel/cobble	Fill material
0-6	7.5 YR 4/3	50					Sandy loam	Fill material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 4a

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 32, 14S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.91 | Long: -117.10 | Datum:

Soil Map Unit Name: Redding gravelly loam | NWI classification: Freshwater pond

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 (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: This data station was taken within freshwater marsh south of the Miramar Reservoir.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Typha domingensis*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 100.0 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 4a

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[3]	Remarks
0-12	2.5 YR 3/1	98	7.5 YR 4/6	2	C	PL	Silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Assume hydric soils due to inundation and obligate vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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): 0

Water Table Present? Yes ◉ No ○ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 4b

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 32, 14S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.91 | Long: -117.10 | Datum:

Soil Map Unit Name: Redding gravelly loam | NWI classification: Freshwater pond

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 (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: This data station is located near the freshwater marsh.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Schoenoplectus spp.*	60	Yes	OBL
2. *Pluchea odorata*	30	Yes	FACW
3. *Atriplex prostrata*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	40	x 2 =	80
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	100 (A)		140 (B)

Prevalence Index = B/A = 1.40

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 4b

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[3]	Remarks
0-12	N/A	20					Cobble	
0-6	7.5 YR 2.5/1	70	5 YR 3/4	3	C	M	Loamy sand	
0-12	7.5 YR 2.5/1	70	5 YR 4/6	1	C	PL	Loamy sand	
0-12	10 YR 4/2	10					Loamy sand	
6-12	7.5 YR 2.5/1	70	5 YR 3/4	8	C	M	Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Assume hydric soils due to inundation and obligate vegetation.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 4c

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 32, 14S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.91 | Long: -117.10 | Datum:

Soil Map Unit Name: Redding gravelly loam | NWI classification: Freshwater pond

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: This data station was taken within a eucalyptus grove outside of the freshwater marsh (see map 15, and data station A6a and A6b).

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Eucalyptus globulus*	40	Yes	Not Listed
2.			
3.			
4.			
Total Cover:	40 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species	40	x 5 =	200
Column Totals:	40 (A)		200 (B)

Prevalence Index = B/A = 5.00

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 4c

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[3]	Remarks
0-6	7.5 YR 3/2	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 5a

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 05, 15S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.90 | Long: -117.11 | Datum:

Soil Map Unit Name: Redding cobbly loam | NWI classification: Freshwater forrested/shrub wetland

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 (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Cotula coronopifolia*	20	Yes	OBL
2. *Anemopsis californica*	10	No	OBL
3. *Cyperus eragrostis*	3	No	FACW
4. *Paspalum dilatatum*	50	Yes	FAC
5.			
6.			
7.			
8.			
Total Cover:	83 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	3	x 2 =	6
FAC species	50	x 3 =	150
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	83 (A)		186 (B)

Prevalence Index = B/A = 2.24

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks: While there is a small amount of vegetation present in patches in the channel (including where sampled in the study area) the channel itself is generally unvegetated and does not contain enough vegetation to map as a vegetation community.

SOIL

Sampling Point: 5a

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[3]	Remarks
0-4	10 YR 2/1	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 4

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 5b

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 05, 15S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.90 | Long: -117.11 | Datum:

Soil Map Unit Name: Redding cobbly loam | NWI classification: None

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Washingtonia robusta*	5	No	FACW
2. *Eucalyptus camaldulensis*	10	No	FAC
3.			
4.			
Total Cover:	15 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	15 (A)		40 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

- [ ] Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 5b

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	10 YR 5/3	99	10 YR 5/8	1	C	M	Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 6a

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 26, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.16 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater Forested/Shrub wetland

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 ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (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.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: Data station represents the unvegetated channel.

SOIL

Sampling Point: 6a

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[3]	Remarks
0-8	N/A	50					Cobble	
0-8	10 YR 3/2	50					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 6b

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 26, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.16 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: None

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 (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus racemosa*	50	Yes	FAC
2. *Salix laevigata*	35	Yes	FACW
3. *Quercus agrifolia*	3	No	Not Listed
4.			
Total Cover:	88 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	20	No	FAC
2. *Toxicodendron diversilobum*	1	No	FACU
3. *Cyperus eragrostis*	5	No	FACW
4.			
5.			
Total Cover:	26 %		
Herb Stratum			
1. *Juncus mexicanus*	10	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 50 % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	50	x 2 =	100
FAC species	70	x 3 =	210
FACU species	1	x 4 =	4
UPL species	3	x 5 =	15
Column Totals:	124 (A)		329 (B)

Prevalence Index = B/A = 2.65

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 6b

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[3]	Remarks
0-8	10 YR 4/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Rocks

Depth (inches): 8

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 6c

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 26, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.16 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: None

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: Data Station taken within area mapped as Southern Sycamore-Alder Riparian Woodland.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	40	Yes	FACW
2. *Quercus agrifolia*	30	Yes	Not Listed
3.			
4.			
Total Cover:	70 %		
Sapling/Shrub Stratum			
1. *Toxicodendron diversilobum*	50	Yes	FACU
2. *Baccharis sarothroides*	<1	No	FACU
3. *Artemisia dracunculus*	<1	No	Not Listed
4.			
5.			
Total Cover:	50 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	40	x 2 =	80
FAC species		x 3 =	0
FACU species	50	x 4 =	200
UPL species	30	x 5 =	150
Column Totals:	120 (A)		430 (B)

Prevalence Index = B/A = 3.58

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 6c

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[3]	Remarks
0-8	N/A	20					Cobble	
0-8	10 YR 4/4	80					Sandy loam	
6-8	10 YR 4/4	80	7.5 YR 5/8	<1	C	M	Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 6d

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 26, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.16 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: None

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: Data Station taken within area mapped as Southern Sycamore-Alder Riparian Woodland

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	10	No	Not Listed
2.			
3.			
4.			
Total Cover:	10 %		
Sapling/Shrub Stratum			
1. *Baccharis sarothroides*	25	Yes	FACU
2. *Acmispon glaber*	1	No	Not Listed
3. *Eriogonum fasciculatum*	1	No	Not Listed
4.			
5.			
Total Cover:	27 %		
Herb Stratum			
1. *Ambrosia psilostachya*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	35	x 4 =	140
UPL species	12	x 5 =	60
Column Totals:	47 (A)		200 (B)

Prevalence Index = B/A = 4.26

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 6d

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[3]	Remarks
0-2	10 YR 3/2	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 2

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Lakeside/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 7a

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 36, 14S, 1W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.90 | Long: -116.92 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Riverine

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: This data station is located within an active floodplain of the San Vicente Creek.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Eriogonum fasciculatum*	5	No	Not Listed
2. *Baccharis sarothroides*	50	Yes	FACU
3. *Baccharis salicifolia*	20	No	FAC
4. *Acmispon glaber*	1	No	Not Listed
5.			
Total Cover:	76 %		
Herb Stratum			
1. *Heliotropium curassavicum*	<1	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % | % 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: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	20	x 3 =	60
FACU species	50	x 4 =	200
UPL species	6	x 5 =	30
Column Totals:	76 (A)		290 (B)

Prevalence Index = B/A = 3.82

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 7a

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[3]	Remarks
0-6	10 YR 4/3	50					Loamy sand	
0-6	10 YR 4/3	50	2.5 Y 6/8	<1	C	M	Sand	
6-12	10 YR 3/3	90					Sand	
6-12	10 YR 4/3	10					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Lakeside/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 7b

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 36, 14S, 1W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.90 | Long: -116.92 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Riverine

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: This data station is located within the San Vicente Creek outside of the active floodplain.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis sarothroides*	25	No	FACU
2. *Brickellia desertorum*	25	No	Not Listed
3. *Hirschfeldia incana*	<1	No	Not Listed
4.			
5.			
Total Cover:	50 %		
Herb Stratum			
1. *Pseudognaphalium spp.*	<1	No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 50 % | % 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: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	25	x 4 =	100
UPL species	25	x 5 =	125
Column Totals:	50 (A)		225 (B)

Prevalence Index = B/A = 4.50

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 7b

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[3]	Remarks
0-10	7.5 YR 4/4	50					Sand	
0-10	7.5 YR 4/6	50					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 8

Investigator(s): Callie Ford, Janice Wondolleck | Section, Township, Range: 15, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.86 | Long: -117.18 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Riverine

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Eucalyptus globulus*	5	No	Not Listed
2.			
3.			
4.			
Total Cover:	5 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	20	No	FAC
2. *Baccharis sarothroides*	5	No	FACU
3.			
4.			
5.			
Total Cover:	25 %		
Herb Stratum			
1. *Ambrosia psilostachya*	5	Yes	FACU
2. *Cyperus eragrostis (dead)*	10	Yes	FACW
3. *Plantago lanceolata*	3	No	FAC
4.			
5.			
6.			
7.			
8.			
Total Cover:	18 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 50 % | % 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: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	10	x 2 =	20
FAC species	23	x 3 =	69
FACU species	10	x 4 =	40
UPL species	5	x 5 =	25
Column Totals:	48 (A)		154 (B)

Prevalence Index = B/A = 3.21

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks: Mulefat present in sporadic patches.

SOIL

Sampling Point: 8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	N/A	50					Cobble	
0-4	10 YR 4/3	50					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 9a

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 32, 15S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.82 | Long: -117.11 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater Forested/Shrub wetland

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: Non-vegetated channel within southern cottonwood-willow riparian forest (ACOE waters). Data station taken in low flow channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks: No vegetation within channel.

SOIL

Sampling Point: 9a

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[3]	Remarks
0-0.5	10 YR 2/1	100					mucky sand	
0.5-4	7.5 YR 3/2	100					sandy with cobbles	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: cobbles

Depth (inches): 4

Hydric Soil Present? Yes ○ No ◉

Remarks: Soil is cobbly between 2-6 inches. Sandy soil has dark mucky layer on surveys. Could not dig past 4 inches due to restrictive cobbles.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: Stagnant water is present in channel in ponded areas.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 9b

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 32, 15S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.82 | Long: -117.11 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater forrested/Shrub wetland

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 (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	80	Yes	FACW
2. *Eucalyptus camaldulensis*	5	No	FAC
3. *Washingtonia robusta*	5	No	FACW
4.			
Total Cover:	90 %		
Sapling/Shrub Stratum			
1. *Cortaderia selloana*	30	No	FACU
2.			
3.			
4.			
5.			
Total Cover:	30 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 40 % | % 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: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	85	x 2 =	170
FAC species	5	x 3 =	15
FACU species	30	x 4 =	120
UPL species		x 5 =	0
Column Totals:	120 (A)		305 (B)

Prevalence Index = B/A = 2.54

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 9b

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[3]	Remarks
0-0.5	10 YR 2/1	100					mucky sand	
0.5-8	7.5 YR 3/2	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks: The sand is moist, however it is not saturated.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 9c

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 31, 15S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.82 | Long: -117.11 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: None

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis sarothroides*	50	Yes	FACU
2. *Cortaderia selloana*	30	No	FACU
3.			
4.			
5.			
Total Cover:	80 %		
Herb Stratum			
1. *Pseudognaphalium californicum*	5	No	Not Listed
2. *Ambrosia psilostachya*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 30 % | % 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: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	85	x 4 =	340
UPL species	5	x 5 =	25
Column Totals:	90 (A)		365 (B)

Prevalence Index = B/A = 4.06

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 9c

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[3]	Remarks
0-4	7.5 YR 3/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: cobble

Depth (inches): 4

Hydric Soil Present? Yes ○ No ◉

Remarks: Not able to dig deeper due to restrictive layer and cobbles.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks: No hydrology because located on the bank above the non-vegetated channel.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 10

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 32, 15S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.83 | Long: -117.11 | Datum:

Soil Map Unit Name: Redding cobbly loam dissected | NWI classification: None

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 (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	80	Yes	FACW
2.			
3.			
4.			
Total Cover:	80 %		
Sapling/Shrub Stratum			
1. *Toxicodendron diversilobum*	5	No	FACU
2. *Cortaderia selloana*	10	No	FACU
3.			
4.			
5.			
Total Cover:	15 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	80	x 2 =	160
FAC species		x 3 =	0
FACU species	15	x 4 =	60
UPL species		x 5 =	0
Column Totals:	95 (A)		220 (B)

Prevalence Index = B/A = 2.32

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-3	7.5 YR 3/2	100					Sand	
3-6	10 YR 2/1	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: willow roots and cobbles

Depth (inches): 6

Hydric Soil Present? Yes ○ No ◉

Remarks: The soil has a restrictive layer of cobbles and roots. It is difficult to dig a soil sample deeper than 6 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 11

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 32, 15S, 2W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.82 | Long: -117.11 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater forrested/shrub wetland

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 (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix laevigata*	80	Yes	FACW
2.			
3.			
4.			
Total Cover:	80 %		
Sapling/Shrub Stratum			
1. *Helminthotheca echioides*	20	No	FACU
2. *Lysimachia arvensis*	1	No	FAC
3. *Brassica nigra*	3	No	Not Listed
4.			
5.			
Total Cover:	24 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % | % 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: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	80	x 2 =	160
FAC species	1	x 3 =	3
FACU species	20	x 4 =	80
UPL species	3	x 5 =	15
Column Totals:	104 (A)		258 (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 11

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[3]	Remarks
0-4	10 YR 2/1	100					Clay loam	
4-12	7.5 YR 3/2	100					Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 12a

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range:

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

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Gravel pits | NWI classification: Freshwater pond

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 ( )	No (●)	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: This data station is located in open water.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 12a

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Soils were not sampled because the data station is within open water. However, hydric soils are assumed given the presence of standing water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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):	0
Water Table Present?	Yes ◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 12b

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range:

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

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Riverwast | NWI classification: Freshwater pond

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 (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Typha domingensis*	100	Yes	OBL
2.			
3.			
4.			
5.			
Total Cover:	100 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 100.0 % (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 12b

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Soils were not sampled due to access restrictions, including open water and dense vegetation. Hydric soil is assumed because the soil supports freshwater marsh and obligate species.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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): 0

Water Table Present? Yes ◉ No ○ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/27/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 12c

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range:

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

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater forrested/shrub wetland

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 (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: The data station was taken in arundo-dominated riparian habitat within the San Diego River (see map 24).

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Arundo donax*	100	Yes	FACW
2.			
3.			
4.			
5.			
Total Cover:	100 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	100	x 2 =	200
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 12c

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: The data station is within an impenetrable stand of Arundo donax. There was no access to collect a soil sample, however hydric soils are assumed given the presence within San Diego River and adjacent freshwater marsh and open water and presence of facultative wetland species.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 13

Investigator(s): Katie Dayton, Danielle Mullen | Section, Township, Range: 30, 15S, 1W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.02 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: None

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 (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	50	Yes	FACW
2. *Populus fremontii*	20	Yes	Not Listed
3.			
4.			
Total Cover:	70 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	20	Yes	FAC
2. *Baccharis pilularis*	5	No	Not Listed
3.			
4.			
5.			
Total Cover:	25 %		
Herb Stratum			
1. *Brassica nigra (dead)*	20	No	Not Listed
2. *Helminthotheca echioides (dead)*			FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 40 % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	50	x 2 =	100
FAC species	20	x 3 =	60
FACU species		x 4 =	0
UPL species	45	x 5 =	225
Column Totals:	115 (A)		385 (B)

Prevalence Index = B/A = 3.35

Hydrophytic Vegetation Indicators:

- [X] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 13

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[3]	Remarks
0-16	10 YR 4/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 14a

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 30, 15S, 1W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.83 | Long: -117.02 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater forrested/shrub wetland

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 (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	60	Yes	FACW
2.			
3.			
4.			
Total Cover:	60 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	20	No	FAC
2.			
3.			
4.			
5.			
Total Cover:	20 %		
Herb Stratum			
1. *Nasturtium officinale*	30	Yes	OBL
2. *Cyperus eragrostis*	30	Yes	FACW
3. *Oenothera elata*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	65 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	95	x 2 =	190
FAC species	20	x 3 =	60
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	145 (A)		280 (B)

Prevalence Index = B/A = 1.93

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 14a

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[3]	Remarks
0-4	10 YR 3/2	100					Sandy clay loam	
4-12	7.5 YR 2.5/1	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: There are no hydric soil indicators present, however the location is assumed ACOE wetlands given that it is within the San Diego River. The pit was dug about 2 feet from perennial non-wetland waters.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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):	0
Water Table Present?	Yes ○ No ◉	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	12

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 14b

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 30, 15S, 1W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.83 | Long: -117.02 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Freshwater forrested/shrub wetland

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks: There is no vegetation within the channel.

SOIL

Sampling Point: 14b

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: No soil data taken because the channel contains water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Santee/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 15a

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 29, 15S, 1W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.00 | Datum:

Soil Map Unit Name: Visalia gravelly sandy loam | NWI classification: Freshwater forrested/shrub wetland

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 ( )	No (●)	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks: No vegetation present.

SOIL

Sampling Point: 15a

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[3]	Remarks
0-2	10 YR 3/2	100					Sandy clay	
2-8	10 YR 3/1	90	5 YR 2.5/1	5			Clay	Dark redox feature
2-8	10 YR 3/1	90	2.5 YR 4/8	5			Clay	Red redox feature

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Dark and red redox features are present in soil at 2-8 inches within the clay inclusions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Santee/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 15b

Investigator(s): Danielle Mullen, Katie Dayton | Section, Township, Range: 29, 15S, 1W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.84 | Long: -117.00 | Datum:

Soil Map Unit Name: Visalia gravelly sandy loam | NWI classification: Freshwater forrested/shrub wetland

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 (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	80	Yes	FACW
2.			
3.			
4.			
Total Cover:	80 %		
Sapling/Shrub Stratum			
1. *Arundo donax*	10	No	FACW
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Cyperus eragrostis*	5	No	FACW
2. *Rumex crispus*	2	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	7 %		
Woody Vine Stratum			
1. *Vitis girdiana*	60	Yes	FAC
2.			
Total Cover:	60 %		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	95	x 2 =	190
FAC species	62	x 3 =	186
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	157 (A)		376 (B)

Prevalence Index = B/A = 2.39

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 15b

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[3]	Remarks
0-1	10 YR 2/2	100					Loam	
2-8	10 YR 3/2	95	7.5 YR 5/8	5			Sand	
8-16	10 YR 4/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Santee/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 16a

Investigator(s): Katie Dayton, Danielle Mullen | Section, Township, Range: 18, 15S, 1E

Landform (hillslope, terrace, etc.): flat/riverbed | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: 32.87 | Long: -116.92 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Riverine

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 (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	40	No	FACW
2.			
3.			
4.			
Total Cover:	40 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	75	Yes	FAC
2. *Cyperus eragrostis*	2	No	FACW
3. *Ricinus communis*	3	No	FACU
4.			
5.			
Total Cover:	80 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	42	x 2 =	84
FAC species	75	x 3 =	225
FACU species	3	x 4 =	12
UPL species		x 5 =	0
Column Totals:	120 (A)		321 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- [X] 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.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: 16a

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[3]	Remarks
0-4	7.5 YR 2.5/2	100					Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Rocks

Depth (inches): 4

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Santee/San Diego | Sampling Date: 09/28/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 16b

Investigator(s): Katie Dayton, Danielle Mullen | Section, Township, Range: 18, 15S, 1E

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

Subregion (LRR): C - Mediterranean California | Lat: 32.87 | Long: -116.92 | Datum:

Soil Map Unit Name: Riverwash | NWI classification: Riverine

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Tamarix ramosissima*	2	No	Not Listed
2. *Arundo donax*	2	No	FACW
3. *Baccharis sarothroides*	6	No	FACU
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Salix tracyi*	5	No	Not Listed
2. *Glebionis coronaria (dead)*	10	No	Not Listed
3. *Brassica nigra (dead)*	10	No	Not Listed
4.			
5.			
6.			
7.			
8.			
Total Cover:	25 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 75 % | % 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: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	2	x 2 =	4
FAC species		x 3 =	0
FACU species	6	x 4 =	24
UPL species	27	x 5 =	135
Column Totals:	35 (A)		163 (B)

Prevalence Index = B/A = 4.66

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 16b

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[3]	Remarks
0-16	10 YR 3/2	100					Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Miramar/San Diego | Sampling Date: 10/05/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 17a

Investigator(s): Callie Ford, Patricia Schuyler | Section, Township, Range: 16, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.87 | Long: 117.18 | Datum:

Soil Map Unit Name: Redding cobbly loam | NWI classification: None

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 ◉	No ○	
Hydric Soil Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: This area has experienced drought and no recent rainfall.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	10	No	FAC
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Rumex crispus*	50	Yes	FAC
2. *Ambrosia psilostachya*	2	No	FACU
3. *Juncus dubius (dead)*	15	No	FACW
4. *Hirschfeldia incana*	2	No	Not Listed
5. *Unidentifiable grasses*	20	Yes	
6.			
7.			
8.			
Total Cover:	89 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	15	x 2 =	30
FAC species	60	x 3 =	180
FACU species	2	x 4 =	8
UPL species	2	x 5 =	10
Column Totals:	79 (A)		228 (B)

Prevalence Index = B/A = 2.89

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.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: 17a

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[3]	Remarks
0-4	10 YR 3/2	90	5 YR 4/6	10	C		Silty clay loam	Redox Loc is PL and M

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Hardpan/dry hard soils

Depth (inches): 4"+

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Miramar/San Diego | Sampling Date: 10/05/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 17b

Investigator(s): Callie Ford, Patricia Schuyler | Section, Township, Range: 16, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.87 | Long: 117.18 | Datum:

Soil Map Unit Name: Redding cobbly loam | NWI classification: None

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 ◉	No ○	
Hydric Soil Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: Drought conditions.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	20	Yes	FACW
2.			
3.			
4.			
Total Cover:	20 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	50	Yes	FAC
2. *Artemisia californica*	1	No	Not Listed
3. *Baccharis pilularis*	1	No	Not Listed
4.			
5.			
Total Cover:	52 %		
Herb Stratum			
1. *Unidentifiable grasses*			
2. *Cyperus eragrostis*	2	No	FACW
3. *Rumex crispus*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
Total Cover:	7 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	22	x 2 =	44
FAC species	55	x 3 =	165
FACU species		x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	79 (A)		219 (B)

Prevalence Index = B/A = 2.77

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.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: 17b

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	10 YR 5/3	90	5 YR 4/6	10	C		Silty loam	Redox Loc is PL and M

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: hard soil/hardpan

Depth (inches): 4"+

Hydric Soil Present? Yes ◉ No ○

Remarks: Based on the surrounding soil samples (see 17a) and abundant redox features, this is assumed to be hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Miramar/San Diego | Sampling Date: 10/05/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 17c

Investigator(s): Callie Ford, Patricia Schuyler | Section, Township, Range: 16, 15S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.87 | Long: 117.18 | Datum:

Soil Map Unit Name: Redding cobbly loam | NWI classification: None

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 ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	5	No	FAC
2. *Baccharis pilularis*	10	No	Not Listed
3. *Eriogonum fasciculatum*	25	Yes	Not Listed
4. *Isocoma menziesii*	20	Yes	FAC
5. *Acmispon glaber/Salix tracyi*	1/5	No	Not Listed
Total Cover:	60 %		
Herb Stratum			
1. *Grasses (dead)*	10	No	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum % | % 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: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	25	x 3 =	75
FACU species		x 4 =	0
UPL species	35	x 5 =	175
Column Totals:	60 (A)		250 (B)

Prevalence Index = B/A = 4.17

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.

Hydrophytic Vegetation Present? Yes ( ) No (●)

Remarks:

SOIL

Sampling Point: 17c

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[3]	Remarks
0-4	N/A	50					Gravel	
0-4	10 YR 4/4	50					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Hard soils, dry

Depth (inches): 4"+

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: Miramar/San Diego | Sampling Date: 10/05/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 18

Investigator(s): Callie Ford, Patricia Schuyler | Section, Township, Range: 30, 14S, 1E

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

Subregion (LRR): C - Mediterranean California | Lat: 32.91 | Long: 116.91 | Datum:

Soil Map Unit Name: Cieneba very rocky coarse sandy loam | NWI classification: Lake/NA

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 ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: Drought conditions.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus agrifolia*	20	Yes	UPL
2. *Populus fremontii*	20	Yes	UPL
3.			
4.			
Total Cover:	40 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia*	20	Yes	FAC
2.			
3.			
4.			
5.			
Total Cover:	20 %		
Herb Stratum			
1. *Ambrosia psilostachya*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1. *Rubus armeniacus*	20	Yes	FACU
2.			
Total Cover:	20 %		

% Bare Ground in Herb Stratum % | % 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	20	x 3 =	60
FACU species	30	x 4 =	120
UPL species	40	x 5 =	200
Column Totals:	90 (A)		380 (B)

Prevalence Index = B/A = 4.22

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

SOIL

Sampling Point: 18

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[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: A soil sample was not taken due to the lack of wetland vegetation and lots of poison oak in the area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: The hydrology indicators are more apparent just upstream.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego | Sampling Date: 10/26/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 19a

Investigator(s): Kathleen Dayton | Section, Township, Range: 21, 16S, 3W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave | Slope (%): 10

Subregion (LRR): C - Mediterranean California | Lat: 32.762479 | Long: -117.200011 | Datum: NAD83

Soil Map Unit Name: Urban land | NWI classification: NA

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 ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: Station located on the slope above the San Diego River along Friars Road.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Eucalyptus sp.*	10	Yes	UPL
2. *Salix gooddingii*	2	No	FACW
3.			
4.			
Total Cover:	12 %		
Sapling/Shrub Stratum			
1. *Baccharis sarothroides*	20	Yes	FACU
2.			
3.			
4.			
5.			
Total Cover:	20 %		
Herb Stratum			
1. *Pennisetum setaceum*	40	Yes	Not Listed
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	40 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 60 % | % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	2	x 2 =	4
FAC species		x 3 =	0
FACU species	20	x 4 =	80
UPL species	50	x 5 =	250
Column Totals:	72 (A)		334 (B)

Prevalence Index = B/A = 4.64

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.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

SOIL

Sampling Point: 19a

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[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks: A soil sample was not taken due to the presence of riprap on this slope making the ground impenetrable.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pure Water Program | City/County: San Diego | Sampling Date: 10/26/2016

Applicant/Owner: City of San Diego | State: CA | Sampling Point: 19b

Investigator(s): Kathleen Dayton | Section, Township, Range: 21, 16S, 3W

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

Subregion (LRR): C - Mediterranean California | Lat: 32.762453 | Long: -117.200056 | Datum: NAD83

Soil Map Unit Name: Urban land | NWI classification: Near Freshwater Forested/Shrub Wetland

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 ◉	No ○		
Hydric Soil Present?	Yes ◉	No ○	**Is the Sampled Area within a Wetland?**	**Yes ◉ No ○**
Wetland Hydrology Present?	Yes ◉	No ○		

Remarks: Station located on the edge of the San Diego River along Friars Road.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	60	Yes	FACW
2. *Phoenix canariensis*	10	No	Not Listed
3. *Populus fremontii ssp. fremontii*	5	No	Not Listed
4.			
Total Cover:	75 %		
Sapling/Shrub Stratum			
1. *Baccharis salicifolia ssp. salicifolia*	20	Yes	FAC
2. *Baccharis sarothroides*	2	No	FACU
3.			
4.			
5.			
Total Cover:	22 %		
Herb Stratum			
1. *Ricinus communis*	2	Yes	Not Listed
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	2 %		
Woody Vine Stratum			
1. *Marah macrocarpa*	2	Yes	Not Listed
2.			
Total Cover:	2 %		

% Bare Ground in Herb Stratum 15 % | % Cover of Biotic Crust %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	60	x 2 =	120
FAC species	20	x 3 =	60
FACU species	2	x 4 =	8
UPL species	19	x 5 =	95
Column Totals:	101 (A)		283 (B)

Prevalence Index = B/A = 2.80

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.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: 19b

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[3]	Remarks
0-16	7.5 Y/R 3/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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[4]:

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: Although hydric soil indicators were not met, since this point is within the San Diego River, hydric soils are assumed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

APPENDIX B

Representative Photographs

APPENDIX B
Representative Photographs

Photo 1: Data Station 1a

Photo 2: Data Station 1b

Photo 3: Data Station 1c

Photo 4: Data Station 1d

Photo 5: Data Station 2

Photo 6: Data Station 3a

Photo 7: Data Station 3b

Photo 8: Data Station 4a

Photo 9: Data Station 4b

Photo 10: Data Station 4c

Photo 11: Data Station 5a

Photo 12: Data Station 5b

Photo 13: Data Station 6a

Photo 14: Data Station 6b

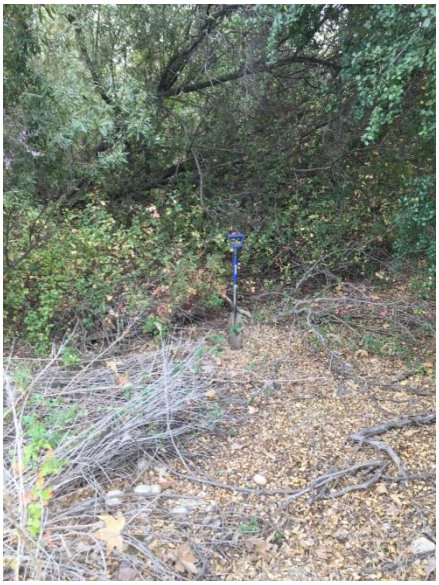


Photo 15: Data Station 6c

Photo 16: Data Station 6d

Photo 17: Data Station 7a

Photo 18: Data Station 7b

Photo 19: Data Station 8

Photo 20: Data Station 9a

Photo 21: Data Station 9b

Photo 22: Data Station 9c

Photo 23: Data Station 10

Photo 24: Data Station 11

Photo 25: Data Station 12a

Photo 26: Data Station 12b

Photo 27: Data Station 12c

Photo 28: Data Station 13

Photo 29: Data Station 14a

Photo 30: Data Station 14b

Photo 31: Data Station 15a

Photo 32: Data Station 15b

Photo 33: Data Station 16a

Photo 34: Data Station 16b

Photo 35: Data Station 17a

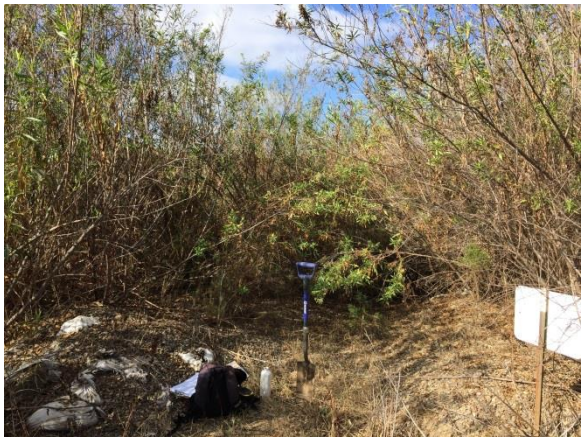


Photo 36: Data Station 17b

Photo 37: Data Station 17c

Photo 38: Data Station 18

Photo 39: Data Station 19a

Photo 40: Data Station 19b

APPENDIX J

Plant Compendium

APPENDIX J
Plant Compendium

VASCULAR SPECIES

FERNS AND FERN ALLIES

AZOLLACEAE—MOSQUITO FERN FAMILY

Azolla filiculoides—Pacific mosquitofern

DRYOPTERIDACEAE—WOOD FERN FAMILY

Dryopteris arguta—coastal woodfern

PTERIDACEAE—BRAKE FAMILY

Aspidotis californica—California lacefern
Pellaea andromedifolia—coffee cliffbrake
Pellaea mucronata var. *mucronata*—birdfoot cliffbrake
Pentagramma triangularis ssp. *triangularis*—goldback fern
Pentagramma triangularis ssp. *viscosa*—silverback fern
Myriopteris newberryi—Newberry's lip fern

SELAGINELLACEAE—SPIKE-MOSS FAMILY

Selaginella bigelovii—bushy spikemoss
Selaginella cinerascens—ashy spike-moss[1]

GYMNOSPERMS AND GNETOPHYTES

PINACEAE—PINE FAMILY

Pinus torreyana ssp. *torreyana*—Torrey pine (planted)

MONOCOTS

AGAVACEAE—AGAVE FAMILY

Hesperoyucca whipplei—chaparral yucca
Yucca schidigera—Mojave yucca
Chlorogalum sp.—wavyleaf soap plant

ASTERACEAE—SUNFLOWER FAMILY

Pseudognaphalium leucocephalum

ALISMATACEAE—WATER-PLANTAIN FAMILY

Alisma triviale—northern water plantain

ALLIACEAE—ONION FAMILY

Allium haematochiton—redskin onion
Allium peninsulare var. *peninsulare*—penisula onion
Allium praecox—early onion

ARECACEAE—PALM FAMILY

* *Phoenix canariensis*—Canary Island date palm
* *Washingtonia robusta*—Washington fan palm

ASPARAGACEAE—ASPARAGUS FAMILY

* *Asparagus asparagoides*—African asparagus fern

ASPHODELACEAE—ASPHODEL FAMILY

* *Asphodelus fistulosus*—onionweed

CYPERACEAE—SEDGE FAMILY

Carex praegracilis—clustered field sedge
Carex spissa—San Diego sedge
Cyperus eragrostis—tall flatsedge
* *Cyperus involucratus*—umbrella plant
Eleocharis montevidensis—sand spikerush
Eleocharis palustris—common spikerush
Schoenoplectus californicus—California bulrush
Schoenoplectus acutus—hardstem bulrush
Eleocharis macrostachya—pale spike rush

IRIDACEAE—IRIS FAMILY

Sisyrinchium bellum—western blue-eyed grass

JUNCACEAE—RUSH FAMILY

Juncus bufonius—toad rush
Juncus dubius—questionable rush
Juncus mexicanus—Mexican rush
Juncus rugulosus—wrinkled rush
Juncus acutus ssp. *leopoldii*—southwestern spiny rush[1]

LILIACEAE—LILY FAMILY

Calochortus splendens—splendid mariposa lily
Calochortus weedii var. *weedii*—Weed's mariposa lily
Brodiaea orcuttii—Orcutt's brodiaea[1]
Fritillaria biflora var. *biflora*—no common name

POACEAE—GRASS FAMILY

Agrostis pallens—seashore bentgrass
* *Agrostis stolonifera*—creeping bentgrass
* *Avena barbata*—slender oat
Aristida adscensionis—sixweeks threeawn
Bothriochloa barbinodis—cane bluestem
Deschampsia danthonioides—annual hairgrass
* *Ehrharta erecta*—panic veldtgrass
Leptochloa fusca ssp. *uninervia*—Mexican sprangletop
Melica imperfecta—smallflower melicgrass
Muhlenbergia microsperma—littleseed muhly
Setaria parviflora—marsh bristlegrass
Stipa coronata—giant ricegrass
Stipa hymenoides—Indian rice grass
* *Arundo donax*—giant reed
* *Avena fatua*—wild oat
* *Brachypodium distachyon*—purple false brome
* *Briza minor*—little quakinggrass
* *Bromus catharticus*—rescuegrass
* *Bromus diandrus*—ripgut brome
* *Bromus hordeaceus*—soft brome
* *Bromus madritensis* ssp. *rubens*—red brome
* *Bromus tectorum*—cheatgrass
* *Cortaderia jubata*—purple pampas grass
* *Cortaderia selloana*—Uruguayan pampas grass
* *Crypsis schoenoides*—swamp pricklegrass
* *Cynodon dactylon*—Bermudagrass
* *Dactylis glomerata*—orchardgrass
* *Phalaris minor*—littleseed canarygrass
* *Ehrharta longiflora*—longflowered veldtgrass
* *Ehrharta calycina*—perennial veldtgrass
* *Festuca myuros*—rat-tail fescue
* *Gastridium phleoides*—nit grass
* *Hordeum marinum*—seaside barley
* *Hordeum marinum* ssp. *gussoneanum*—Mediterranean barley
* *Hordeum murinum* ssp. *leporinum*—hare barley
* *Lamarckia aurea*—goldentop grass
* *Melinis repens*—rose Natal grass
* *Parapholis incurva*—curved sicklegrass

* *Paspalum dilatatum*—dallisgrass
* *Paspalum vaginatum*—seashore paspalum
* *Poa annua*—annual bluegrass
* *Polypogon monspeliensis*—annual rabbitsfoot grass
* *Polypogon viridis*—beardless rabbitsfoot grass
* *Sorghum halepense*—Johnsongrass
* *Stenotaphrum secundatum*—St. Augustine grass
* *Stipa miliacea*—smilograss
* *Schismus barbatus*—common Mediterranean grass
Elymus triticoides—creeping rye grass
Stipa lepida—foothill needle grass
* *Pennisetum setaceum*—fountain grass swards
* *Pennisetum clandestinum*—kikuyugrass
Elymus condensatus—giant wild rye
Stipa cernua—nodding needle grass
* *Festuca perennis*—perennial rye grass
Stipa pulchra—purple needle grass
Distichlis spicata—salt grass

THEMIDACEAE—BRODIAEA FAMILY

Bloomeria crocea var. *crocea*—common goldenstar
Dichelostemma capitatum ssp. *capitatum*—bluedicks
Dichelostemma capitatum—bluedicks
Muilla maritima—sea muilla

TYPHACEAE—CATTAIL FAMILY

Typha domingensis—southern cattail

EUDICOTS

ADOXACEAE—MUSKROOT FAMILY

Sambucus nigra ssp. *caerulea*—blue elderberry

AIZOACEAE—FIG-MARIGOLD FAMILY

* *Carpobrotus chilensis*—sea fig
* *Carpobrotus edulis*—ice plant
* *Mesembryanthemum nodiflorum*—slenderleaf iceplant

AMARANTHACEAE—AMARANTH FAMILY

* *Amaranthus albus*—prostrate pigweed
Amaranthus blitoides—mat amaranth

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Malosma laurina—laurel sumac
Rhus integrifolia—lemonade berry
Rhus ovata—sugarbush
* *Schinus molle*—Peruvian peppertree
* *Schinus terebinthifolius*—Brazilian peppertree
* *Searsia lancea*—African sumac
Toxicodendron diversilobum—poison oak

APIACEAE—CARROT FAMILY

Apiastrum angustifolium—mock parsley
Daucus pusillus—American wild carrot
Sanicula arguta—sharptooth blacksnakeroot
Sanicula crassicaulis—Pacific blacksnakeroot
Tauschia arguta—southern umbrellawort
* *Apium graveolens*—wild celery
* *Conium maculatum*—poison hemlock
* *Torilis arvensis*—spreading hedgeparsley
* *Foeniculum vulgare*—fennel

APOCYNACEAE—DOGBANE FAMILY

Asclepias fascicularis—Mexican whorled milkweed
Funastrum cynanchoides var. *hartwegii*—Hartweg's twinevine
* *Nerium oleander*—oleander

ASTERACEAE—SUNFLOWER FAMILY

* *Sonchus oleraceus*—common sowthistle
Achillea millefolium—common yarrow
Acourtia microcephala—sacapellote
Agoseris grandiflora var. *grandiflora*—bigflower agoseris
Ambrosia confertiflora—weakleaf bur ragweed
Artemisia douglasiana—Douglas' sagewort
Artemisia ludoviciana ssp. *albula*—white sagebrush
Baccharis pilularis ssp. *consanguinea*—coyotebrush
Baccharis sarothroides—desertbroom
Brickellia californica—California brickellbush
Brickellia desertorum—desert brickellbush
Chaenactis artemisiifolia—white pincushion
Chaenactis glabriuscula—yellow pincushion
Cirsium occidentale var. *californicum*—cobwebby thistle

Cirsium occidentale var. *occidentale*—cobwebby thistle
Corethrogyne filaginifolia—common sandaster
Deinandra fasciculata—clustered tarweed
Erigeron canadensis—Canadian horseweed
Erigeron foliosus—leafy fleabane
Eriophyllum confertiflorum—golden-yarrow
Euthamia occidentalis—western goldentop
Gnaphalium palustre—western marsh cudweed
Hazardia squarrosa var. *grindelioides*—sawtooth bristleweed
Helianthus gracilentus—slender sunflower
Heterotheca grandiflora—telegraphweed
Isocoma menziesii var. *menziesii*—Menzies' goldenbush
Jaumea carnosa—marsh jaumea
Laennecia coulteri—Coulter's horseweed
Lasthenia coronaria—royal goldfields
Lasthenia gracilis—needle goldfields
Leptosyne gigantea—giant coreopsis
Logfia filaginoides—California cottonrose
Osmadenia tenella—false rosinweed
Pluchea sericea—arrow weed
Pluchea odorata var. *odorata*—sweetscent
Porophyllum gracile—slender poreleaf
Pseudognaphalium beneolens—Wright's cudweed
Pseudognaphalium biolettii—two-color rabbit-tobacco
Pseudognaphalium californicum—ladies' tobacco
Pseudognaphalium canescens—Wright's cudweed
Pseudognaphalium microcephalum—Wright's cudweed
Pseudognaphalium stramineum—cottonbatting plant
Psilocarphus brevissimus—short woollyheads
Psilocarphus tenellus—slender woollyheads
Rafinesquia californica—California plumeseed
Stephanomeria diegensis—San Diego wirelettuce
Stephanomeria exigua ssp. *deanei*—Deane's wirelettuce
Stylocline gnaphaloides—mountain neststraw
Uropappus lindleyi—Lindley's silverpuffs
Baccharis salicifolia ssp. *salicifolia*—mulefat
* *Bidens pilosa*—hairy beggarticks
* *Carduus pycnocephalus*—Italian plumeless thistle
* *Centaurea benedicta*—blessed thistle

* *Centaurea melitensis*—Maltese star-thistle
* *Cirsium vulgare*—bull thistle
* *Cynara cardunculus* ssp. *cardunculus*—globe artichoke
* *Dimorphotheca sinuata*—glandular Cape marigold
* *Dittrichia graveolens*—stinkwort
* *Erigeron bonariensis*—asthmaweed
* *Erigeron sumatrensis*—asthmaweed
* *Gazania linearis*—treasureflower
* *Glebionis coronaria*—crowndaisy
* *Hedypnois rhagadioloides*—crete weed
* *Helichrysum petiolare*—licorice-plant
* *Helminthotheca echioides*—bristly oxtongue
* *Hypochaeris glabra*—smooth cat's ear
* *Lactuca serriola*—prickly lettuce
* *Logfia gallica*—narrowleaf cottonrose
* *Matricaria discoidea*—disc mayweed
* *Oncosiphon piluliferum*—stinknet
* *Pseudognaphalium luteoalbum*—Jersey cudweed
* *Senecio vulgaris*—old-man-in-the-Spring
* *Sonchus asper*—spiny sowthistle
* *Sonchus asper* ssp. *asper*—spiny sowthistle
* *Tragopogon dubius*—yellow salsify
* *Cotula coronopifolia*—brass buttons
Encelia farinosa—brittle bush
Encelia californica—California brittle bush
Gutierrezia californica—California match weed
Artemisia californica—California sagebrush
Ambrosia psilostachya—western ragweed
Artemisia dracunculus—wild tarragon
Artemisia palmeri—San Diego sagewort[1]
Viguiera laciniata—San Diego County viguiera[1]
Holocarpha virgata ssp. *elongata*—graceful tarplant[1]
Isocoma menziesii var. *decumbens*—decumbent goldenbush[1]
Iva hayesiana—San Diego marsh-elder[1]
Microseris douglasii ssp. *platycarpha*—small-flowered microseris[1]
Pentachaeta aurea ssp. *aurea*—golden-rayed pentachaeta[1]
Pseudognaphalium leucocephalum—white rabbit-tobacco[1,2]

BIGNONIACEAE—BIGNONIA FAMILY

Tecoma capensis—Cape honeysuckle

BORAGINACEAE—BORAGE FAMILY

Amsinckia intermedia—common fiddleneck
Amsinckia menziesii—Menzies' fiddleneck
Amsinckia retrorsa—Menzies' fiddleneck
Cryptantha intermedia var. *intermedia*—Clearwater cryptantha
Cryptantha micrantha—redroot cryptantha
Cryptantha micromeres—pygmyflower cryptantha
Cryptantha microstachys—Tejon cryptantha
Cryptantha muricata var. *denticulata*—pointed cryptantha
Eriodictyon crassifolium var. *crassifolium*—thickleaf yerba santa
Eucrypta chrysanthemifolia var. *chrysanthemifolia*—spotted hideseed
Heliotropium curassavicum var. *oculatum*—seaside heliotrope
Nemophila menziesii var. *integrifolia*—baby blue eyes
Pectocarya linearis ssp. *ferocula*—sagebrush combseed
Pectocarya penicillata—sleeping combseed
Phacelia cicutaria var. *hispida*—caterpillar phacelia
Phacelia distans—distant phacelia
Phacelia parryi—Parry's phacelia
Phacelia ramosissima—branching phacelia
Pholistoma auritum var. *auritum*—blue fiestaflower
Pholistoma membranaceum—white fiestaflower
Plagiobothrys arizonicus—Arizona popcornflower
* *Echium candicans*—pride of Madeira

BRASSICACEAE—MUSTARD FAMILY

* *Sisymbrium irio*—London rocket
Caulanthus heterophyllus—San Diego wild cabbage
Lepidium lasiocarpum ssp. *lasiocarpum*—shaggyfruit pepperweed
Lepidium nitidum—shining pepperweed
Nasturtium officinale—watercress
Thysanocarpus laciniatus—mountain fringepod
* *Brassica nigra*—black mustard
* *Brassica tournefortii*—Asian mustard
* *Eruca vesicaria* ssp. *sativa*—rocketsalad
* *Hirschfeldia incana*—shortpod mustard
* *Lepidium didymum*—lesser swinecress

* *Raphanus raphanistrum*—wild radish
* *Raphanus sativus*—cultivated radish
* *Sisymbrium officinale*—hedgemustard
* *Sisymbrium orientale*—Indian hedgemustard
* *Lepidium latifolium*—perennial pepper weed
Lepidium nitidum—shining pepperweed
Lepidium virginicum var. *robinsonii*—Robinson's pepper-grass[1,2]

CACTACEAE—CACTUS FAMILY

Opuntia ×*vaseyi*—Vasey's coastal pricklypear
* *Opuntia ficus-indica*—Barbary fig
Cylindropuntia californica var. *californica*—snake cholla
Opuntia littoralis—coast prickly pear
Ferocactus viridescens—San Diego barrel cactus[1,2]

CAMPANULACEAE—BELLFLOWER FAMILY

Downingia cuspidata—toothed calicoflower

CAPRIFOLIACEAE—HONEYSUCKLE FAMILY

Lonicera subspicata var. *denudata*—Santa Barbara honeysuckle
* *Lonicera japonica*—Japanese honeysuckle
Symphoricarpos mollis—creeping snowberry

CARYOPHYLLACEAE—PINK FAMILY

Achyronychia cooperi—onyxflower
Cardionema ramosissimum—sandcarpet
Polycarpon depressum—California manyseed
Silene laciniata ssp. *laciniata*—cardinal catchfly
Stellaria nitens—shiny chickweed
* *Cerastium glomeratum*—sticky chickweed
* *Polycarpon tetraphyllum* var. *tetraphyllum*—fourleaf manyseed
* *Silene gallica*—common catchfly
* *Spergularia villosa*—hairy sandspurry
* *Stellaria media*—common chickweed

CHENOPODIACEAE—GOOSEFOOT FAMILY

Atriplex canescens—fourwing saltbush
Chenopodium californicum—California goosefoot
* *Atriplex semibaccata*—Australian saltbush
* *Atriplex suberecta*—peregrine saltbush

* *Chenopodium album*—lambsquarters
* *Chenopodium murale*—nettleleaf goosefoot
* *Salsola tragus*—prickly Russian thistle
* *Atriplex prostrata*—fat hen
Atriplex lentiformis—quailbush
Arthrocnemum subterminale—Parish's glasswort
Salicornia pacifica—pickleweed

CISTACEAE—ROCK-ROSE FAMILY

Crocanthemum aldersonii—no common name
Crocanthemum scoparium var. *scoparium*—peak rush-rose
Crocanthemum scoparium var. *vulgare*—no common name
* *Cistus incanus*—hairy rockrose

CLEOMACEAE—CLEOME FAMILY

Peritoma arborea var. *arborea*—bladderpod spiderflower

CONVOLVULACEAE—MORNING-GLORY FAMILY

Calystegia macrostegia ssp. *intermedia*—island false bindweed
Calystegia macrostegia ssp. *tenuifolia*—island false bindweed
Cuscuta californica—chaparral dodder
Cuscuta subinclusa—canyon dodder
~~*Dichondra occidentalis*—western dichondra~~[1]

CRASSULACEAE—STONECROP FAMILY

* *Crassula ovata—jade plant*
Crassula aquatica—water pygmyweed
Crassula connata—sand pygmyweed
Dudleya edulis—fingertips
Dudleya lanceolata—lanceleaf liveforever
Dudleya pulverulenta—chalk dudleya

CUCURBITACEAE—GOURD FAMILY

Cucurbita foetidissima—Missouri gourd
Marah macrocarpa—Cucamonga manroot

DIPSACACEAE—TEASEL FAMILY

* *Dipsacus sativus*—Indian teasel

ELATINACEAE—WATERWORT FAMILY

Elatine brachysperma—shortseed waterwort

ERICACEAE—HEATH FAMILY

Arctostaphylos glauca—bigberry manzanita
Xylococcus bicolor—mission manzanita
~~*Comarostaphylis diversifolia* ssp. *diversifolia*—summer holly~~[1]

EUPHORBIACEAE—SPURGE FAMILY

Acalypha californica—California copperleaf
Croton californicus—California croton
Euphorbia crenulata—Chinese caps
Euphorbia albomarginata—whitemargin sandmat
Euphorbia polycarpa—smallseed sandmat
Euphorbia serpyllifolia ssp. *hirtula*—thymeleaf sandmat
Croton setiger—dove weed
* *Euphorbia maculata*—spotted sandmat
* *Euphorbia peplus*—petty spurge
* *Ricinus communis*—castorbean

FABACEAE—LEGUME FAMILY

Acmispon americanus var. *americanus*—American bird's-foot trefoil
Acmispon glaber var. *glaber*—common deerweed
Acmispon heermannii—Heermann's bird's-foot trefoil
Acmispon micranthus—San Diego bird's-foot trefoil
Acmispon strigosus—strigose bird's-foot trefoil
Astragalus trichopodus var. *lonchus*—Santa Barbara milkvetch
Lathyrus vestitus var. *alefeldii*—Alefeld's pea
Lupinus benthamii—spider lupine
Lupinus bicolor—miniature lupine
Lupinus concinnus—bajada lupine
Lupinus hirsutissimus—stinging annual lupine
Lupinus sparsiflorus—Coulter's lupine
Lupinus succulentus—hollowleaf annual lupine
Trifolium willdenovii—tomcat clover
Vicia ludoviciana—Louisiana vetch
* *Acacia cyclops*—coastal wattle
* *Acacia longifolia*—Sydney golden wattle
* *Acacia retinodes*—water wattle
* *Lotus corniculatus*—bird's-foot trefoil
* *Medicago polymorpha*—burclover
* *Melilotus albus*—yellow sweetclover
* *Melilotus indicus*—annual yellow sweetclover

* *Melilotus officinalis*—sweetclover
* *Parkinsonia aculeata*—Jerusalem thorn
* *Spartium junceum*—Spanish broom
* *Trifolium hirtum*—rose clover
* *Vicia villosa* ssp. *villosa*—winter vetch
Acmispon americanus—Spanish clover

FAGACEAE—OAK FAMILY

Quercus acutidens—hybrid oak
Quercus agrifolia var. *agrifolia*—California live oak
Quercus berberidifolia—scrub oak
Quercus engelmannii—Engelmann oak (planted)
Quercus dumosa—Nuttall's scrub oak[1]

FRANKENIACEAE—FRANKENIA FAMILY

Frankenia salina—alkali heath

GENTIANACEAE—GENTIAN FAMILY

Zeltnera venusta—charming centaury

GERANIACEAE—GERANIUM FAMILY

* *Erodium cicutarium*—redstem stork's bill
Geranium carolinianum—Carolina geranium
* *Erodium botrys*—longbeak stork's bill
* *Erodium moschatum*—musky stork's bill
* *Geranium dissectum*—cutleaf geranium
* *Geranium rotundifolium*—roundleaf geranium
* *Pelargonium vitifolium*—grapeleaf geranium

GROSSULARIACEAE—GOOSEBERRY FAMILY

Ribes indecorum—whiteflower currant
Ribes speciosum—fuchsiaflower gooseberry

JUGLANDACEAE—WALNUT FAMILY

Juglans californica—Southern California black walnut[1,2]

LAMIACEAE—MINT FAMILY

Salvia apiana—white sage
Salvia columbariae—chia
Salvia mellifera—black sage
Salvia leucophylla—purple sage

Stachys rigida var. *quercetorum*—rough hedgenettle
Stachys rigida var. *rigida*—rough hedgenettle
* *Lamium amplexicaule*—henbit deadnettle
* *Marrubium vulgare*—horehound

LYTHRACEAE—LOOSESTRIFE FAMILY
* *Lythrum hyssopifolia*—hyssop loosestrife
* *Punica granatum*—pomegranate

MALVACEAE—MALLOW FAMILY
Malacothamnus densiflorus—yellowstem bushmallow
Sidalcea sparsifolia—dwarf checkerbloom
* *Malva parviflora*—cheeseweed mallow
* *Malva pseudolavatera*—Cornish mallow
Malacothamnus fasciculatus—bush mallow

MELIACEAE—MAHOGANY FAMILY
* *Melia azedarach*—Chinaberrytree

MOLLUGINACEAE—CARPET-WEED FAMILY
* *Glinus lotoides*—lotus sweetjuice

MONTIACEAE—MONTIA FAMILY
Claytonia parviflora ssp. *parviflora*—streambank springbeauty
Claytonia perfoliata ssp. *mexicana*—miner's lettuce
Claytonia perfoliata—miner's lettuce
Calandrinia menziesii—red maids

MYRSINACEAE—MYRSINE FAMILY
* *Lysimachia monelli*—flaxleaf pimpernel
Lysimachia minima—chaffweed
* *Lysimachia arvensis*—scarlet pimpernel

MYRTACEAE—MYRTLE FAMILY
* *Eucalyptus camaldulensis*—river redgum
* *Eucalyptus globulus*—Tasmanian bluegum
* *Eucalyptus polyanthemos*—redbox
* *Eucalyptus sideroxylon*—red ironbark
* *Melaleuca citrina*—crimson bottlebrush
* *Leptospermum laevigatum*—Australian teatree

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Mirabilis laevis var. *crassifolia*—California four o'clock
Mirabilis laevis var. *retrorsa*—wishbone-bush

OLEACEAE—OLIVE FAMILY

* *Olea europaea*—olive

ONAGRACEAE—EVENING PRIMROSE FAMILY

Camissonia strigulosa—sandysoil suncup
Camissoniopsis bistorta—southern suncup
Camissoniopsis confusa—San Bernardino suncup
Camissoniopsis hirtella—Santa Cruz Island suncup
Camissoniopsis ignota—Jurupa Hills suncup
Clarkia epilobioides—canyon clarkia
Clarkia purpurea ssp. *quadrivulnera*—winecup clarkia
Clarkia purpurea ssp. *viminea*—winecup clarkia
Epilobium canum—hummingbird trumpet
Epilobium ciliatum—fringed willowherb
Eulobus californicus—California suncup
Oenothera elata—Hooker's evening primrose
*Clarkia d*elicata—delicate clarkia[1,2]

OROBANCHACEAE—BROOM-RAPE FAMILY

Castilleja affinis—coast Indian paintbrush
Castilleja exserta ssp. *exserta*—exserted Indian paintbrush
Castilleja foliolosa—Texas Indian paintbrush
Cordylanthus rigidus ssp. *setiger*—no common name

OXALIDACEAE—OXALIS FAMILY

Oxalis californica—California woodsorrel
* *Oxalis pes-caprae*—Bermuda buttercup

PAPAVERACEAE—POPPY FAMILY

Eschscholzia californica—California poppy
Romneya coulteri—Coulter's matilija poppy[1] ~~(planted)~~

PHRYMACEAE—LOPSEED FAMILY

Mimulus aurantiacus var. *puniceus*—orange bush monkeyflower
Mimulus brevipes—widethroat yellow monkeyflower
Mimulus guttatus—common monkey flower

PLANTAGINACEAE—PLANTAIN FAMILY

Antirrhinum nuttallianum ssp. *nuttallianum*—violet snapdragon
Antirrhinum nuttallianum ssp. *subsessile*—lesser snapdragon
Keckiella cordifolia—heartleaf keckiella
Plantago elongata—prairie plantain
Plantago ovata—desert Indianwheat
Nuttallanthus texanus—Texas toadflax
* *Plantago arenaria*—sand plantain
* *Plantago coronopus*—buckhorn plantain
* *Plantago lanceolata*—narrowleaf plantain
* *Plantago major*—common plantain
* *Veronica anagallis-aquatica*—water speedwell
Plantago erecta—dwarf plantain

PLATANACEAE—PLANE TREE, SYCAMORE FAMILY

Platanus racemosa—California sycamores

PLUMBAGINACEAE—LEADWORT FAMILY

* *Limonium sinuatum*—wavyleaf sea lavender

POLEMONIACEAE—PHLOX FAMILY

Eriastrum filifolium—lavender woollystar
Gilia angelensis—chaparral gilia
Linanthus dianthiflorus—fringed linanthus
Navarretia hamata ssp. *hamata*—hooked pincushionplant

POLYGONACEAE—BUCKWHEAT FAMILY

Chorizanthe fimbriata var. *fimbriata*—fringed spineflower
Chorizanthe fimbriata var. *laciniata*—fringed spineflower
Chorizanthe procumbens—prostrate spineflower
Chorizanthe staticoides—turkish rugging
Eriogonum fasciculatum var. *foliolosum*—Eastern Mojave buckwheat
Eriogonum gracile—slender woolly buckwheat
Lastarriaea coriacea—leather spineflower
Persicaria amphibia—longroot smartweed
Pterostegia drymarioides—woodland pterostegia
* *Polygonum argyrocoleon*—silversheath knotweed
* *Polygonum aviculare* ssp. *depressum*—prostrate knotweed
* *Rumex crispus*—curly dock
Chorizanthe polygonoides var. *longispina*—long-spined spineflower[1]

PORTULACACEAE—PURSLANE FAMILY

* *Portulaca oleracea*—little hogweed

PRIMULACEAE—PRIMROSE FAMILY

Primula clevelandii var. *clevelandii*—Padre's shooting star

PROTEACEAE—PROTEA FAMILY

* *Grevillea robusta*—silkoak

RANUNCULACEAE—BUTTERCUP FAMILY

Clematis lasiantha—pipestem clematis
Clematis ligusticifolia—western white clematis
Clematis pauciflora—ropevine clematis
Delphinium parryi ssp. *parryi*—San Bernardino larkspur
Thalictrum fendleri var. *fendleri*—Fendler's meadow-rue

RHAMNACEAE—BUCKTHORN FAMILY

Adolphia californica—California adolphia[1]
Ceanothus tomentosus—woolyleaf ceanothus
Ceanothus verrucosus—wart-stemmed ceanothus[1]
Rhamnus crocea—redberry buckthorn
Rhamnus ilicifolia—hollyleaf redberry
Ceanothus leucodermis—chaparral white thorn
Ceanothus oliganthus—hairy leaf ceanothus
Ceanothus crassifolius—hoary leaf ceanothus
Ceanothus verrucosus—wart-stemmed ceanothus[1]

ROSACEAE—ROSE FAMILY

Adenostoma fasciculatum var. *fasciculatum*—chamise
Adenostoma fasciculatum var. *obtusifolium*—chamise
Cercocarpus betuloides var. *betuloides*—birchleaf mountain mahogany
Cercocarpus minutiflorus—smooth mountain mahogany
Heteromeles arbutifolia—toyon
Prunus ilicifolia ssp. *ilicifolia*—hollyleaf cherry
Rubus ursinus—California blackberry
* *Rubus armeniacus*—Himalayan black berry

RUBIACEAE—MADDER FAMILY

Galium angustifolium ssp. *angustifolium*—narrowleaf bedstraw
Galium aparine—stickywilly
Galium nuttallii—climbing bedstraw

RUTACEAE—RUE FAMILY

Cneoridium dumosum—bush rue

SALICACEAE—WILLOW FAMILY

Populus fremontii ssp. *fremontii*—Fremont cottonwood
Salix exigua var. *hindsiana*—narrowleaf willow
Salix laevigata—red willow
Salix lasiolepis—arroyo willow
Salix tracyi—Tracy's willow
Salix gooddingii—black willow

SAPINDACEAE—SOAPBERRY FAMILY

Acer negundo—box-elder

SAURURACEAE—LIZARD'S-TAIL FAMILY

Anemopsis californica—yerba mansa

SCROPHULARIACEAE—FIGWORT FAMILY

Scrophularia californica—California figwort
* *Myoporum laetum*—myoporum

SIMAROUBACEAE—QUASSIA OR SIMAROUBA FAMILY

* *Ailanthus altissima*—tree of heaven

SOLANACEAE—NIGHTSHADE FAMILY

Datura wrightii—sacred thorn-apple
Physalis hederifolia var. *fendleri*—Fendler's groundcherry
Solanum douglasii—greenspot nightshade
Solanum parishii—Parish's nightshade
Solanum umbelliferum—bluewitch nightshade
Solanum xanti—chaparral nightshade
* *Nicotiana gauca*—tree tobacco
* *Physalis philadelphica*—Mexican groundcherry
* *Solanum nigrum*—black nightshade

TAMARICACEAE—TAMARISK FAMILY

* *Tamarix ramosissima*—saltcedar

TROPAEOLACEAE—NASTURTIUM FAMILY

* *Tropaeolum majus*—nasturtium

URTICACEAE—NETTLE FAMILY

Hesperocnide tenella—western stingingnettle

Parietaria hespera var. *californica*—California pellitory

Urtica dioica ssp. *gracilis*—California nettle

* *Urtica urens*—dwarf nettle

VERBENACEAE—VERVAIN FAMILY

Verbena menthifolia—mint vervain

* *Lantana camara*—lantana

VIOLACEAE—VIOLET FAMILY

Viola pedunculata—Johnny-jump-up

VITACEAE—GRAPE FAMILY

Vitis girdiana—desert wild grape

ZYGOPHYLLACEAE—CALTROP FAMILY

* *Tribulus terrestris*—puncturevine

* signifies introduced (non-native) species

[1] Special-Status Species

[2] Occurs in San Vicente Reservoir Alternative Only

APPENDIX K

Wildlife Compendium

APPENDIX K
Wildlife Compendium

Scientific Name	Common Name	San Vicente Reservoir Alternative[1]	Miramar Reservoir Alternative[2]	Both Alternatives[3]
AMPHIBIAN				
RANIDAE—TONGUELESS FROGS				
Lithobates catesbeianus	American bullfrog	X	–	–
BIRD				
ICTERIDAE—BLACKBIRDS				
Agelaius phoeniceus	red-winged blackbird	X	–	X
Euphagus cyanocephalus	Brewer's blackbird	X	–	X
Icterus bullockii	Bullock's oriole	X	–	–
Icterus cucullatus	hooded oriole	X	X	X
Molothrus ater	brown-headed cowbird	X	–	–
Quiscalus mexicanus	great-tailed grackle	–	X	X
AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS				
Psaltriparus minimus	bushtit	X	X	X
CARDINALIDAE—CARDINALS AND ALLIES				
Passerina amoena	Lazuli bunting	X	–	–
Passerina caerulea	blue grosbeak	X	–	X
Pheucticus melanocephalus	black-headed grosbeak	X	X	X
Piranga ludoviciana	western tanager	X	–	–
ANATIDAE—DUCKS, GEESE, AND SWANS				
Anas platyrhynchos	mallard	X	–	X
Anas strepera	gadwall	–	–	X
Branta hutchinsii	Cackling goose	–	–	X
Cairina moschata	Muscovy Duck	–	–	X
	Goose sp.	–	–	X
Lophodytes cucullatus	hooded merganser	–	–	X
EMBERIZIDAE—EMBERIZIDS				
Aimophila ruficeps	rufous-crowned sparrow	X	–	–
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	X	–	–
Chondestes grammacus	lark sparrow	–	–	X
Junco hyemalis	dark-eyed junco	X	–	–
Melospiza lincolnii	Lincoln's sparrow	X	–	–
Melospiza melodia	song sparrow	X	X	X
Melozone crissalis	California towhee	X	X	X
Pipilo maculatus	spotted towhee	X	X	X
Spizella atrogularis	black-chinned sparrow	–	–	X
Spizella breweri	Brewer's sparrow	–	X	–
Zonotrichia leucophrys	white-crowned sparrow	X	–	X
FALCONIDAE—CARACARAS AND FALCONS				
Falco sparverius	American kestrel	X	–	X

Scientific Name	Common Name	San Vicente Reservoir Alternative[1]	Miramar Reservoir Alternative[2]	Both Alternatives[3]
FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES				
Haemorhous mexicanus	house finch	X	X	X
Spinus psaltria	lesser goldfinch	X	X	X
Spinus tristis	American goldfinch	–	–	X
TYRANNIDAE—TYRANT FLYCATCHERS				
Contopus sordidulus	western wood-pewee	X	–	X
Empidonax difficilis	Pacific-slope flycatcher	X	X	X
Empidonax traillii	willow flycatcher	X	–	–
Myiarchus cinerascens	ash-throated flycatcher	X	X	X
Sayornis nigricans	black phoebe	X	X	X
Sayornis saya	Say's phoebe	X	X	X
Tyrannus verticalis	western kingbird	X	–	X
Tyrannus vociferans	Cassin's kingbird	X	–	X
CAPRIMULGIDAE—GOATSUCKERS				
Chordeiles acutipennis	lesser nighthawk	–	–	X
PODICIPEDIDAE—GREBES				
Aechmophorus clarkii	Clark's grebe	X	–	–
Aechmophorus occidentalis	western grebe	X	–	–
Podiceps nigricollis	eared grebe	X	–	–
Podilymbus podiceps	pied-billed grebe	–	–	X
ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES				
Accipiter cooperii	Cooper's hawk	X	X	X
Buteo jamaicensis	red-tailed hawk	X	X	X
Buteo lineatus	red-shouldered hawk	X	–	X
Elanus leucurus	white-tailed kite	–	–	X
Pandion haliaetus	osprey	X	–	–
ARDEIDAE—HERONS, BITTERNS, AND ALLIES				
Ardea alba	great egret	X	–	X
Ardea herodias	great blue heron	X	–	X
Butorides virescens	green heron	X	–	X
Egretta thula	snowy egret	–	–	X
Nycticorax nycticorax	black-crowned night-heron	–	–	X
TROCHILIDAE—HUMMINGBIRDS				
Calypte anna	Anna's hummingbird	X	X	X
Calypte costae	Costa's hummingbird	X	X	X
CORVIDAE—CROWS AND JAYS				
Aphelocoma californica	western scrub-jay	X	X	X
Corvus brachyrhynchos	American crow	X	X	X
Corvus corax	common raven	X	X	X
REGULIDAE—KINGLETS				
Regulus calendula	ruby-crowned kinglet	–	–	X

Scientific Name	Common Name	San Vicente Reservoir Alternative[1]	Miramar Reservoir Alternative[2]	Both Alternatives[3]
MIMIDAE—MOCKINGBIRDS AND THRASHERS				
Mimus polyglottos	northern mockingbird	X	X	X
Toxostoma redivivum	California thrasher	X	X	X
ODONTOPHORIDAE—NEW WORLD QUAIL				
Callipepla californica	California quail	X	X	X
CATHARTIDAE—CARDINALS AND ALLIES				
Cathartes aura	turkey vulture	X	X	X
PASSERIDAE—OLD WORLD SPARROWS				
Passer domesticus	house sparrow	X	X	X
SYLVIIDAE—SYLVIID WARBLERS				
Polioptila caerulea	blue-gray gnatcatcher	X	X	X
Polioptila californica californica	coastal California gnatcatcher	X	X	X
TYTONIDAE—BARN OWLS				
Tyto alba	barn owl	X	–	–
PSITTACIDAE—PARROTS				
Amazona viridigenalis	Red-crowned parrot	–	–	X
COLUMBIDAE—PIGEONS AND DOVES				
Columba livia	rock pigeon (rock dove)	X	X	X
Streptopelia decaocto	Eurasian collared-dove	–	–	X
Zenaida macroura	mourning dove	X	X	X
RALLIDAE—RAILS, GALLINULES, AND COOTS				
Fulica americana	American coot	X	X	X
CUCULIDAE—CUCKOOS, ROADRUNNERS, AND ANIS				
Geococcyx californianus	greater roadrunner	X	X	-
CHARADRIIDAE—LAPWINGS AND PLOVERS				
Charadrius vociferus	killdeer	X	–	X
PTILOGONATIDAE—SILKY-FLYCATCHERS				
Phainopepla nitens	phainopepla	X	X	X
STURNIDAE—STARLINGS				
Sturnus vulgaris	European starling	X	X	X
HIRUNDINIDAE—SWALLOWS				
Hirundo rustica	barn swallow	X	–	X
Petrochelidon pyrrhonota	cliff swallow	X	X	X
Stelgidopteryx serripennis	northern rough-winged swallow	X	–	X
APODIDAE—SWIFTS				
Aeronautes saxatalis	white-throated swift	X	X	X
LARIDAE—GULLS, TERNS, AND SKIMMERS				
Larus occidentalis	western gull	X	–	X
Sterna hirundo	common tern	X	–	–

Scientific Name	Common Name	San Vicente Reservoir Alternative[1]	Miramar Reservoir Alternative[2]	Both Alternatives[3]
TURDIDAE—THRUSHES				
Catharus guttatus	hermit thrush	X	–	–
Sialia mexicana	western bluebird	X	–	–
Turdus migratorius	American robin	X	–	–
VIREONIDAE—VIREOS				
Vireo bellii pusillus	least Bell's vireo	X	–	–
Vireo gilvus	warbling vireo	X	–	X
Vireo huttoni	Hutton's vireo	X	–	–
ESTRILDIDAE—WAXBILLS, MUNIAS AND ALLIES				
Lonchura atricapilla	Chesnut munia	X	–	–
Lonchura punctulata	scaly-breasted munia	X	–	X
BOMBYCILLIDAE—WAXWINGS				
Bombycilla cedrorum	cedar waxwing	–	–	X
PARULIDAE—WOOD-WARBLERS				
Cardellina pusilla	Wilson's warbler	X	–	X
Geothlypis trichas	common yellowthroat	X	–	X
Icteria virens	yellow-breasted chat	X	–	–
Oreothlypis celata	orange-crowned warbler	X	X	X
Setophaga coronata	yellow-rumped warbler	–	X	–
Setophaga petechia	yellow warbler	X	–	X
Setophaga townsendi	Townsend's warbler	–	–	X
PICIDAE—WOODPECKERS AND ALLIES				
Colaptes auratus	northern flicker	X	–	X
Melanerpes formicivorus	Acorn woodpecker	X	–	X
Picoides nuttallii	Nuttall's woodpecker	X	X	X
Picoides pubescens	downy woodpecker	X	X	X
TROGLODYTIDAE—WRENS				
Catherpes mexicanus	canyon wren	X	X	X
Salpinctes obsoletus	rock wren	X	X	X
Thryomanes bewickii	Bewick's wren	X	X	X
Troglodytes aedon	house wren	X	X	X
TIMALIIDAE—BABBLERS				
Chamaea fasciata	wrentit	X	X	X
INVERTEBRATE				
SCARABAEIDAE—BEETLES				
Cotinis mutabilis	Fig beetle	X	–	–
HESPERIIDAE—SKIPPERS				
Erynnis funeralis	funereal duskywing	X	–	X
Heliopetes ericetorum	northern white-skipper	X	–	X
Hylephila phyleus	fiery skipper	X	–	X
Lerodea eufala	Eufala skipper	X	–	X
Pyrgus albescens	white checkered-skipper	X	–	X

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LYCAENIDAE—BLUES, HAIRSTREAKS, AND COPPERS				
Brephidium exile	western pygmy-blue	–	–	X
Callophrys augustinus	brown elfin	–	–	X
Euphilotes battoides bernardino	Bernardino square-spotted blue	–	–	X
Glaucopsyche lygdamus australis	southern blue	X	–	X
Hemiargus ceraunus	Ceraunus blue	–	–	X
Hemiargus ceraunus gyas	Edward's blue	–	–	X
Leptotes marina	marine blue	X	X	X
Plebejus acmon	Acmon blue	X	X	X
Plebejus lupini	lupine blue	X	–	X
Strymon melinus	gray hairstreak	X	–	X
NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES				
Adelpha bredowii	California sister	–	–	X
Chlosyne californica	California patch	X	–	–
Coenonympha tullia california	common california ringlet	X	–	X
Danaus gilippus	queen	X	–	X
Danaus plexippus	monarch	X	–	X
Junonia coenia	common buckeye	X	X	X
Limenitis lorquini	Lorquin's admiral	–	–	X
Nymphalis antiopa	mourning cloak	X	–	X
Vanessa annabella	west coast lady	X	–	X
Vanessa atalanta	red admiral	X	–	X
Vanessa cardui	painted lady	X	X	X
Vanessa virginiensis	American lady	–	–	X
PAPILIONIDAE—SWALLOWTAILS				
Papilio eurymedon	pale swallowtail	X	X	X
Papilio rutulus	western tiger swallowtail	X	–	X
Papilio zelicaon	anise swallowtail	X	–	X
PIERIDAE—WHITES AND SULFURS				
Anthocharis cethura	desert orangetip	–	–	X
Anthocharis sara sara	Pacific sara orangetip	X	–	X
Colias eurydice	California dogface	X	–	–
Colias eurytheme	orange sulphur	–	–	X
Colias harfordii	Harford's sulphur	–	–	X
Eurema nicippe	sleepy orange	X	–	X
Nathalis iole	dainty sulphur	X	–	X
Phoebis sennae	cloudless sulphur	X	–	X
Pieris rapae	cabbage white	X	X	X
Pontia protodice	checkered white	X	X	X
Pontia sisymbrii	spring white	X	–	X

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RIODINIDAE—METALMARKS				
Apodemia mormo	Mormon Metalmark	X	–	X
Apodemia mormo virgulti	Behr's metalmark	X	X	X
PIERIDAE—WHITES AND SULPHURS				
	Sulphur sp.	X	–	X
BRANCHINECTIDAE—FAIRY SHRIMP				
Branchinecta sandiegonensis	San Diego fairy shrimp	X	X	X
MAMMAL				
CANIDAE—WOLVES AND FOXES				
Canis latrans	coyote	X	X	X
FELIDAE—CATS				
Lynx rufus	bobcat	–	–	X
CANIDAE—WOLVES AND FOXES				
Canis lupus familiaris	domestic dog	–	–	X
LEPORIDAE—HARES AND RABBITS				
Sylvilagus audubonii	desert cottontail	X	–	-
Sylvilagus bachmani	brush rabbit	X	X	X
MEPHITIDAE—SKUNKS				
Mephitis mephitis	striped skunk	X	–	–
GEOMYIDAE—POCKET GOPHERS				
Thomomys bottae	Botta's pocket gopher	X	X	X
PROCYONIDAE—RACCOONS AND RELATIVES				
Procyon lotor	raccoon	X	–	X
MURIDAE—RATS AND MICE				
	Neotoma sp. (midden)	–	X	X
SCIURIDAE—SQUIRRELS				
Spermophilus (Otospermophilus) beecheyi	California ground squirrel	X	X	X
CERVIDAE—DEERS				
Odocoileus hemionus	mule deer	X	–	–
REPTILE				
ANGUIDAE—ALLIGATOR LIZARDS				
Elgaria multicarinata	southern alligator lizard	–	–	X
PHRYNOSOMATIDAE—IGUANID LIZARDS				
Sceloporus occidentalis	western fence lizard	X	X	X
Sceloporus orcutti	granite spiny lizard	–	X	X
Uta stanburiana	common side-blotched lizard	X	X	X
SCINCIDAE—SKINKS				
Plestiodon skiltonianus	western skink	X	–	–

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TEIIDAE—WHIPTAIL LIZARDS				
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	X	–	–
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	X	–	–
BOIDAE—BOAS				
Lichanura trivirgata	rosy boa	X	–	–
COLUBRIDAE—COLUBRID SNAKES				
Lampropeltis californiae	California kingsnake	–	X	–
Pituophis catenifer	gophersnake	–	X	X
Thamnophis hammondii	two-striped gartersnake	X	–	–
VIPERIDAE—VIPERS				
Crotalus ruber	red diamondback rattlesnake	–	–	X
EMYDIDAE—BOX AND WATER TURTLES				
Actinemys marmorata	western pond turtle	–	X	X

Notes:

1 Observed within 500-foot buffer of the components only occurring within the San Vicente Reservoir Alternative study area.

2 Observed within 500-foot buffer of the components only occurring within the Miramar Reservoir Alternative study area.

3 Observed within 500-foot buffer of components shared by both San Vicente Reservoir Alternative and Miramar Reservoir Alternative study areas.

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Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Abronia maritima	red sand-verbena	None/None/4.2/None	Coastal dunes/perennial herb/Feb–Nov/0–328	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal dune vegetation present.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/CE/1B.1/Covered, Narrow Endemic	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/annual herb/Apr–June/33–3150	X	L	L	L	L	L	X	X	X	L	L	Low potential to occur in project components with suitable vegetation and clay soils. However, focused surveys for this species were negative. Not expected to occur in project components lacking suitable vegetation and/or clay soils.
Acmispon prostratus	Nuttall's acmispon	None/None/1B.1/ Covered	Coastal dunes, coastal scrub (sandy)/annual herb/Mar–June (July)/0–33	X	L	X	X	X	X	X	X	X	X	X	Low potential to occur along the Morena Pipelines, which run closer to the coast and contains sandy soils. Not expected to occur along other project components farther from the coast.
Adolphia californica	California adolphia	None/None/2B.1/None	Chaparral, coastal scrub, valley and foothill grassland; clay/perennial deciduous shrub/Dec–May/148–2428	X	L	L	L	L	L	X	~~X~~D	X	L	L	Observed along the Miramar Reservoir. Low potential to occur in project components with suitable vegetation and clay soils. This perennial shrub would likely have been observed during surveys if present. Not expected to occur in project components lacking suitable vegetation and/or clay soils.

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Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1/ Covered, Narrow Endemic	Coastal bluff scrub, coastal scrub/perennial leaf succulent/Sep–May/33–394	X	L	L	X	L	L	X	L	L	L	X	Low potential to occur within project components with suitable coastal scrub habitat. The project site has suitable vegetation and soils, but closest occurrences within San Diego County are only at two localities, Point Loma and Tijuana. Not expected to occur within project components lacking suitable coastal scrub habitat or outside of the species' known elevation range.
Ambrosia chenopodiifolia	San Diego bur-sage	None/None/2B.1/None	Coastal scrub/perennial shrub/Apr–June/180–509	X	L	L	X	L	L	X	L	L	L	X	Low potential to occur in project components with coastal scrub. However, this perennial shrub would have been observed during surveys if present. Not expected to occur in project components lacking coastal scrub habitat or Miramar Wastewater Treatment Plant Improvements, which is outside of the species' known elevation range.
Ambrosia monogyra	singlewhorl burrobrush	None/None/2B.2/None	Chaparral, Sonoran desert scrub; sandy/perennial shrub/Aug–Nov/33–1640	X	X	X	X	X	X	X	X	L	L	X	Low potential to occur in components with suitable sandy chaparral habitat; however, this perennial shrub would likely have been observed if present. Not expected to occur in project components lacking sandy chaparral.

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Ambrosia pumila	San Diego ambrosia	FE/None/ 1B.1/Covered, Narrow Endemic	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/66–1362	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and sandy loam or clay soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable vegetation and/or sandy loam or clay soils.
Aphanisma blitoides	aphanisma	None/None/1B.2/ Covered	Coastal bluff scrub, coastal dunes, coastal scrub; sandy or gravelly/annual herb/Mar–June/3–1001	X	L	X	X	X	X	X	X	X	X	X	Low potential to occur along the Morena Pipelines. Not expected to occur in other project components farther from the coast.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/1B.1/Covered	Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1198	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No maritime chaparral present.
Arctostaphylos otayensis	Otay manzanita	None/None/1B.2/ Covered	Chaparral, cismontane woodland; metavolcanic/perennial evergreen shrub/Jan–Apr/902–5577	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Artemisia palmeri	San Diego sagewort	None/None/4.2/None	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic/perennial deciduous shrub/(Feb) May–Sep/49–3002	X	D	L	X	L	L	X	L	L	~~D~~L	L	Observed along the Morena Pipelines ~~and the LFG Pipeline~~. Low potential to occur within the other components; would have been observed during surveys if present. Not expected to occur within project components lacking suitable habitat.

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Asplenium vespertinum	western spleenwort	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub; rocky/perennial rhizomatous herb/Feb–June/591–3281	X	X	X	X	X	L	X	L	X	X	L	Low potential to occur in project components with suitable vegetation within the known elevation range of the species. Focused surveys were negative for this species. Not expected to occur within project components lacking suitable habitat and/or outside the known elevation range of the species.
Astragalus deanei	Dean's milk-vetch	None/None/1B.1/None	Chaparral, cismontane woodland, coastal scrub, riparian forest/perennial herb/Feb–May/246–2280	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur within project components with suitable habitat within the species' known elevation range. The most recent (since 1995) occurrences for this species occur with the Cleveland National Forest or Dehesa. Not expected to occur within project components lacking suitable habitat or outside of the species' known elevation range.
Astragalus oocarpus	San Diego milk-vetch	None/None/1B.2/None	Chaparral (openings), cismontane woodland/perennial herb/May–Aug/1001–5000	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/CE/1B.1/Covered, Narrow Endemic	Coastal bluff scrub (sandy), coastal dunes, coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/3–164	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present and this species generally occurs along the coast.

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Atriplex coulteri	Coulter's saltbush	None/None/1B.2/None	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/10–1509	X	L	L	L	L	L	X	L	X	L	L	Low potential to occur in project components with suitable vegetation within the known elevation range of the species. Focused surveys were negative for this species. Not expected to occur within project components lacking suitable habitat and/or outside the known elevation range of the species.
Atriplex pacifica	South Coast saltscale	None/None/1B.2/None	Coastal bluff scrub, coastal dunes, coastal scrub, playas/ annual herb/Mar–Oct/0–459	X	L	L	X	L	L	X	L	L	L	X	Low potential to occur in project components with suitable vegetation within the known elevation range of the species. Focused surveys were negative for this species. Not expected to occur within project components lacking suitable habitat and/or outside the known elevation range of the species.
Atriplex parishii	Parish's brittlescale	None/None/1B.1/None	Chenopod scrub, playas, vernal pools; alkaline/ annual herb/June–Oct/82–6234	X	X	X	X	L	X	X	X	X	L	X	Low potential to occur within project components with vernal pools. Not expected to occur in other project components due to lack of suitable vegetation.
Baccharis vanessae	Encinitas baccharis	FT/CE/1B.1/Covered	Chaparral (maritime), cismontane woodland; sandstone/perennial deciduous shrub/Aug–Nov/197–2362	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. Perennial shrub would have been observed during surveys if present and all occurrences of this species are north of the project alignment (CDFW 2016).

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Berberis nevinii	Nevin's barberry	FE/CE/1B.1/Covered	Chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly/perennial evergreen shrub/ Mar–June/230–2707	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in areas with suitable vegetation and soils. Perennial shrub would have been observed during surveys if present.
Bergerocactus emoryi	golden-spined cereus	None/None/2B.2/None	Closed-cone coniferous forest, chaparral, coastal scrub; sandy/ perennial stem succulent/May–June/10–1296	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in areas with suitable vegetation and soils. Perennial shrub would have been observed during surveys if present.
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1/ Covered	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial bulbiferous herb/Apr–May/164–1526	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Brodiaea filifolia	thread-leaved brodiaea	FT/CE/1B.1/Covered	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay/perennial bulbiferous herb/Mar–June/82–3675	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1/ Covered	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay, sometimes serpentinite/perennial bulbiferous herb/May–July/98–5551	X	L	L	L	L	L	X	L	L	D	L	Observed along the LFG Pipeline. Low potential to occur in most other project components. Species would have been observed during surveys if present. Not expected to occur in project components lacking suitable habitat.

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Calamagrostis koelerioides	Fire reedgrass	None/None/None/ Covered	Chaparral, meadows and seeps; slopes, dry hills, ridges/perennial grass/June–Aug/0–7546	X	X	X	X	X	X	X	L	L	L	L	Low potential to occur in components with suitable chaparral habitat; however, this species was not observed during focused surveys. Not expected to occur in project components lacking chaparral.
Calandrinia breweri	Brewer's calandrinia	None/None/4.2/None	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/Mar–June/33–4003	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
California macrophylla	round-leaved filaree	None/None/1B.2/None	Cismontane woodland, valley and foothill grassland; clay/annual herb/Mar–May/49–3937	X	L	L	L	L	L	X	L	X	L	X	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Calochortus dunnii	Dunn's mariposa lily	None/CR/1B.2/Covered	Closed-cone coniferous forest, chaparral, valley and foothill grassland; gabbroic or metavolcanic, rocky/perennial bulbiferous herb/(Feb) Apr–June/607–6004	X	X	X	X	X	X	X	L	X	X	L	Low potential to occur along the North City Pipeline and Miramar Wastewater Treatment Plant Improvements area; not observed during focused surveys. Not expected to occur in project components below the species' known elevation range.

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Camissoniopsis lewisii	Lewis' evening-primrose	None/None/3/None	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/Mar–May (June)/0–984	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable habitat. Species would have been observed during surveys if present.
Castilleja plagiotoma	Mojave paintbrush	None/None/4.3/None	Great Basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland/perennial herb (hemiparasitic)/Apr–June/984–8202	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Caulanthus heterophyllus	California mustard	None/None/None/Covered	Coastal scrub, chaparral; dry, open, generally after fire, disturbance/annual herb/Mar–May/0–4593	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable habitat. Species would have been observed during surveys if present.
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2/ Covered	Closed-cone coniferous forest, chaparral/perennial evergreen shrub/Apr–June/771–2477	X	X	X	X	X	X	X	X	X	X	L	Low potential to occur in the Miramar Wastewater Treatment Plant Improvements project component. Not expected to occur to occur in other project components, which are outside of the species' known elevation range.
Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2/None	Chaparral (metavolcanic or gabbroic)/perennial evergreen shrub/Jan–Apr/1969–3609	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2/ Covered	Chaparral/perennial evergreen shrub/Dec–May/3–1247	X	~~L~~D	X	X	X	X	X	L	D	D	L	Observed within the buffer around the MBC, Morena Pipelines, and along the LFG Pipeline. Low potential to occur in all other components with chaparral habitat where focused surveys were negative. Not expected to occur in project components lacking chaparral.
Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1/None	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–Nov/0–1575	X	L	L	L	L	L	X	L	X	L	L	Low potential to occur due to limited suitable vernally mesic habitat and because it was not observed during 2016 rare plant surveys. In addition, all occurrences of southern tarplant are north of the project site (CDFW 2016). Not expected to occur in project components lacking suitable habitat.
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1/None	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2100	X	L	L	L	L	L	X	L	L	L	X	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1/None	Coastal bluff scrub (sandy), coastal dunes/annual herb/Jan–Aug/0–328	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present. This species generally occurs along the coast.
Chamaebatia australis	southern mountain misery	None/None/4.2/None	Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/984–3346	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/CE/1B.2/Covered	Coastal dunes, marshes and swamps (coastal salt)/annual herb (hemiparasitic)/ May–Oct/0–98	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal dune or coastal salt marsh vegetation present.
Chorizanthe leptotheca	Peninsular spineflower	None/None/4.2/None	Chaparral, coastal scrub, lower montane coniferous forest; alluvial fan, granitic/annual herb/May–Aug/984–6234	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/CE/1B.1/None	Closed-cone coniferous forest, chaparral (maritime), coastal scrub; sandy openings/annual herb/Mar–May/10–410	X	L	X	X	X	X	X	X	L	L	X	Low potential to occur within project components with chaparral and coastal sage scrub and sandy soils. However, focused surveys for this species were negative. Not expected to occur within project components lacking suitable sandy habitat.
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2/None	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; often clay/annual herb/Apr–July/98–5020	X	L	L	L	L	L	X	L	D	D	L	Observed within the buffer around the MBC and along the LFG Pipeline. Low potential to occur in all other components that have chaparral, coastal scrub, grassland, or vernal pools with clay soils. Not expected to occur in project components that lack such suitable habitat.

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Cistanthe maritima	seaside cistanthe	None/None/4.2/None	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy/annual herb/(Feb) Mar–June (Aug)/16–984	X	L	X	X	X	X	X	X	X	X	X	Low potential to occur along the Morena Pipelines, which as suitable sandy coastal scrub, but focused surveys were negative. Not expected to occur in other project components that are farther from the coast since this species is known to occur at locales with moist sea breezes (Reiser 2001).
Clarkia delicata	delicate clarkia	None/None/1B.2/None	Chaparral, cismontane woodland; often gabbroic/annual herb/Apr–June/771–3281	X	X	X	X	X	X	X	X	X	X	L	Low potential to occur within the Miramar Wastewater Treatment Plant Improvements; however, focused surveys for this species were negative. Not expected to occur in other project components because they are below the species' known elevation range.
Clinopodium chandleri	San Miguel savory	None/None/1B.2/ Covered	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic, or metavolcanic/perennial shrub/Mar–July/394–3527	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components that contain suitable habitat within the correct elevation range due to negative focused surveys due to limited suitable habitat and not observed during 2016 rare plant surveys. Not expected to occur in project components that lack suitable habitat and/or that are outside the known elevation range for this species.

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Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2/None	Chaparral, cismontane woodland/perennial evergreen shrub/Apr–June/98–2592	X	L	X	X	X	X	X	L	L	L	L	Low potential to occur in most project components with chaparral or oak woodland because this shrub would have been observed during surveys if present. Not expected to occur in components without suitable chaparral or oak woodland habitat.
Convolvulus simulans	small-flowered morning-glory	None/None/4.2/None	Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentinite seeps/annual herb/Mar–July/98–2297	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	None/None/1B.1/None	Coastal bluff scrub, chaparral, coastal scrub/perennial herb/June–Sep/10–377	X	L	L	X	L	L	X	L	L	L	X	Low potential to occur in project components with suitable vegetation and soils and within the elevation range of this species. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat and/or outside the known elevation range for this species.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1/ Covered	Coastal bluff scrub, chaparral (maritime, openings), coastal scrub; sandy/perennial herb/May–Sep/49–492	X	L	X	X	L	L	X	L	L	L	X	Low potential to occur. Coastal sage scrub present in many components, but Del Mar Mesa sand aster occurrences are all north of the proposed project and focused surveys were negative.

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Cryptantha wigginsii	Wiggins' cryptantha	None/None/1B.2/None	Coastal scrub; often clay/annual herb/Feb–June/66–902	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1/Covered, Narrow Endemic	Chaparral, coastal scrub/perennial stem succulent/Apr–May/98–492	X	L	L	X	L	L	X	L	L	L	X	Low potential to occur in project components with suitable chaparral and/or coastal scrub. Perennial succulent would have been observed during surveys if present.
Deinandra conjugens	Otay tarplant	FT/CE/1B.1/Covered, Narrow Endemic	Coastal scrub, valley and foothill grassland; clay/annual herb/May–June/82–984	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Deinandra paniculata	paniculate tarplant	None/None/4.2/None	Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic, sometimes sandy/annual herb/Apr–Nov/82–3084	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Dichondra occidentalis	western dichondra	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial rhizomatous herb/(Jan) Mar–July/164–1640	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in most project components due to negative focused surveys. Not expected to occur in project components lacking suitable habitat.

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Dicranostegia orcuttiana	Orcutt's bird's-beak	None/None/2B.1/ Covered	Coastal scrub/annual herb (hemiparasitic)/ (Mar) Apr–July (Sep)/33–1148	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable coastal scrub. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable coastal scrub.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1/None	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland; rocky, often clay or serpentinite/perennial herb/Apr–June/16–1476	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur within components with suitable habitat. Species would have been observed during surveys if present. Not expected to occur in project components with no suitable habitat.
Dudleya brevifolia	short-leaved dudleya	None/CE/1B.1/ Covered, Narrow Endemic	Chaparral (maritime, openings), coastal scrub; Torrey sandstone/perennial herb/Apr–May/98–820	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No Torrey sandstone soils within the proposed project.
Dudleya variegata	variegated dudleya	None/None/1B.2/Covered, Narrow Endemic	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/ Apr–June/10–1903	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Dudleya viscida	sticky dudleya	None/None/1B.2/ Covered	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/perennial herb/ May–June/33–1804	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur within components with suitable habitat. Species would have been observed during surveys if present. Not expected to occur in project components with no suitable habitat.

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Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1/ Covered	Chaparral, coastal scrub; mesic/perennial evergreen shrub/(July) Sep–Nov/ 98–1969	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur within components with suitable habitat. Species would have been observed during surveys if present. Not expected to occur in project components with no suitable habitat.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/CE/1B.1/Covered	Coastal scrub, valley and foothill grassland, vernal pools; mesic/annual / perennial herb/ Apr–June/66–2034	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Erysimum ammophilum	sand-loving wallflower	None/None/1B.2/ Covered	Chaparral (maritime), coastal dunes, coastal scrub; sandy, openings/perennial herb/Feb–June/0–197	X	L	X	X	X	X	X	X	X	X	X	Low potential to occur along the Morena Pipelines due to suitable sandy chaparral and coastal scrub, but lack of observations during focused surveys. Not expected to occur at the Morena Pump Station due to lack of suitable habitat. Not expected to occur in the remaining project components because they are above the species' known elevation range.
Euphorbia misera	cliff spurge	None/None/2B.2/None	Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky/perennial shrub/Dec–Aug (Oct)/ 33–1640	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Perennial shrub would likely have been observed if present. Not expected to occur in project components lacking suitable habitat.

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Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1/ Covered	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/May–June/ 10–1476	X	L	L	L	L	L	X	~~L~~D	L	L	L	Observed along the Miramar Reservoir. Low potential to occur in most project components due to lack of observations during focused surveys or not expected to occur due to lack of suitable habitat.
Frankenia palmeri	Palmer's frankenia	None/None/2B.1/None	Coastal dunes, marshes and swamps (coastal salt), playas/ perennial herb/ May–July/0–33	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
Fremontodendron mexicanum	Mexican flannelbush	FE/CR/1B.1/None	Closed-cone coniferous forest, chaparral, cismontane woodland; gabbroic, metavolcanic, or serpentinite/perennial evergreen shrub/ Mar–June/33–2349	X	L	X	X	X	X	X	L	L	L	L	Low potential to occur within components that have chaparral vegetation. Not expected to occur in remaining project components. No suitable vegetation present.
Geothallus tuberosus	Campbell's liverwort	None/None/1B.1/None	Coastal scrub (mesic), vernal pools; soil/ephemeral liverwort/N.A./33–1969	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable coastal scrub or vernal pools. Focused surveys were negative for this species. Not expected to occur in project components lacking suitable habitat.
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	None/None/3.1/None	Chaparral (mesic, disturbed areas)/annual herb/ Apr–June/1476–2297	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Grindelia hallii	San Diego gumplant	None/None/1B.2/None	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/ perennial herb/May–Oct/607–5725	X	X	X	X	X	X	X	L	X	X	L	Low potential to occur along the North City Pipeline and within the Miramar Wastewater Treatment Plant Improvements where there is suitable chaparral or grassland habitat; however, focused surveys for this species were negative. Not expected to occur in the remaining project components because they are below the species' known elevation range.
Harpagonella palmeri	Palmer's grappling-hook	None/None/4.2/None	Chaparral, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–May/66–3133	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Hazardia orcuttii	Orcutt's hazardia	FC/CT/1B.1/None	Chaparral (maritime), coastal scrub; often clay/perennial evergreen shrub/Aug–Oct/262–279	X	L	X	X	X	X	X	X	X	L	X	Low potential to occur along the Morena Pipelines and LFG Pipeline due to suitable sandy chaparral and coastal scrub, but lack of observations during focused surveys. Not expected to occur in the remaining project components because they are outside the species' known elevation range.

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Hesperocyparis forbesii	Tecate cypress	None/None/1B.1/ Covered	Closed-cone coniferous forest, chaparral; clay, gabbroic or metavolcanic/ perennial evergreen tree/N.A./262–4921	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. Perennial tree would have been observed during surveys if present.
Heterotheca sessiliflora ssp. *sessiliflora*	beach golden-aster	None/None/1B.1/None	Chaparral (coastal), coastal dunes, coastal scrub/perennial herb/Mar–Dec/0–4019	X	L	X	X	X	X	X	X	X	X	X	Low potential to occur along the Morena Pipelines due to lack of observations during focused surveys. Not expected to occur within project components farther from the coast.
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/annual herb/May–Nov/197–3609	X	L	D	L	D	L	X	~~L~~D	D	D	L	Observed within the buffer around the MBC, NCWRP, North City Pipeline, North City Pure Water Facility, and along the LFG Pipeline. Low potential to occur in other project components due to negative focused surveys. Not expected to occur in project components that lack suitable habitat.
Hordeum intercedens	vernal barley	None/None/3.2/None	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools/ annual herb/Mar–June/ 16–3281	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur in project components lacking suitable habitat.
Horkelia truncata	Ramona horkelia	None/None/1B.3/None	Chaparral, cismontane woodland; clay, gabbroic/perennial herb/May–June/1312–4265	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2/None	Chaparral, coastal scrub (sandy, often in disturbed areas)/perennial shrub/Apr–Nov/33–443	X	L	L	X	L	L	X	L	D	L	X	Observed within the buffer around the MBC. Low potential to occur in all other components. Perennial shrub would likely have been observed during surveys if present. Not expected to occur in project components lacking suitable habitat.
Iva hayesiana	San Diego marsh-elder	None/None/2B.2/None	Marshes and swamps, playas/ perennial herb/ Apr–Oct/33–1640	X	~~L~~D	X	X	X	X	X	~~L~~D	X	L	L	Observed within the buffer around the Morena Pipelines and the North City Pipeline. Low potential to occur within project components with suitable freshwater marsh habitat where this perennial herb would likely have been observed during surveys if present. Although a portion of the North City Pipeline contains areas of freshwater marsh that were not surveyed, the area is surrounded by development. Not expected to occur with the other components.
Juglans californica	Southern California black walnut	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub; alluvial/ perennial deciduous tree/ Mar–Aug/164–2953	X	L	X	X	X	X	X	X	X	X	X	Not expected to occur in other project components. Perennial tree would have been observed during surveys if present.

Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Juncus acutus ssp. *leopoldii*	South-western spiny rush	None/None/4.2/None	Coastal dunes (mesic), meadows and seeps (alkaline seeps), marshes and swamps (coastal salt)/perennial rhizomatous herb/(Mar) May–June/ 10–2953	~~X~~D	X	X	X	X	X	X	X	X	X	X	Observed within the San Diego River floodplain south of the Morena Pump Station. Not expected to occur. This conspicuous perennial species would have been observed during surveys if present.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1/None	Marshes and swamps (coastal salt), playas, vernal pools/annual herb/Feb–June/3–4003	X	X	X	X	L	X	X	X	X	L	X	Low potential to occur within vernal pools on site; focused surveys were negative. Not expected to occur in project components without vernal pools.
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2/ Covered	Closed-cone coniferous forest, chaparral, cismontane woodland/perennial shrub/Apr–July/1706–4495	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Lepechinia ganderi	Gander's pitcher sage	None/None/1B.3/ Covered	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metavolcanic/perennial shrub/June–July/ 1001–3297	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3/None	Chaparral, coastal scrub/annual herb/ Jan–July/3–2904	X	L	L	X	L	L	X	L	D	D	L	Observed within the buffer around the MBC and along the LFG Pipeline. Low potential to occur in other project components due to lack of observations during focused surveys. Not expected to occur in project components lacking suitable habitat.

APPENDIX L

Plant Species Potentially Occurring within Miramar Reservoir

Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Leptosiphon grandiflorus	large-flowered leptosiphon	None/None/4.2/None	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; usually sandy/annual herb/ Apr–Aug/16–4003	X	L	X	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils; focused surveys were negative. Not expected to occur in project components lacking suitable vegetation and sandy soils.
Leptosyne maritima	sea dahlia	None/None/2B.2/None	Coastal bluff scrub, coastal scrub/perennial herb /Mar–May/16–492	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. Species prefers sandstone cliffs near the ocean, which do not occur within the project site and focused surveys were negative for this species.
Lycium californicum	California box-thorn	None/None/4.2/None	Coastal bluff scrub, coastal scrub/perennial shrub/(Dec) Mar–Aug/ 16–492	X	L	L	X	L	L	X	L	L	L	X	Low potential to occur. Perennial shrub would have been observed during surveys if present. Not expected to occur within project components lacking suitable habitat.
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2/None	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/Mar–May/49–3510	X	L	L	L	L	L	X	L	L	~~L~~D	L	Observed along the LFG Pipeline. Low potential to occur in project components with suitable vegetation and soils; focused surveys were negative. Not expected to occur in project components lacking suitable vegetation and sandy soils.

Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Mimulus clevelandii	Cleveland's bush monkeyflower	None/None/4.2/ Covered	Chaparral, cismontane woodland, lower montane coniferous forest; gabbroic, often in disturbed areas, openings, rocky/perennial rhizomatous herb/ Apr–July/1476–6562	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Mimulus aurantiacus var. *aridus*	low bush monkey-flower	None/None/4.3/None	Chaparral (rocky), Sonoran desert scrub/perennial evergreen shrub/ Apr–July/2461–3937	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Mimulus diffusus	Palomar monkey-flower	None/None/4.3/None	Chaparral, lower montane coniferous forest; sandy or gravelly/ annual herb/ Apr–June/4003–6004	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Mobergia calculiformis	light gray lichen	None/None/3/None	Coastal scrub (?); on rocks/crustose lichen (saxicolous)/ N.A./33–33	X	L	X	X	X	X	X	X	X	X	X	Low potential to occur along the Morena Pipelines. There is only one historical occurrence within the City of San Diego immediately south of Balboa Park (Consortium of North American Lichen Herbaria). The project site is approximately 4 miles north of Balboa Park. Not expected to occur in other project components due to lack of suitable coastal scrub habitat and/or elevations above the species' known elevation range.
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2/Cover ed	Chaparral, cismontane woodland/perennial rhizomatous herb/June–Aug/984–5167	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Monardella viminea	willowy monardella	FE/CE/1B.1/Covered	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; alluvial ephemeral washes/perennial herb/June–Aug/164–738	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable alluvial ephemeral washes present.
Mucronea californica	California spineflower	None/None/4.2/None	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy/annual herb/Mar–July (Aug)/0–4593	X	L	X	L	X	X	X	X	X	X	X	Low potential to occur along the Morena Pipelines due to suitable vegetation and sandy soils. However, this species was not observed during focused surveys. Not expected to occur in project components lacking suitable habitat, including sandy soils.
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1/None	Valley and foothill grassland, vernal pools (alkaline)/ annual herb/Mar–June/66–2100	X	X	L	L	L	L	X	L	L	L	X	Low potential to occur in the project site due to limited suitable habitat and not observed during 2016 rare plant surveys. Historical occurrences are known from three localities, San Onofre, Camp Pendleton, and Otay Mesa. Not expected to occur within project components lacking suitable vegetation.
Nama stenocarpa	mud nama	None/None/2B.2/None	Marshes and swamps (lake margins, riverbanks)/ annual/perennial herb/Jan–July/16–1640	X	L	X	X	X	X	X	L	X	L	L	Low potential to occur in project components with marshes and/or riverbanks with suitable habitat. Not expected to occur in project components lacking suitable habitat.

Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Navarretia fossalis	spreading navarretia	FT/None/1B.1/Covered, Narrow Endemic	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/annual herb/Apr–June/98–2149	X	L	X	X	L	L	X	L	X	L	L	Low potential to occur in project components with suitable vegetation and clay soils. Closest occurrence is within the MCAS Miramar, east of the Miramar Landfill and north SR-52. Not expected to occur within project components lacking suitable habitat.
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.1/None	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools; mesic/ annual herb/Apr–July/10–3970	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur. Species would have been observed during surveys if present. Historical occurrences are known from Kearny Mesa off of Kearny Villa Road but not with the project site. Not expected to occur within project components lacking suitable vegetation.
Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2/None	Coastal dunes/annual herb/Apr–Sep/0–328	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal dune habitat present.
Nemacaulis denudata var. *gracilis*	slender cotton-heads	None/None/2B.2/None	Coastal dunes, desert dunes, Sonoran desert scrub/annual herb/(Mar) Apr–May/-164–1312	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
Nolina interrata	Dehesa nolina	None/CE/1B.1/Covered	Chaparral (gabbroic, metavolcanic, or serpentinite)/perennial herb/June–July/607–2805	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. Limited suitable gabbroic, metavolcanic, or serpentinite chaparral present and this perennial herb would have been observed during surveys if present.

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Ophioglossum californicum	California adder's-tongue	None/None/4.2/None	Chaparral, valley and foothill grassland, vernal pools (margins); mesic/perennial rhizomatous herb/(Dec) Jan–June/197–1722	X	X	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within project components lacking suitable habitat.
Orcuttia californica	California Orcutt grass	FE/CE/1B.1/Covered, Narrow Endemic	Vernal pools/annual herb/Apr–Aug/49–2165	X	X	X	X	L	X	X	X	X	L	X	Low potential to occur at the North City Pure Water Facility and along the LFG Pipeline where vernal pools are present, but the species was not observed during focused surveys. Not expected to occur within project components lacking suitable vernal pool habitat.
Orobanche parishii ssp. *brachyloba*	short-lobed broomrape	None/None/4.2/None	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/ perennial herb (parasitic)/Apr–Oct/ 10–1001	X	L	X	X	X	X	X	X	X	X	X	Low potential to occur along the Morena Pipelines due to suitable vegetation and sandy soils. However, this species was not observed during focused surveys. Not expected to occur in project components lacking suitable habitat, including sandy soils.
Packera ganderi	Gander's ragwort	None/CR/1B.2/Covered	Chaparral (burns, gabbroic outcrops)/perennial herb/Apr–June/1312–3937	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2/None	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley and foothill grassland/annual herb/Mar–July/262–6070	X	L	L	L	L	L	X	~~L~~D	L	D	L	Observed along the LFG Pipeline and the Miramar Reservoir. Low potential to occur in all other components with negative survey results. Not expected to occur in project components lacking suitable habitat.
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	None/None/3.2/None	Chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt); sandy, sometimes rocky/perennial herb/ Mar–Aug/16–984	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within project components lacking suitable habitat.
Phacelia stellaris	Brand's star phacelia	FC/None/1B.1/None	Coastal dunes, coastal scrub/annual herb/ Mar–June/3–1312	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within project components lacking suitable habitat.
Pinus torreyana ssp. *torreyana*	Torrey pine	None/None/1B.2/ Covered	Closed-cone coniferous forest, chaparral; sandstone/perennial evergreen tree/N.A./ 246–525	X	X	X	X	X	X	X	X	X	X	X	~~Not expected to occur. Perennial tree would have been observed during surveys if present.~~Torrey pines were observed within the Miramar Reservoir study area; however, trees are planted and not native occurrences.

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Piperia cooperi	chaparral rein orchid	None/None/4.2/None	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/Mar–June/49–5200	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within project components lacking suitable habitat.
Pogogyne abramsii	San Diego mesa mint	FE/CE/1B.1/Covered, Narrow Endemic	Vernal pools/annual herb/Mar–July/295–656	X	X	X	X	L	X	X	X	X	L	X	Low potential to occur at the North City Pure Water Facility and along the LFG Pipeline where vernal pools are present, but the species was not observed during focused surveys. Not expected to occur within project components lacking suitable vernal pool habitat.
Pogogyne nudiuscula	Otay Mesa mint	FE/CE/1B.1/Covered, Narrow Endemic	Vernal pools/annual herb/May–July/295–820	X	X	X	X	L	X	X	X	X	L	X	Low potential to occur at the North City Pure Water Facility and along the LFG Pipeline where vernal pools are present, but the species was not observed during focused surveys. Not expected to occur within project components lacking suitable vernal pool habitat.

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Polygala cornuta var. *fishiae*	Fish's milkwort	None/None/4.3/None	Chaparral, cismontane woodland, riparian woodland/perennial deciduous shrub/ May–Aug/328–3281	X	L	X	X	X	X	X	L	L	L	L	Low potential to occur in project components with suitable habitat, but this perennial deciduous shrub would likely have been observed during surveys if present. Not expected to occur in project components lacking suitable habitat or outside the species' known elevation range.'
Pseudognaphalium leucocephalum	white rabbit-tobacco	None/None/2B.2/None	Chaparral, cismontane woodland, coastal scrub, riparian woodland; sandy, gravelly/perennial herb/(July) Aug–Nov (Dec)/0–6890	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within project components lacking suitable habitat.
Quercus cedrosensis	Cedros Island oak	None/None/2B.2/None	Closed-cone coniferous forest, chaparral, coastal scrub/perennial evergreen tree/Apr–May/837–3150	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1/None	Closed-cone coniferous forest, chaparral, coastal scrub; sandy, clay loam/perennial evergreen shrub/Feb–Apr (Aug)/ 49–1312	X	L	~~L~~D	X	L	L	X	~~L~~D	D	~~L~~D	L	Observed within the buffer around the MBC, LFG Pipeline, and the Miramar Reservoir. Low potential to occur in all other components because this evergreen shrub would likely have been observed during surveys if present. Not expected to occur within project components lacking suitable habitat.
Quercus engelmannii	Engelmann oak	None/None/4.2/None	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/perennial deciduous tree/Mar–June/164–4265	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. Perennial tree would have been observed during surveys if present.

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Rosa minutifolia	small-leaved rose	None/CE/2B.1/Covered	Chaparral, coastal scrub/perennial deciduous shrub/Jan–June/492–525	X	X	X	X	X	X	X	L	X	X	L	Low potential to occur in components at higher elevation with suitable chaparral or coastal scrub habitat. However, perennial shrub would likely have been observed during surveys if present. Not expected to occur in project components below the species' known elevation range.
Salvia munzii	Munz's sage	None/None/2B.2/None	Chaparral, coastal scrub/perennial evergreen shrub/Feb–Apr/377–3494	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in most project components because this shrub would likely have been observed during surveys if present. Not expected to occur within project components lacking suitable habitat.
Selaginella cinerascens	ashy spike-moss	None/None/4.1/None	Chaparral, coastal scrub/perennial rhizomatous herb/N.A./ 66–2100	X	L	D	X	~~L~~D	L	X	~~L~~D	D	D	L	Observed within the buffer around the MBC, ~~and~~ NCWRP, NCPWF, North City Pipeline, and the LFG Pipeline. Observed along the Miramar Reservoir. Low potential to occur in all other components due to lack of observations during focused surveys. Not expected to occur within project components lacking suitable vegetation.

Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Senecio aphanactis	chaparral ragwort	None/None/2B.2/None	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/Jan–Apr/49–2625	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils; focused surveys were negative. Not expected to occur in project components lacking suitable vegetation and sandy soils.
Solanum xanti	Purple nightshade	None/None/None/ Covered	Coastal scrub, chaparral, cismontane woodland, lower montane coniferous forest/perennial herb / perennial shrub/ June–July/0–8858	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils; focused surveys were negative. Not expected to occur in project components lacking suitable vegetation and sandy soils.
Sphaerocarpos drewei	bottle liverwort	None/None/1B.1/None	Chaparral, coastal scrub; openings, soil/ephemeral liverwort/N.A./295–1969	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur in project components with suitable vegetation and soils within the elevation range of the species; focused surveys were negative. Not expected to occur in project components lacking suitable vegetation and sandy soils.
Stemodia durantifolia	purple stemodia	None/None/2B.1/None	Sonoran desert scrub (often mesic, sandy)/perennial herb/Jan–Dec/591–984	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable desert scrub habitat present.
Stipa diegoensis	San Diego County needle grass	None/None/4.2/None	Chaparral, coastal scrub; rocky, often mesic/perennial herb/Feb–June/33–2625	X	L	L	X	L	L	X	L	L	L	L	Low potential to occur. Species would have been observed during surveys if present. Not expected to occur in project components lacking suitable vegetation.

Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Streptanthus bernardinus	Laguna Mountains jewelflower	None/None/4.3/None	Chaparral, lower montane coniferous forest/perennial herb/May–Aug/2198–8202	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Stylocline citroleum	oil neststraw	None/None/1B.1/None	Chenopod scrub, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–Apr/164–1312	X	L	L	L	L	L	X	L	L	L	L	Low potential to occur. Species would have been observed during surveys if present. Not expected to occur in project components lacking suitable vegetation.
Suaeda esteroa	estuary seablite	None/None/1B.2/None	Marshes and swamps (coastal salt)/perennial herb/May–Oct (Jan)/0–16	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal salt marsh present.
Suaeda taxifolia	woolly seablite	None/None/4.2/None	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/ perennial evergreen shrub/Jan–Dec/0–164	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal habitat present.
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2/ Covered	Chaparral, coastal scrub/perennial deciduous shrub/Apr–May/541–3281	X	X	X	X	X	X	X	L	X	X	L	Low potential to occur in components at higher elevation with suitable chaparral or coastal scrub habitat. However, perennial shrub would likely have been observed during surveys if present. Not expected to occur in project components below the species' known elevation range.
Texosporium sancti-jacobi	woven-spored lichen	None/None/3/None	Chaparral (openings); on soil, small mammal pellets, dead twigs, and on *Selaginella* spp./crustose lichen (terricolous)/ N.A./951–2165	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/ State/CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	Pure Water Dechlorination Facility (Dechlorination Facility)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Wastewater Treatment Plant Improvements (Miramar WTP)	Potential to Occur Discussion
Triquetrella californica	coastal triquetrella	None/None/1B.2/None	Coastal bluff scrub, coastal scrub; soil/moss/ N.A./ 33–328	X	L	L	X	L	L	X	L	X	L	X	Low potential to occur along the Morena Pipelines. Not expected to occur in other project components farther from the coast. Known in California from fewer than ten small coastal occurrences.
Viguiera laciniata	San Diego County viguiera	None/None/4.2/None	Chaparral, coastal scrub/perennial shrub/Feb–June (Aug)/197–2461	X	L	D	X	L	L	X	D	L	D	L	Observed within the buffer around the North City Pipeline and NCWRP and along the LFG Pipeline. Low potential to occur in all other components that have suitable habitat, but where focused surveys were negative. Not expected to occur within project components lacking suitable habitat.
Xanthisma junceum	rush-like bristleweed	None/None/4.3/None	Chaparral, coastal scrub/perennial herb/June–Jan/787–3281	X	X	X	X	X	X	X	X	X	X	L	Low potential to occur within the Miramar Wastewater Treatment Plant Improvements; however, focused surveys for this species were negative. Not expected to occur in other project components because they are below the species' known elevation range.

Notes:
X = not expected (no suitable habitat and/or outside elevation range)
D = detected within the component or 100-foot buffer
L = low potential (suitable habitat but surveys were negative)
Status Legend:
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing
DL: Delisted
CE: State listed as endangered
CT: State listed as threatened
CR: State Rare

CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CRPR 3: Plants About Which More Information is Needed - A Review List
CRPR 4: Plants of Limited Distribution - A Watch List
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

APPENDIX M

Plant Species Potentially Occurring within San Vicente Reservoir

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline-Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Abronia maritima	red sand-verbena	None/None/4.2/ None	Coastal dunes/perennial herb/Feb–Nov/0–328	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal dune vegetation present.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/CE/1B.1/ Covered, Narrow Endemic	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/annual herb/Apr–June/33–3150	X	L	L	L	L	L	L	L	L	L	X	X	L	Low potential to occur in Project components with suitable vegetation and clay soils. However, focused surveys for this species were negative. Not expected to occur in Project components lacking suitable vegetation and/or clay soils.
Acmispon prostratus	Nuttall's acmispon	None/None/1B.1/ Covered	Coastal dunes, coastal scrub (sandy)/annual herb/Mar–June (July)/ 0–33	X	L	X	X	X	X	L	L	L	L	X	X	X	Low potential to occur along the Morena Pipelines, which run closer to the coast and contains sandy soils. Not expected to occur along other Project components farther from the coast.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline- Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Adolphia californica	California adolphia	None/None/2B.1/ None	Chaparral, coastal scrub, valley and foothill grassland; clay/perennial deciduous shrub/ Dec–May/148–2428	X	L	L	L	L	L	L	L	L	L	L	X	L	Low potential to occur in Project components with suitable vegetation and clay soils. This perennial shrub would likely have been observed during surveys if present. Not expected to occur in Project components lacking suitable vegetation and/or clay soils.
Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1/ Covered, Narrow Endemic	Coastal bluff scrub, coastal scrub/perennial leaf succulent/Sep–May/33–394	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within Project components with suitable coastal scrub habitat. The project site has suitable vegetation and soils, but closest occurrences within San Diego County are only at two localities, Point Loma and Tijuana. Not expected to occur within Project components lacking suitable coastal scrub habitat or outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline-Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Ambrosia chenopodiifolia	San Diego bur-sage	None/None/2B.1/ None	Coastal scrub/perennial shrub/Apr–June/180–509	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with coastal scrub. However, this perennial shrub would have been observed during surveys if present. Not expected to occur in Project components lacking coastal scrub habitat or Miramar Wastewater Treatment Plant Improvements, which is outside of the species' known elevation range.
Ambrosia monogyra	singlewhorl burrobrush	None/None/2B.2/ None	Chaparral, Sonoran desert scrub; sandy/perennial shrub/Aug–Nov/33–1640	X	X	X	X	X	X	L	L	L	L	L	L	L	Low potential to occur in components with suitable sandy chaparral habitat; however, this perennial shrub would likely have been observed if present. Not expected to occur in Project components lacking sandy chaparral.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline- Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1/ Covered, Narrow Endemic	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/66–1362	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and sandy loam or clay soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable vegetation and/or sandy loam or clay soils.
Aphanisma blitoides	aphanisma	None/None/1B.2/ Covered	Coastal bluff scrub, coastal dunes, coastal scrub; sandy or gravelly/annual herb/Mar–June/3–1001	X	L	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur along the Morena Pipelines. Not expected to occur in other Project components farther from the coast.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/1B.1/ Covered	Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1198	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. No maritime chaparral present.
Arctostaphylos otayensis	Otay manzanita	None/None/1B.2/ Covered	Chaparral, cismontane woodland; metavolcanic/perennial evergreen shrub/Jan–Apr/902–5577	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline-Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Artemisia palmeri	San Diego sagewort	None/None/4.2/ None	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic/perennial deciduous shrub/(Feb) May–Sep/49–3002	X	D	L	X	L	L	L	L	L	L	L	L	~~D~~L	Observed along the Morena Pipelines~~, In-Reservoir Alternative Terminus, Tunnel Alternative Terminus, and the LFG Pipeline~~. Low potential to occur within the other components; would have been observed during surveys if present. Not expected to occur within Project components lacking suitable habitat.
Asplenium vespertinum	western spleenwort	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub; rocky/perennial rhizomatous herb/Feb–June/591–3281	X	X	X	X	X	L	L	L	L	L	L	X	X	Low potential to occur in Project components with suitable vegetation within the known elevation range of the species. Focused surveys were negative for this species. Not expected to occur within Project components lacking suitable habitat and/or outside the known elevation range of the species.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline- Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Astragalus deanei	Dean's milk-vetch	None/None/1B.1/ None	Chaparral, cismontane woodland, coastal scrub, riparian forest/perennial herb/Feb–May/246–2280	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within Project components with suitable habitat within the species' known elevation range. The most recent (since 1995) occurrences for this species occur with the Cleveland National Forest or Dehesa. Not expected to occur within Project components lacking suitable habitat or outside of the species' known elevation range.
Astragalus oocarpus	San Diego milk-vetch	None/None/1B.2/ None	Chaparral (openings), cismontane woodland/perennial herb/May–Aug/1001–5000	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/CE/1B.1/ Covered, Narrow Endemic	Coastal bluff scrub (sandy), coastal dunes, coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/3–164	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present and this species generally occurs along the coast.

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Atriplex coulteri	Coulter's saltbush	None/None/1B.2/ None	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/10–1509	X	L	L	L	L	L	L	L	L	L	X	X	L	Low potential to occur in Project components with suitable vegetation within the known elevation range of the species. Focused surveys were negative for this species. Not expected to occur within Project components lacking suitable habitat and/or outside the known elevation range of the species.
Atriplex pacifica	South Coast saltscale	None/None/1B.2/ None	Coastal bluff scrub, coastal dunes, coastal scrub, playas/annual herb/Mar–Oct/0–459	X	L	L	X	L	L	L	L	L	L	X	L	L	Low potential to occur in Project components with suitable vegetation within the known elevation range of the species. Focused surveys were negative for this species. Not expected to occur within Project components lacking suitable habitat and/or outside the known elevation range of the species.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline-Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Atriplex parishii	Parish's brittlescale	None/None/1B.1/ None	Chenopod scrub, playas, vernal pools; alkaline/annual herb/June–Oct/82–6234	X	X	X	X	L	X	X	X	X	X	X	X	L	Low potential to occur within Project components with vernal pools. Not expected to occur in other Project components due to lack of suitable vegetation.
Baccharis vanessae	Encinitas baccharis	FT/CE/1B.1/ Covered	Chaparral (maritime), cismontane woodland; sandstone/perennial deciduous shrub/Aug–Nov/197–2362	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. Perennial shrub would have been observed during surveys if present and all occurrences of this species are north of the project alignment (CDFW 2016).
Berberis nevinii	Nevin's barberry	FE/CE/1B.1/ Covered	Chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly/perennial evergreen shrub/Mar–June/230–2707	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in areas with suitable vegetation and soils. Perennial shrub would have been observed during surveys if present.
Bergerocactus emoryi	golden-spined cereus	None/None/2B.2/ None	Closed-cone coniferous forest, chaparral, coastal scrub; sandy/perennial stem succulent/May–June/10–1296	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in areas with suitable vegetation and soils. Perennial shrub would have been observed during surveys if present.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline- Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1/ Covered	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial bulbiferous herb/Apr–May/164–1526	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
Brodiaea filifolia	thread-leaved brodiaea	FT/CE/1B.1/ Covered	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay/perennial bulbiferous herb/Mar–June/82–3675	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1/ Covered	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay, sometimes serpentinite/perennial bulbiferous herb/May–July/98–5551	X	L	L	L	L	L	L	L	L	L	L	L	D	Observed along the LFG Pipeline. Low potential to occur in most other Project components. Species would have been observed during surveys if present. Not expected to occur in Project components lacking suitable habitat.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline- Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Calamagrostis koelerioides	Fire reedgrass	None/None/ None/Covered	Chaparral, meadows and seeps; slopes, dry hills, ridges/perennial grass/June–Aug/0–7546	X	X	X	X	X	X	L	L	L	L	L	L	L	Low potential to occur in components with suitable chaparral habitat; however, this species was not observed during focused surveys. Not expected to occur in Project components lacking chaparral.
Calandrinia breweri	Brewer's calandrinia	None/None/4.2/ None	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/Mar–June/33–4003	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
California macrophylla	round-leaved filaree	None/None/1B.2/ None	Cismontane woodland, valley and foothill grassland; clay/annual herb/Mar–May/49–3937	X	L	L	L	L	L	L	L	L	L	L	X	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.

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Calochortus dunnii	Dunn's mariposa lily	None/CR/1B.2/ Covered	Closed-cone coniferous forest, chaparral, valley and foothill grassland; gabbroic or metavolcanic, rocky/perennial bulbiferous herb/(Feb) Apr–June/607–6004	X	X	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur along the NCPW Pipeline and Miramar Wastewater Treatment Plant Improvements area; not observed during focused surveys. Not expected to occur in Project components below the species' known elevation range.
Camissoniopsis lewisii	Lewis' evening-primrose	None/None/3/ None	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/Mar–May (June)/0–984	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable habitat. Species would have been observed during surveys if present.
Carex obispoensis	San Luis Obispo sedge	None/None/1B.2/ None	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland; often serpentinite seeps, sometimes gabbro; often on clay soils/perennial rhizomatous herb/Apr–June/33–2690	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. Only four locations known from San Diego County at two localities Sycuan Ecological Reserve and McGinty Mountain Ecological Reserve.

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Castilleja plagiotoma	Mojave paintbrush	None/None/4.3/ None	Great Basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland/perennial herb (hemiparasitic)/Apr–June/984–8202	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Caulanthus heterophyllus	California mustard	None/None/None/ Covered	Coastal scrub, chaparral; dry, open, generally after fire, disturbance/annual herb/Mar–May/0–4593	X	L	L	L	L	L	X	L	L	L	L	L	L	Low potential to occur in Project components with suitable habitat. Species would have been observed during surveys if present.
Caulanthus simulans	Payson's jewelflower	None/None/4.2/ None	Chaparral, coastal scrub; sandy, granitic/annual herb/(Feb) Mar–May (June)/295–7218	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within Project components with suitable habitat; however, focused surveys were negative. Not expected to occur in Project components lacking suitable habitat or outside of the species' known elevation range.

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Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2/ Covered	Closed-cone coniferous forest, chaparral/perennial evergreen shrub/Apr–June/771–2477	X	X	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur in the Miramar Wastewater Treatment Plant Improvements project component. Not expected to occur to occur in other Project components, which are outside of the species' known elevation range.
Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2/ None	Chaparral (metavolcanic or gabbroic)/perennial evergreen shrub/Jan–Apr/1969–3609	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2/ Covered	Chaparral/perennial evergreen shrub/Dec–May/3–1247	X	~~L~~D	X	X	X	X	L	L	L	L	L	D	D	Observed within the buffer around the MBC, Morena Pipelines, and along the LFG Pipeline. Low potential to occur in all other components with chaparral habitat where focused surveys were negative. Not expected to occur in Project components lacking chaparral.

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Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1/ None	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–Nov/0–1575	X	L	L	L	L	L	L	L	L	L	L	X	L	Low potential to occur due to limited suitable vernally mesic habitat and because it was not observed during 2016 rare plant surveys. In addition, all occurrences of southern tarplant are north of the project site (CDFW 2016). Not expected to occur in Project components lacking suitable habitat.
Centromadia pungens ssp. *laevis*	smooth tarplant	None/None/1B.1/ None	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2100	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1/ None	Coastal bluff scrub (sandy), coastal dunes/annual herb/Jan–Aug/0–328	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present. This species generally occurs along the coast.

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Chamaebatia australis	southern mountain misery	None/None/4.2/ None	Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/984–3346	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/CE/1B.2/ Covered	Coastal dunes, marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct/0–98	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal dune or coastal salt marsh vegetation present.
Chorizanthe leptotheca	Peninsular spineflower	None/None/4.2/ None	Chaparral, coastal scrub, lower montane coniferous forest; alluvial fan, granitic/annual herb/May–Aug/984–6234	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/CE/1B.1/ None	Closed-cone coniferous forest, chaparral (maritime), coastal scrub; sandy openings/annual herb/Mar–May/10–410	X	L	X	X	X	X	L	L	L	L	L	L	L	Low potential to occur within Project components with chaparral and coastal sage scrub and sandy soils. However, focused surveys for this species were negative. Not expected to occur within Project components lacking suitable sandy habitat.

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Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2/ None	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; often clay/annual herb/Apr–July/98–5020	X	L	L	L	L	L	L	L	L	L	L	D	D	Observed within the buffer around the Metro Biosolids Center and along the LFG Pipeline. Low potential to occur in all other components that have chaparral, coastal scrub, grassland, or vernal pools with clay soils. Not expected to occur in Project components that lack such suitable habitat.
Cistanthe maritima	seaside cistanthe	None/None/4.2/ None	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy/annual herb/(Feb) Mar–June (Aug)/16–984	X	L	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur along the Morena Pipelines, which as suitable sandy coastal scrub, but focused surveys were negative. Not expected to occur in other Project components that are farther from the coast since this species is known to occur at locales with moist sea breezes (Reiser 2001).

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Clarkia delicata	delicate clarkia	None/None/1B.2/ None	Chaparral, cismontane woodland; often gabbroic/annual herb/Apr–June/771–3281	X	X	X	X	X	X	L	L	D	D	L	X	X	Observed within the buffer of the In-Reservoir Alternative Terminus and Marina Alternative Terminus. Low potential to occur within other Project components with suitable habitat; however, focused surveys for this species were negative. Not expected to occur in remaining Project components below the species' known elevation range.
Clinopodium chandleri	San Miguel savory	None/None/1B.2/ Covered	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic, or metavolcanic/perennial shrub/Mar–July/394–3527	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components that contain suitable habitat within the correct elevation range due to negative focused surveys due to limited suitable habitat and not observed during 2016 rare plant surveys. Not expected to occur in Project components that lack suitable habitat and/or that are outside the known elevation range for this species.

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Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2/ None	Chaparral, cismontane woodland/perennial evergreen shrub/Apr–June/98–2592	X	L	X	X	X	X	L	L	L	L	L	L	D	Observed along the LFG Pipeline. Low potential to occur in most Project components with chaparral or oak woodland because this shrub would have been observed during if present. Not expected to occur in components without suitable chaparral or oak woodland habitat.
Convolvulus simulans	small-flowered morning-glory	None/None/4.2/ None	Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentinite seeps/annual herb/Mar–July/98–2297	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
Cordylanthus rigidus ssp. *brevibracteatus*	short-bracted bird's-beak	None/None/4.3/ None	Chaparral, lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest; openings, granitic/annual herb (hemiparasitic)/July–Aug (Oct)/2001–8497	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Corethrogyne filaginifolia var. *incana*	San Diego sand aster	None/None/1B.1/ None	Coastal bluff scrub, chaparral, coastal scrub/perennial herb/June–Sep/10–377	X	L	L	X	L	L	L	L	X	L	X	L	L	Low potential to occur in Project components with suitable vegetation and soils and within the elevation range of this species. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat and/or outside the known elevation range for this species.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1/ Covered	Coastal bluff scrub, chaparral (maritime, openings), coastal scrub; sandy/perennial herb/May–Sep/49–492	X	L	X	X	L	L	L	L	L	L	L	L	L	Low potential to occur. Coastal sage scrub present in many components, but Del Mar Mesa sand aster occurrences are all north of the proposed project and focused surveys were negative.

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Cryptantha wigginsii	Wiggins' cryptantha	None/None/1B.2/ None	Coastal scrub; often clay/annual herb/Feb–June/66–902	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1/ Covered, Narrow Endemic	Chaparral, coastal scrub/perennial stem succulent/Apr–May/98–492	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable chaparral and/or coastal scrub. Perennial succulent would have been observed during surveys if present.
Deinandra conjugens	Otay tarplant	FT/CE/1B.1/ Covered, Narrow Endemic	Coastal scrub, valley and foothill grassland; clay/annual herb/May–June/82–984	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.

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Deinandra floribunda	Tecate tarplant	None/None/1B.2/ None	Chaparral, coastal scrub/annual herb/Aug–Oct/230–4003	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within Project components with suitable habitat; however, focused surveys were negative. Not expected to occur in Project components lacking suitable habitat or outside of the species' known elevation range.
Deinandra paniculata	paniculate tarplant	None/None/4.2/ None	Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic, sometimes sandy/annual herb/Apr–Nov/82–3084	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
Dichondra occidentalis	western dichondra	None/None/4.2/ Narrow Endemic	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial rhizomatous herb/(Jan) Mar–July/164–1640	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in most Project components due to negative focused surveys. Not expected to occur in Project components lacking suitable habitat.

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Dicranostegia orcuttiana	Orcutt's bird's-beak	None/None/ 2B.1/Covered	Coastal scrub/annual herb (hemiparasitic)/(Mar) Apr–July (Sep)/33–1148	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable coastal scrub. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable coastal scrub.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1/ None	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland; rocky, often clay or serpentinite/perennial herb/Apr–June/16–1476	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur within components with suitable habitat. Species would have been observed during surveys if present. Not expected to occur in Project components with no suitable habitat.
Dudleya brevifolia	short-leaved dudleya	None/CE/1B.1/ Covered, Narrow Endemic	Chaparral (maritime, openings), coastal scrub; Torrey sandstone/perennial herb/Apr–May/98–820	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. No Torrey sandtone soils within the proposed project.
Dudleya variegata	variegated dudleya	None/None/1B.2/ Covered, Narrow Endemic	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/Apr–June/10–1903	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.

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Dudleya viscida	sticky dudleya	None/None/1B.2/ Covered	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/perennial herb/May–June/33–1804	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within components with suitable habitat. Species would have been observed during surveys if present. Not expected to occur in Project components with no suitable habitat.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1/ Covered	Chaparral, coastal scrub; mesic/perennial evergreen shrub/(July) Sep–Nov/98–1969	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within components with suitable habitat. Species would have been observed during surveys if present. Not expected to occur in Project components with no suitable habitat.
Eriogonum evanidum	vanishing wild buckwheat	None/None/1B.1/ None	Chaparral, cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland; sandy or gravelly/annual herb/July–Oct/3609–7300	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/CE/1B.1/ Covered	Coastal scrub, valley and foothill grassland, vernal pools; mesic/annual / perennial herb/Apr–June/66–2034	X	L	L	L	L	L	L	X	X	X	X	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
Erysimum ammophilum	sand-loving wallflower	None/None/1B.2/ Covered	Chaparral (maritime), coastal dunes, coastal scrub; sandy, openings/perennial herb/Feb–June/0–197	X	L	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur along the Morena Pipelines due to suitable sandy chaparral and coastal scrub, but lack of observations during focused surveys. Not expected to occur at the Morena Pump Station due to lack of suitable habitat. Not expected to occur in the remaining Project components because they are above the species' known elevation range.
Euphorbia abramsiana	Abrams' spurge	None/None/2B.2/ None	Mojavean desert scrub, Sonoran desert scrub; sandy/annual herb/Aug–Nov/-16–3002	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable desert scrub vegetation present.

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Euphorbia misera	cliff spurge	None/None/2B.2/ None	Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky/perennial shrub/Dec–Aug (Oct)/33–1640	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Perennial shrub would likely have been observed if present. Not expected to occur in Project components lacking suitable habitat.
Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1/ Covered	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/May–June/10–1476	X	L	L	L	L	L	L	D	L	L	L	L	L	Observed along the San Vicente Pipeline. Low potential to occur in all other components due to lack of observations during focused surveys or not expected to occur due to lack of suitable habitat.
Frankenia palmeri	Palmer's frankenia	None/None/2B.1/ None	Coastal dunes, marshes and swamps (coastal salt), playas/perennial herb/May–July/0–33	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.

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Fraxinus parryi	chaparral ash	None/None/2B.2/ None	Chaparral/perennial shrub/Mar–May/699–2034	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within Project components with suitable chaparral vegetation; however, focused surveys were negative. Not expected to occur in Project components lacking suitable habitat or outside of the species' known elevation range.
Fremontodendron mexicanum	Mexican flannelbush	FE/CR/1B.1/ None	Closed-cone coniferous forest, chaparral, cismontane woodland; gabbroic, metavolcanic, or serpentinite/perennial evergreen shrub/Mar–June/33–2349	X	L	X	X	X	X	L	L	L	L	L	L	L	Low potential to occur within components that have chaparral vegetation. Not expected to occur in remaining Project components. No suitable vegetation present.
Galium proliferum	desert bedstraw	None/None/2B.2/ None	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland; rocky, carbonate/annual herb/Mar–June/3904–5348	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

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Geothallus tuberosus	Campbell's liverwort	None/None/1B.1/ None	Coastal scrub (mesic), vernal pools; soil/ephemeral liverwort/N.A./33–1969	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable coastal scrub or vernal pools. Focused surveys were negative for this species. Not expected to occur in Project components lacking suitable habitat.
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	None/None/3.1/ None	Chaparral (mesic, disturbed areas)/annual herb/Apr–June/1476–2297	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Grindelia hallii	San Diego gumplant	None/None/1B.2/ None	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/perennial herb/May–Oct/607–5725	X	X	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur along the NCPW Pipeline and within the Miramar Wastewater Treatment Plant Improvements where there is suitable chaparral or grassland habitat; however, focused surveys for this species were negative. Not expected to occur in the remaining Project components because they are below the species' known elevation range.

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Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2/ None	Chaparral, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–May/66–3133	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.
Hazardia orcuttii	Orcutt's hazardia	FC/CT/1B.1/ None	Chaparral (maritime), coastal scrub; often clay/perennial evergreen shrub/Aug–Oct/262–279	X	L	X	X	X	X	L	L	L	L	L	X	L	Low potential to occur along the Morena Pipelines and LFG Pipeline due to suitable sandy chaparral and coastal scrub, but lack of observations during focused surveys. Not expected to occur in the remaining Project components because they are outside the species' known elevation range.
Hesperocyparis forbesii	Tecate cypress	None/None/1B.1/ Covered	Closed-cone coniferous forest, chaparral; clay, gabbroic or metavolcanic/ perennial evergreen tree/N.A./262–4921	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. Perennial tree would have been observed during surveys if present.

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Heterotheca sessiliflora ssp. *sessiliflora*	beach goldenaster	None/None/1B.1/ None	Chaparral (coastal), coastal dunes, coastal scrub/perennial herb/Mar–Dec/0–4019	X	L	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur along the Morena Pipelines due to lack of observations during focused surveys. Not expected to occur within Project components farther from the coast.
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/annual herb/May–Nov/197–3609	X	L	D	L	D	L	L	L	L	L	L	D	D	Observed within the buffer around the NCWRP, North City Pure Water Facility, MBC, and the LFG Pipeline. Low potential to occur in other Project components due to negative focused surveys. Not expected to occur in Project components that lack suitable habitat.
Hordeum intercedens	vernal barley	None/None/3.2/ None	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools/annual herb/Mar–June/16–3281	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur in Project components lacking suitable habitat.

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Horkelia truncata	Ramona horkelia	None/None/1B.3/ None	Chaparral, cismontane woodland; clay, gabbroic/perennial herb/May–June/1312–4265	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2/ None	Chaparral, coastal scrub (sandy, often in disturbed areas)/perennial shrub/Apr–Nov/33–443	X	L	L	X	L	L	L	L	L	L	L	D	L	Observed within the buffer around the MBC. Low potential to occur in all other components. Perennial shrub would likely have been observed during surveys if present. Not expected to occur in Project components lacking suitable habitat.
Iva hayesiana	San Diego marsh-elder	None/None/2B.2/ None	Marshes and swamps, playas/perennial herb/Apr–Oct/33–1640	X	~~L~~D	X	X	X	X	L	L	L	L	L	X	L	Observed within the buffer around the Morena Pipelines. Low potential to occur within Project components with suitable freshwater marsh habitat where this perennial herb would likely have been observed during surveys if present. Although a portion of the NCPW Pipeline contains areas of freshwater marsh that were not surveyed, the area is

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																	surrounded by development. Not expected to occur with the other components.
Juglans californica	Southern California black walnut	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub; alluvial/perennial deciduous tree/Mar–Aug/164–2953	X	L	X	X	X	X	D	L	L	L	L	X	X	Observed within the San Vicente Pipeline 100-foot buffer, 6 individuals observed adjacent to West Hills Pkwy. Not expected to occur in other Project components except the Morena Pipelines where comprehensive surveys were done. Perennial tree would have been observed during surveys if present.
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None/4.2/ None	Coastal dunes (mesic), meadows and seeps (alkaline seeps), marshes and swamps (coastal salt)/perennial rhizomatous herb/(Mar) May–June/10–2953	~~X~~D	X	X	X	X	X	X	X	X	X	X	X	X	Observed within the San Diego River floodplain south of the Morena Pump Station. Not expected to occur. This conspicuous perennial species would have been observed during surveys if present.

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Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1/ None	Marshes and swamps (coastal salt), playas, vernal pools/annual herb/Feb–June/3–4003	X	X	X	X	L	X	L	L	L	L	L	X	L	Low potential to occur within vernal pools on site; focused surveys were negative. Not expected to occur in Project components without vernal pools.
Lathyrus splendens	pride-of-California	None/None/4.3/ None	Chaparral/perennial herb/Mar–June/656–5003	X	X	X	X	X	X	L	L	L	L	L	L	L	Low potential to occur within Project components with suitable chaparral vegetation; however, focused surveys were negative. Not expected to occur in Project components lacking suitable habitat or outside of the species' known elevation range.
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2/ Covered	Closed-cone coniferous forest, chaparral, cismontane woodland/perennial shrub/Apr–July/1706–4495	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Lepechinia ganderi	Gander's pitcher sage	None/None/1B.3/ Covered	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metavolcanic/perennial shrub/June–July/1001–3297	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3/ None	Chaparral, coastal scrub/annual herb/Jan–July/3–2904	X	L	L	X	L	L	D	D	L	D	L	D	D	Observed within the buffer around the San Vicente Pipeline, Marina Alternative Terminus, Tunnel Alternative Terminus, MBC, and LFG Pipeline. Low potential to occur in other Project components due to lack of observations during focused surveys. Not expected to occur in Project components lacking suitable habitat.
Leptosiphon grandiflorus	large-flowered leptosiphon	None/None/4.2/ None	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; usually sandy/annual herb/Apr–Aug/16–4003	X	L	X	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils; focused surveys were negative. Not expected to occur in Project components lacking suitable vegetation and sandy soils.

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Leptosyne maritima	sea dahlia	None/None/2B.2/ None	Coastal bluff scrub, coastal scrub/perennial herb/Mar–May/16–492	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. Species prefers sandstone cliffs near the ocean, which do not occur within the project site and focused surveys were negative for this species.
Lycium californicum	California box-thorn	None/None/4.2/ None	Coastal bluff scrub, coastal scrub/perennial shrub/(Dec) Mar–Aug/16–492	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur. Perennial shrub would have been observed during surveys if present. Not expected to occur within Project components lacking suitable habitat.
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2/ None	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/Mar–May/49–3510	X	L	L	L	L	L	L	L	L	L	L	L	~~L~~D	Observed along the LFG Pipeline. Low potential to occur in Project components with suitable vegetation and soils; focused surveys were negative. Not expected to occur in Project components lacking suitable vegetation and sandy soils.
Mimulus aurantiacus var. *aridus*	low bush monkeyflower	None/None/4.3/ None	Chaparral (rocky), Sonoran desert scrub/perennial evergreen shrub/Apr–July/2461–3937	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Mimulus clevelandii	Cleveland's bush monkeyflower	None/None/4.2/ Covered	Chaparral, cismontane woodland, lower montane coniferous forest; gabbroic, often in disturbed areas, openings, rocky/perennial rhizomatous herb/Apr–July/1476–6562	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Mimulus diffusus	Palomar monkeyflower	None/None/4.3/ None	Chaparral, lower montane coniferous forest; sandy or gravelly/annual herb/Apr–June/4003–6004	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Mobergia calculiformis	light gray lichen	None/None/3/ None	Coastal scrub (?); on rocks/crustose lichen (saxicolous)/N.A./33–33	X	L	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur along the Morena Pipelines. There is only one historical occurrence within the City of San Diego immediately south of Balboa Park (Consortium of North American Lichen Herbaria). The project site is approximately 4 miles north of Balboa Park. Not expected to occur in other Project components due to lack of suitable coastal scrub habitat and/or elevations above the species' known elevation range.

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Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2/ Covered	Chaparral, cismontane woodland/perennial rhizomatous herb/June–Aug/984–5167	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Monardella viminea	willowy monardella	FE/CE/1B.1/ Covered	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; alluvial ephemeral washes/perennial herb/June–Aug/164–738	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. No suitable alluvial ephemeral washes present.
Mucronea californica	California spineflower	None/None/4.2/ None	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy/annual herb/Mar–July (Aug)/0–4593	X	L	X	L	X	X	L	L	L	L	L	X	X	Low potential to occur along the Morena Pipelines due to suitable vegetation and sandy soils. However, this species was not observed during focused surveys. Not expected to occur in Project components lacking suitable habitat, including sandy soils.
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1/ None	Valley and foothill grassland, vernal pools (alkaline)/annual herb/Mar–June/66–2100	X	X	L	L	L	L	L	X	X	X	X	L	L	Low potential to occur in the project site due to limited suitable habitat and not observed during 2016 rare plant surveys. Historical occurrences are known from three localities, San Onofre, Camp Pendleton and Otay Mesa. Not expected to occur within Project

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																	components lacking suitable vegetation.
Nama stenocarpa	mud nama	None/None/2B.2/ None	Marshes and swamps (lake margins, riverbanks)/annual / perennial herb/Jan–July/16–1640	X	L	X	X	X	X	L	L	L	L	L	X	L	Low potential to occur in Project components with marshes and/or riverbanks with suitable habitat. Not expected to occur in Project components lacking suitable habitat.
Navarretia fossalis	spreading navarretia	FT/None/1B.1/ Covered, Narrow Endemic	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/annual herb/Apr–June/98–2149	X	L	X	X	L	L	L	X	X	X	L	X	L	Low potential to occur in Project components with suitable vegetation and clay soils. Closest occurrence is within the MCAS Miramar, east of the Miramar Landfill and north SR-52. Not expected to occur within Project components lacking suitable habitat.
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.1/ None	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools; mesic/annual herb/Apr–July/10–3970	X	L	L	L	L	L	L	X	X	X	L	L	L	Low potential to occur. Species would have been observed during surveys if present. Historical occurrences are known from Kearny Mesa off of Kearny Villa Road but not with

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																	the project site. Not expected to occur within Project components lacking suitable vegetation.
Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2/ None	Coastal dunes/annual herb/Apr–Sep/0–328	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal dune habitat present.
Nemacaulis denudata var. *gracilis*	slender cottonheads	None/None/2B.2/ None	Coastal dunes, desert dunes, Sonoran desert scrub/annual herb/(Mar) Apr–May/-164–1312	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
Nolina interrata	Dehesa nolina	None/CE/1B.1/ Covered	Chaparral (gabbroic, metavolcanic, or serpentinite)/perennial herb/June–July/607–2805	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. Limited suitable gabbroic, metavolcanic, or serpentinite chaparral present and this perennial herb would have been observed during surveys if present.
Ophioglossum californicum	California adder's-tongue	None/None/4.2/ None	Chaparral, valley and foothill grassland, vernal pools (margins); mesic/perennial rhizomatous herb/(Dec) Jan–June/197–1722	X	X	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within Project components lacking suitable habitat.

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Orcuttia californica	California Orcutt grass	FE/CE/1B.1/ Covered, Narrow Endemic	Vernal pools/annual herb/Apr–Aug/49–2165	X	X	X	X	L	X	L	L	L	L	L	X	L	Low potential to occur at the North City Pure Water Facility and along the LFG Pipeline where vernal pools are present, but the species was not observed during focused surveys. Not expected to occur within Project components lacking suitable vernal pool habitat.
Orobanche parishii ssp. *brachyloba*	short-lobed broomrape	None/None/4.2/ None	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/perennial herb (parasitic)/Apr–Oct/10–1001	X	L	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur along the Morena Pipelines due to suitable vegetation and sandy soils. However, this species was not observed during focused surveys. Not expected to occur in Project components lacking suitable habitat, including sandy soils.
Packera ganderi	Gander's ragwort	None/CR/1B.2/ Covered	Chaparral (burns, gabbroic outcrops)/perennial herb/Apr–June/1312–3937	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley and foothill grassland/annual herb/Mar–July/262–6070	X	L	L	L	L	L	L	L	L	L	L	L	D	Observed along the LFG Pipeline. Low potential to occur in all other components with negative survey results. Not expected to occur in Project components lacking suitable habitat.
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	None/None/3.2/ None	Chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt); sandy, sometimes rocky/perennial herb/Mar–Aug/16–984	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within Project components lacking suitable habitat.
Phacelia stellaris	Brand's star phacelia	FC/None/1B.1/ None	Coastal dunes, coastal scrub/annual herb/Mar–June/3–1312	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within Project components lacking suitable habitat.

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Pickeringia montana var. *tomentosa*	woolly chaparral-pea	None/None/4.3/ None	Chaparral; gabbroic, granitic, clay/evergreen shrub/May–Aug/0–5577	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within Project components with suitable chaparral vegetation; however, focused surveys were negative. Not expected to occur in Project components lacking suitable habitat.
Pinus torreyana ssp. *torreyana*	Torrey pine	None/None/1B.2/ Covered	Closed-cone coniferous forest, chaparral; sandstone/perennial evergreen tree/N.A./246–525	X	X	X	X	X	X	L	L	L	L	L	X	X	~~Not expected to occur. Perennial tree would have been observed during surveys if present.~~ Torrey pines were observed within the San Vicente Reservoir study area; however, trees were planted and not native occurrences.
Piperia cooperi	chaparral rein orchid	None/None/4.2/ None	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/Mar–June/49–5200	X	L	L	L	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation. Focused surveys for this species were negative. Not expected to occur within Project components lacking suitable habitat.

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Pogogyne abramsii	San Diego mesa mint	FE/CE/1B.1/ Covered, Narrow Endemic	Vernal pools/annual herb/Mar–July/295–656	X	X	X	X	L	X	L	L	L	L	L	X	L	Low potential to occur at the North City Pure Water Facility and along the LFG Pipeline where vernal pools are present, but the species was not observed during focused surveys. Not expected to occur within Project components lacking suitable vernal pool habitat.
Pogogyne nudiuscula	Otay Mesa mint	FE/CE/1B.1/ Covered, Narrow Endemic	Vernal pools/annual herb/May–July/295–820	X	X	X	X	L	X	L	X	X	X	X	X	L	Low potential to occur at the North City Pure Water Facility and along the LFG Pipeline where vernal pools are present, but the species was not observed during focused surveys. Not expected to occur within Project components lacking suitable vernal pool habitat.

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Polygala cornuta var. *fishiae*	Fish's milkwort	None/None/4.3/ None	Chaparral, cismontane woodland, riparian woodland/perennial deciduous shrub/May–Aug/328–3281	X	L	X	X	X	X	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable habitat, but this perennial deciduous shrub would likely have been observed during surveys if present. Not expected to occur in Project components lacking suitable habitat or outside the species' known elevation range.'
Pseudognaphalium leucocephalum	white rabbit-tobacco	None/None/2B.2/ None	Chaparral, cismontane woodland, coastal scrub, riparian woodland; sandy, gravelly/perennial herb/(July) Aug–Nov (Dec)/0–6890	X	L	L	X	L	L	D	L	D	D	L	L	L	Observed within the 100-foot buffer around the San Vicente Pipeline, 1 individual was observed south of San Vicente Reservoir (within buffer of San Vicente Pipeline-In-Reservoir Alternative Terminus), and also within Marina Alternative Terminus buffer. Low potential to occur in Project components with suitable vegetation. Focused surveys for this species were negative. Not expected to

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																	occur within Project components lacking suitable habitat.
Quercus cedrosensis	Cedros Island oak	None/None/2B.2/ None	Closed-cone coniferous forest, chaparral, coastal scrub/perennial evergreen tree/Apr–May/837–3150	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1/ None	Closed-cone coniferous forest, chaparral, coastal scrub; sandy, clay loam/perennial evergreen shrub/Feb–Apr (Aug)/49–1312	X	L	~~L~~D	X	L	L	L	L	L	L	L	D	~~L~~D	Observed within the buffer around the MBC, NCWRP, and the LFG Pipeline. Low potential to occur in all other components because this evergreen shrub would likely have been observed during surveys if present. Not expected to occur within Project components lacking suitable habitat.
Quercus engelmannii	Engelmann oak	None/None/4.2/ None	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/perennial deciduous tree/Mar–June/164–4265	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. Perennial tree would have been observed during surveys if present.
Ribes canthariforme	Moreno currant	None/None/1B.3/ None	Chaparral, riparian scrub/perennial deciduous shrub/Feb–Apr/1115–3937	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

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Romneya coulteri	Coulter's matilija poppy	None/None/4.2/ None	Chaparral, coastal scrub; often in burns/perennial rhizomatous herb/Mar–July/66–3937	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur within Project components with suitable habitat; however, focused surveys were negative. Not expected to occur in Project components lacking suitable habitat.
Rosa minutifolia	small-leaved rose	None/CE/2B.1/ Covered	Chaparral, coastal scrub/perennial deciduous shrub/Jan–June/492–525	X	X	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur in components at higher elevation with suitable chaparral or coastal scrub habitat. However, perennial shrub would likely have been observed during surveys if present. Not expected to occur in Project components below the species' known elevation range.

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Salvia munzii	Munz's sage	None/None/2B.2/ None	Chaparral, coastal scrub/perennial evergreen shrub/Feb–Apr/377–3494	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in most Project components because this shrub would likely have been observed during surveys if present. Not expected to occur within Project components lacking suitable habitat.
Selaginella cinerascens	ashy spike-moss	None/None/4.1/ Covered	Chaparral, coastal scrub/perennial rhizomatous herb/N.A./66–2100	X	L	D	X	~~L~~D	L	D	L	L	D	L	D	D	Observed within the buffer around the NCPWF, San Vicente Pipeline, Marina Alternative Terminus, MBC and NCWRP, and the LFG Pipeline. Low potential to occur in all other components due to lack of observations during focused surveys. Not expected to occur within Project components lacking suitable vegetation.

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Senecio aphanactis	chaparral ragwort	None/None/2B.2/ None	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/Jan–Apr/49–2625	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils; focused surveys were negative. Not expected to occur in Project components lacking suitable vegetation and sandy soils.
Sibaropsis hammittii	Hammitt's clay-cress	None/None/1B.2/ None	Chaparral (openings), valley and foothill grassland; clay/annual herb/Mar–Apr/2362–3494	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Solanum xanti	Purple nightshade	None/None/ None/Covered	Coastal scrub, chaparral, cismontane woodland, lower montane coniferous forest/perennial herb / perennial shrub/June–July/0–8858	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur in Project components with suitable vegetation and soils; focused surveys were negative. Not expected to occur in Project components lacking suitable vegetation and sandy soils.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline- Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Sphaerocarpos drewei	bottle liverwort	None/None/1B.1/ None	Chaparral, coastal scrub; openings, soil/ephemeral liverwort/N.A./295–1969	X	L	L	X	L	L	X	X	X	X	X	L	L	Low potential to occur in Project components with suitable vegetation and soils within the elevation range of the species; focused surveys were negative. Not expected to occur in Project components lacking suitable vegetation and sandy soils.
Stemodia durantifolia	purple stemodia	None/None/2B.1/ None	Sonoran desert scrub (often mesic, sandy)/perennial herb/Jan–Dec/591–984	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable desert scrub habitat present.
Stipa diegoensis	San Diego County needle grass	None/None/4.2/ None	Chaparral, coastal scrub; rocky, often mesic/perennial herb/Feb–June/33–2625	X	L	L	X	L	L	L	L	L	L	L	L	L	Low potential to occur. Species would have been observed during surveys if present. Not expected to occur in Project components lacking suitable vegetation.
Streptanthus bernardinus	Laguna Mountains jewelflower	None/None/4.3/ None	Chaparral, lower montane coniferous forest/perennial herb/May–Aug/2198–8202	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline-Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Stylocline citroleum	oil neststraw	None/None/1B.1/ None	Chenopod scrub, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–Apr/164–1312	X	L	L	L	L	L	X	X	X	X	X	L	L	Low potential to occur. Species would have been observed during surveys if present. Not expected to occur in Project components lacking suitable vegetation.
Suaeda esteroa	estuary seablite	None/None/1B.2/ None	Marshes and swamps (coastal salt)/perennial herb/May–Oct (Jan)/0–16	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal salt marsh present.
Suaeda taxifolia	woolly seablite	None/None/4.2/ None	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/perennial evergreen shrub/Jan–Dec/0–164	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable coastal habitat present.
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2/ Covered	Chaparral, coastal scrub/perennial deciduous shrub/Apr–May/541–3281	X	X	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur in components at higher elevation with suitable chaparral or coastal scrub habitat. However, perennial shrub would likely have been observed during surveys if present. Not expected to occur in Project components below the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline-Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Texosporium sancti-jacobi	woven-spored lichen	None/None/3/ None	Chaparral (openings); on soil, small mammal pellets, dead twigs, and on Selaginella spp./crustose lichen (terricolous)/N.A./951–2165	X	X	X	X	X	X	L	L	L	L	L	X	X	Not expected to occur. The site is outside of the species' known elevation range.
Triquetrella californica	coastal triquetrella	None/None/1B.2/ None	Coastal bluff scrub, coastal scrub; soil/moss/N.A./33–328	X	L	L	X	L	L	L	L	L	L	L	X	L	Low potential to occur along the Morena Pipelines. Not expected to occur in other Project components farther from the coast. Known in California from fewer than ten small coastal occurrences.
Viguiera laciniata	San Diego County viguiera	None/None/4.2/ None	Chaparral, coastal scrub/perennial shrub/Feb–June (Aug)/197–2461	X	L	D	X	L	L	D	L	D	D	D	L	D	Observed within the buffer around the San Vicente Pipeline, In-Reservoir Alternative Terminus, Marina Alternative Terminus, MTBS, and NCWRP, and the LFG Pipeline. Low potential to occur in all other components that have suitable habitat, but where focused surveys were negative. Not expected to occur within Project components lacking suitable habitat.

Scientific Name	Common Name	Status (Federal/State/ CRPR/MSCP)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Morena Pump Station	Morena Wastewater Forcemain and Brine/ Centrate Lines (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline –In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline- Marina Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Xanthisma junceum	rush-like bristleweed	None/None/4.3/ None	Chaparral, coastal scrub/perennial herb/June–Jan/787–3281	X	X	X	X	X	X	L	L	L	L	L	X	X	Low potential to occur within the Miramar Wastewater Treatment Plant Improvements; however, focused surveys for this species were negative. Not expected to occur in other Project components because they are below the species' known elevation range.

Notes:
X = not expected (no suitable habitat and/or outside elevation range)
D = detected within the component or 100-foot buffer
L = low potential (suitable habitat but surveys were negative)
Status Legend:
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing
DL: Delisted
CE: State listed as endangered
CT: State listed as threatened
CR: State Rare
CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CRPR 3: Plants About Which More Information is Needed - A Review List
CRPR 4: Plants of Limited Distribution - A Watch List
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

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APPENDIX N

Wildlife Species Potentially Occurring within Miramar Reservoir

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
Amphibians															
California red-legged frog	*Rana draytonii*	FT/SSC/None/ Covered	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur throughout due to being outside of accepted geographic range of species.
western spadefoot	*Spea hammondii*	None/SSC/None/ None	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	X	M	L	X	M	M	L	L	H	X	X	High potential to occur within the 500-foot buffer of the LFG Pipeline due to the presence of vernal pools. Moderate potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, and North City Pump Station due to the presence of vernal pools. Low potential to occur within the 500-foot buffer of the NCWRP, North City Pipeline, and MBC. Not expected to occur in the areas that lack suitable habitat.
arroyo toad	*Anaxyrus californicus*	FE/SSC/None/ Covered	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur throughout due to populations only occurring upstream of the reservoirs in San Diego.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
Reptiles															
western pond turtle	*Actinemys marmorata*	None/SSC/None/ Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	X	~~M~~D	X	X	X	X	~~H~~D	X	X	X	X	Observed within 500-foot buffer of Morena Pipelines south of State Route-52 (SR-52) and east of Genesee Ave in ~~open water~~southern riparian forest. Observed within 500-foot buffer of the North City Pipeline in Evan's Pond south of Scripps Lake Drive ~~and north, northeast, and east banks of the Miramar Reservoir in open water habitat~~. Not expected to occur in areas that lack suitable habitat or the impact footprint.
coast patch-nosed snake	*Salvadora hexalepis virgultea*	None/SSC/None/ None	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	X	L	X	X	X	X	L	X	L	X	X	Low potential to occur in the 500-foot buffer of the Morena Pipelines, North City Pipeline, and LFG Pipeline due to limited habitat. Not expected to occur in areas that lack suitable habitat or in the impact footprint.
orangethroat whiptail	*Aspidoscelis hyperythra*	None/WL/None/ Covered	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	L	M	L	X	M	M	M	M	H	L	X	High potential to occur within 500-foot buffer of the LFG Pipeline. Moderate potential to occur within the 500-foot buffer of Morena Pipelines, NCPWF, North City Pump Station, North City Pipeline, and MBC. Low potential to occur in the 500-foot buffer of the Morena Pump Station, NCWRP, and Miramar WTP due to limited habitat. Not expected to occur in areas that lack suitable habitat.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
Coronado Island skink	*Plestiodon skiltonianus interparietalis*	None/WL/None/ None	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	X	L	X	X	X	X	L	L	L	L	X	Low potential to occur in the 500-foot buffer of the Morena Pipelines, LFG Pipeline, and Miramar WTP due to limited habitat. Not expected to occur in areas that lack suitable habitat or in the impact footprint.
rosy boa	*Lichanura trivirgata*	None/None/ None/None	Desert and chaparral habitats with rocky soils in coastal canyons and hillsides, desert canyons, washes, and mountains	X	L	X	X	L	X	X	X	M	X	X	Moderate potential to occur within 500-foot buffer of the LFG Pipeline. Low potential to occur within the 500-foot buffer of the Morena Pipelines, and NCPWF. Not expected to occur ~~in areas that lack suitable habitat~~within the remaining components, which are outside the species' known geographic range. ~~The site is outside of the species' known geographic range.~~
green turtle	*Chelonia mydas*	FT/None/None/ None	Shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in 500-foot survey buffer or impact footprints. No suitable habitat present.
San Diego ringneck snake	*Diadophis punctatus similis*	None/None/ None/None	Moist habitats including wet meadows, rocky hillsides, gardens, farmland grassland, chaparral, mixed-conifer forest, and woodland habitats	X	M	X	X	L	X	L	L	L	X	X	Moderate potential to occur in the 500-foot buffer of the Morena Pipelines. Low potential to occur in the 500-foot buffer of the NCWRP, North City Pipeline, and LFG Pipeline due to limited habitat. Not expected to occur in areas that lack suitable habitat.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
silvery legless lizard	*Anniella pulchra pulchra*	None/SSC/None/ None	Stabilized dunes, beaches, dry washes, chaparral, scrubs, and pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose, loamy soils	L	M	L	X	L	L	L	L	L	L	X	Moderate potential to occur in the 500-foot buffer of the Morena Pipelines. Low potential to occur in the 500-foot buffer of the Morena Pump Station, NCPWF, North City Pump Station, NCWRP, North City Pipeline, MBC, LFG Pipeline, and Miramar WTP due to limited habitat. Not expected to occur in areas that lack suitable habitat.
Blainville's horned lizard	*Phrynosoma blainvillii*	None/SSC/None/ Covered	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	X	M	X	X	L	L	L	L	M	L	X	Moderate potential to occur in the 500-foot buffer of the Morena Pipelines and LFG Pipeline. Low potential to occur within the 500-foot buffer of the NCPWF, North City Pipeline, MBC, and Miramar WTP due to limited habitat. Not expected to occur in areas that lack suitable habitat.
red diamondback rattlesnake	*Crotalus ruber*	None/SSC/None/ None	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	X	M	L	X	M	X	M	L	M	L	X	Moderate potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, North City Pipeline, and LFG Pipeline. Low potential to occur within the 500-foot buffer of the NCWRP, MBC, and Miramar WTP due to limited habitat. Not expected to occur in areas that lack suitable habitat.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
San Diegan tiger whiptail	*Aspidoscelis tigris stejnegeri*	None/SSC/None/ None	Open areas in semiarid grasslands, scrublands, and woodlands	L	H	M	X	H	M	M	M	H	L	X	High potential to occur within 500-foot buffer of the Morena Pipelines, NCPWF, and LFG Pipeline. Moderate potential to occur within the 500-foot buffer of the NCWRP, North City Pipeline, North City Pipeline, and MBC. Low potential to occur within the 500-foot buffer of the Morena Pump Station and Miramar WTP due to limited habitat. Not expected to occur in areas that lack suitable habitat..
two-striped gartersnake	*Thamnophis hammondii*	None/SSC/None/ None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	X	M	X	X	X	X	M	X	X	L	X	Moderate potential to occur near termination point within the 500-foot buffer of the North City Pipeline at Miramar Reservoir, and Morena Pipelines. Low potential to occur within the 500-foot buffer of the Miramar WTP. Not expected to occur in areas that lack suitable habitat.
Birds															
burrowing owl	*Athene cunicularia* (burrow sites & some wintering sites)	BCC/SSC/ None/Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	X	L	L	X	L	X	L	L	L	X	X	Low potential to occur in the 500-foot buffer of the Morena Pipelines, NCWRP, NCPWF, North City Pipeline, MBC, and LFG Pipeline due to limited habitat. No BUOW or sign observed during 2016 focused surveys.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
California black rail	*Laterallus jamaicensis coturniculus*	BCC/ST, FP/None/ None	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in the 500-foot buffer or impact footprints.
ferruginous hawk	*Buteo regalis* (wintering)	BCC/WL/ None/Covered	Winters and forages in open, dry country, grasslands, open fields, agriculture	X	X	X	X	X	X	X	X	X	X	X	Not expected to winter within 500-foot buffer throughout study area.
grasshopper sparrow	*Ammodramus savannarum* (nesting)	None/SSC/None/ None	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	X	X	X	X	L	X	L	L	M	X	X	Moderate potential to occur within 500-foot buffer of the LFG Pipeline. Low potential to nest within the 500-foot buffer of the NCPWF, North City Pipeline, and MBC. Species may use surrounding suitable habitat to forage. Not expected to nest in areas that lack suitable habitat or impact footprints.
northern harrier	*Circus cyaneus* (nesting)	None/SSC/None/ Covered	Nests in open wetlands including marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes, but also in drier habitats such as grassland and grain fields; forages in variety of habitats, including grassland, scrubs, rangelands, emergent wetlands, and other open habitats	L	L	X	X	L	X	L	L	L	X	X	Low potential to nest within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, NCPWF, North City Pipeline, MBC, and LFG Pipeline. Not expected to nest in areas that lack suitable habitat or impact footprints.
Swainson's hawk	*Buteo swainsoni* (nesting)	BCC/ST/ None/Covered	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agriculturals areas such as wheat and alfalfa fields and pasture	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest within 500-foot buffer of the study area.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
tricolored blackbird	*Agelaius tricolor* (nesting colony)	BCC/SSC/ None/Covered	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in 500-foot survey buffer or impact footprints due to lack of suitable habitat.
yellow warbler	*Setophaga petechia* (nesting)	BCC/SSC/ None/None	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	M	~~H~~D	X	X	X	X	L	X	H	X	X	Observed within 500-foot buffer of Morena Pipelines, outside the impact footprint. High potential to occur within the 500-foot buffer of the LFG Pipeline, but outside the impact footprint. Moderate potential to nest or forage within the 500-foot buffer of the Morena Pump Station adjacent to the San Diego River. Low potential to nest or forage within the 500-foot buffer of the North City Pipeline due to limited suitable habitat. Not expected to nest or forage in areas that lack suitable habitat or impact footprints.
American peregrine falcon	*Falco peregrinus anatum* (nesting)	FDL, BCC/SDL, FP/None/ Covered	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	X	L	X	X	X	X	X	X	X	X	X	Low potential to nest within the 500-foot buffer of the Morena Pipelines. Not expected to nest or forage in areas that lack suitable habitat or impact footprints.
bald eagle	*Haliaeetus leucocephalus* (nesting & wintering)	FDL, BCC/SE, FP/None/ Covered	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest or winter in the 500-foot buffer or component impact footprints. No suitable habitat present.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
Cooper's hawk	*Accipiter cooperii* (nesting)	None/WL/ None/Covered	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	L	~~H~~D	X	X	X	X	M	X	M	X	L	Observed within the 500-foot buffer of Morena Pipelines, outside the impact footprint. Moderate potential to nest or forage within the 500-foot buffer of North City Pipeline. ~~Moderate potential to occur within the 500-foot buffer of the~~and the LFG Pipeline. Low potential to nest within the 500-foot buffer of the Morena Pump Station and Dechlorination Facility. Not expected to nest or forage in areas that lack suitable habitat or impact footprints.
coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis* (San Diego & Orange Counties only)	BCC/SSC/ None/Covered	Southern cactus scrub patches	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in the 500-foot buffer or component impact footprints.
coastal California gnatcatcher	*Polioptila californica californica*	FT/SSC/None/ Covered	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	X	~~H~~M	~~H~~D	L	M	M	M	~~H~~D	~~H~~D	L	X	Observed within the 500-foot buffer of ~~Morena Pipelines,~~ NCWRP, MBC, and LFG Pipeline. ~~High~~ Moderate potential to occur within the 500-foot buffer of Morena Pipelines, NCPWF, North City Pump Station, and North City Pipeline. Low potential to occur within the 500-foot buffer of the NCPWF Influent Pump Station and Miramar WTP. Not likely to occur in areas lacking suitable habitat.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
least Bell's vireo	*Vireo bellii pusillus* (nesting)	FE/SE/None/ Covered	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	M	M	X	X	X	X	L	M	M	X	X	Moderate potential to nest or forage in suitable habitat within the 500-foot buffer of the Morena Pipelines and Morena Pump Station adjacent to the San Diego River and within the 500-foot buffer of the MBC in San Clemente Canyon and LFG Pipeline within Rose Creek. Low potential to nest within the 500-foot buffer of North City Pipeline. Not expected to nest or forage within the impact footprint due to lack of suitable riparian habitat.
southwestern willow flycatcher	*Empidonax traillii extimus* (nesting)	FE/SE/None/ Covered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	M	M	X	X	X	X	L	M	M	X	X	Moderate potential to nest or forage in suitable habitat within the 500-foot buffer of the Morena Pipelines and the Morena Pump Station adjacent to the San Diego River and within the 500-foot buffer of the MBC in San Clemente Canyon and LFG Pipeline within Rose Creek. Low potential to nest or forage in suitable habitat within the 500-foot buffer of the North City Pipeline. Not expected to nest or forage within the impact footprint due to lack of suitable riparian habitat.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
white-tailed kite	*Elanus leucurus* (nesting)	None/FP/None/ None	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	L	M	L	X	~~H~~D	X	L	M	M	X	X	Observed within the 500-foot buffer of the North City Pure Water Facility. Moderate potential to nest within 500-foot buffer of the Morena Pipelines, MBC, and LFG Pipeline. Low potential to nest within the 500-foot buffer of the Morena Pump Station, NCWRP, NCPWF, and North City Pipeline. Not expected to nest or forage in areas that lack suitable habitat or impact footprint.
yellow-breasted chat	*Icteria virens* (nesting)	None/SSC/None/ None	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	M	M	X	X	X	X	L	M	H	X	X	High potential to occur within the 500-foot buffer of the LFG Pipeline. Moderate potential to nest within 500-foot buffer of the Morena Pipelines, MBC, and Morena Pump Station adjacent to the San Diego River. Low potential to nest within the 500-foot buffer of the North City Pipeline. Not expected to nest or forage in areas that lack suitable habitat.
golden eagle	*Aquila chrysaetos* (nesting & wintering)	BCC/FP, WL/None/ Covered	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	X	X	X	X	X	X	L	X	L	X	X	Low potential to nest and winter within the 500-foot buffer of the North City Pipeline and LFG Pipeline. Not expected to areas lacking suitable habitat or the impact footprints.
prairie falcon	*Falco mexicanus* (nesting)	BCC/WL/None/ None	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest or forage in the 500-foot survey buffer or impact footprint. No suitable nesting habitat present.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	None/WL/None/ Covered	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	X	M	L	X	M	L	M	M	M	L	X	Moderate potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, North City Pipeline, MBC, and LFG Pipeline. Low potential to occur within 500-foot buffer of the NCWRP, North City Pump Station, and Miramar WTP. Not expected to occur in areas that lack suitable habitat.
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	None/SE/None/ Covered	Nests and forages in coastal saltmarsh dominated by pickleweed (*Salicornia* spp.)	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in the 500-foot buffer or component impact footprint. No suitable nesting habitat present.
Bell's sage sparrow	*Artemisiospiza belli belli*	BCC/WL/None/ None	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	X	L	X	X	L	X	L	L	L	X	X	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, North City Pipeline, and LFG Pipeline. Not expected to occur in areas lacking suitable habitat.
California brown pelican	*Pelecanus occidentalis californicus* (nesting colonies & communal roosts)	FDL/SDL, FP/None/ Covered	Forages in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in the 500-foot buffer or component impact footprint. No suitable nesting habitat present.
California horned lark	*Eremophila alpestris actia*	None/WL/None/ None	Nests and forages in grasslands, disturbed lands, agriculture, and beaches; nests in alpine fell fields of the Sierra Nevada	X	X	L	X	L	X	L	L	M	X	X	Moderate potential to forage within 500-foot buffer of the LFG Pipeline. Low potential to forage within the 500-foot buffer of the NCWRP, NCPWF, North City Pipeline, and MBC. Not expected to occur in areas lacking suitable habitat.

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California least tern	*Sternula antillarum browni* (nesting colony)	FE/SE, FP/None/ Covered	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
double-crested cormorant	*Phalacrocorax auritus* (nesting colony)	None/WL/None/ None	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
elegant tern	*Thalasseus elegans* (nesting colony)	None/WL/None/ Covered	Inshore coastal waters, bays, estuaries, and harbors; forages over open water	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
large-billed savannah sparrow	*Passerculus sandwichensis rostratus* (wintering)	None/SSC/None/ Covered	Nests and forages in open, low saltmarsh vegetation, including low halophytic scrub	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
least bittern	*Ixobrychus exilis* (nesting)	BCC/SSC/None/ None	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	X	L	X	X	X	X	L	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
long-billed curlew	*Numenius americanus* (nesting)	BCC/WL/None/ Covered	Nests in grazed, mixed grass, and short-grass prairies; localized nesting along the California coast; winters and forages in coastal estuaries, mudflats, open grassland, and cropland	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
mountain plover	*Charadrius montanus* (wintering)	BCC/SSC/None/ Covered	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	X	X	X	X	X	X	X	X	X	X	X	Not expected to winter in the 500-foot buffer or component impact footprints due to poor habitat quality.

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osprey	*Pandion haliaetus* (nesting)	None/WL/None/ None	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	X	X	X	X	X	X	M	X	X	M	X	Moderate potential to roost and forage at Miramar Reservoir within 500-foot buffer of the North City Pipeline and Miramar WTP. Not expected to nest in the 500-foot buffer or component impact footprints.
western snowy plover	*Charadrius alexandrinus nivosus* (nesting)	FT, BCC/SSC/ None/Covered	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis* (nesting)	FT, BCC/SE/ None/None	Nests in dense, wide riparian woodlands and forest with well-developed understories	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
white-faced ibis	*Plegadis chihi* (nesting colony)	None/WL/None/ Covered	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.
Canada goose	*Branta canadensis*	None/None/None/ Covered	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	X	X	X	X	X	X	L	X	L	H	X	Low potential to occur in the 500-foot buffer or component impact footprints near the Miramar Reservoir. No suitable habitat present.
reddish egret	*Egretta rufescens*	None/None/None/ Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest in the 500-foot buffer or component impact footprints. No suitable nesting habitat present.

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western bluebird	*Sialia mexicana*	None/None/None/ Covered	Nests in old-growth red fir, mixed-conifer, and lodegpole pine habitats near wet meadows used for foraging	L	M	L	X	L	L	L	L	M	L	X	Moderate potential to occur within 500-foot buffer of the Morena Pipelines and LFG Pipeline. Low potential to occur within 500-foot buffer of the Morena Pump Station, NCWRP, NCPWF, North City Pump Station, North City Pipeline, MBC, and Miramar WTP. Not expected to nest or forage in areas that lack suitable nesting habitat present.
Ridgway's rail	*Rallus obsoletus levipes*	FE/SE, FP/None/ Covered	Coastal wetlands, brackish areas, coastal saline emergent wetlands	L	X	X	X	X	X	X	X	X	X	X	Low potential to occur within 500-foot buffer of the Morena Pump Station. Not expected to nest or forage in areas that lack suitable nesting habitat present.
Mammals															
Pacific pocket mouse	*Perognathus longimembris pacificus*	FE/SSC/None/ None	Fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in the 500-foot buffer or component impact footprints due to lack of suitable habitat.
San Diego desert woodrat	*Neotoma lepida intermedia*	None/SSC/None/ None	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in the 500-foot buffer or component impact footprints due to lack of suitable habitat.
big free-tailed bat	*Nyctinomops macrotis*	None/SSC/ WBWG:MH/ None	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	X	X	X	X	X	X	X	X	X	X	X	Not expected to roost or forage within the 500-foot buffer or component impact footprints due to limited suitable habitat present.

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long-eared myotis	*Myotis evotis*	None/None/ WBWG:M/ None	Nearly all brush, woodland, and forest habitats from sea level to 9,000 feet above mean sea level, but prefers coniferous habitats; forages along habitat edges, in open habitats, and over water; roosts in buildings, crevices, under bark, and snags; uses caves as night roosts	X	L	X	X	X	X	L	X	X	X	X	Low potential to occur within the 500-foot buffer of the Morena Pipelines, and North City Pipeline due to limited habitat. Not expected to occur in areas that lack suitable habitat or in the impact footprint.
pallid bat	*Antrozous pallidus*	None/SSC/ WBWG:H/None	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	X	M	X	X	M	X	M	X	M	X	X	Moderate potential to forage within in the 500-foot buffer of the Morena Pipelines, NCPWF, and LFG Pipeline. Not expected to occur in areas lacking suitable habitat and impact footprints.
western small-footed myotis	*Myotis ciliolabrum*	None/None/ WBWG:M/None	Arid woodlands and shrublands, but near water; roosts in caves, crevices, mines, abandoned buildings	X	L	X	X	X	X	L	X	X	X	X	Low potential to forage within the 500-foot buffer of the Morena Pipelines, and NCPWF. Not expected to occur in areas lacking suitable habitat and component impact footprints.
Yuma myotis	*Myotis yumanensis*	None/None/ WBWG:LM/ None	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	M	M	X	X	X	X	M	X	X	X	X	Moderate potential to forage within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, and NCPWF. Not expected to occur in areas lacking suitable habitat and component impact footprints.
American badger	*Taxidea taxus*	None/SSC/None/ Covered	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	X	X	X	X	X	X	X	L	L	X	X	Low potential to forage within the 500-foot buffer of the LFG Pipeline. Not expected to occur in areas lacking suitable habitat and component impact footprints.

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Dulzura pocket mouse	*Chaetodipus californicus femoralis*	None/SSC/None/ None	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	X	L	L	X	L	L	L	L	L	L	X	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCWRP, NCPWF, North City Pump Station, North City Pipeline, MBC, LFG Pipeline, and Miramar WTP. Not expected to occur in areas lacking suitable habitat.
hoary bat	*Lasiurus cinereus*	None/None/ WBWG:M/None	Forest, woodland riparian, and wetland habitats; also juniper scrub, riparian forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities, such as woodpecker holes	L	L	X	X	X	X	L	X	X	X	X	Low potential to occur within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, and North City Pipeline. There is limited suitable habitat present.
Mexican long-tongued bat	*Choeronycteris mexicana*	None/SSC/ WBWG:H/None	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact footprints due to lack of suitable habitat. No suitable habitat present.
northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	None/SSC/None/ None	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	X	L	X	X	L	L	L	L	L	L	X	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, North City Pump Station, North City Pipeline, MBC, LFG Pipeline, and Miramar WTP. Not expected to occur in areas lacking suitable habitat.
pocketed free-tailed bat	*Nyctinomops femorosaccus*	None/SSC/ WBWG:M/None	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with dropoffs, caverns, and buildings	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact footprints due to lack of suitable habitat. No suitable habitat present.

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San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	None/SSC/None/ None	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	X	L	L	X	L	L	L	L	M	X	X	Moderate potential to occur within 500-foot buffer of the LFG Pipeline. Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCWRP, NCPWF, North City Pump Station, North City Pipeline, and MBC. Not expected to occur in areas lacking suitable habitat.
silver-haired bat	*Lasionycteris noctivagans*	None/None/ WBWG:M/None	Old-growth forest, maternity roosts in trees (primarily woodpecker hollows), large-diameter snags 50 feet aboveground; hibernates in hollow trees, under sloughing bark, in rock crevices, and occasionally in buildings, mines, and caves; forages in or near coniferous or mixed deciduous forest, often following stream or river drainages	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur due to lack of suitable habitat.
spotted bat	*Euderma maculatum*	None/SSC/ WBWG:H/None	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur due to lack of suitable habitat.
Stephens' kangaroo rat	*Dipodomys stephensi*	FE/ST/ None/None	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. This study area is outside of this species' geographic range.
Townsend's big-eared bat	*Corynorhinus townsendii*	None/SC, SSC/WBWG:H/ None	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	L	L	X	X	X	X	L	X	X	X	X	Low potential to occur within the 500 foot buffer of the Morena Pump Station, Morena Pipelines, and North City Pipeline. Not expected to occur in areas lacking suitable habitat.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
western mastiff bat	*Eumops perotis californicus*	None/SSC/ WBWG:H/None	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	X	L	X	X	L	X	L	L	L	L	X	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, North City Pipeline, LFG Pipeline, and Miramar WTP. Not expected to occur in areas lacking suitable habitat.
western red bat	*Lasiurus blossevillii*	None/SSC/ WBWG:H/None	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	L	L	X	X	X	X	L	X	X	X	X	Low potential to occur within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, and North City Pipeline. There is limited suitable habitat present.
western yellow bat	*Lasiurus xanthinus*	None/SSC/ WBWG:H/None	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in the 500-foot buffer or component impact footprints due to lack of suitable habitat.
cougar	*Puma concolor*	None/None/None/ Covered	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	X	X	X	X	X	X	X	L	L	X	X	Low potential to occur within the 500-foot area buffer of the MBC, and LFG Pipeline. Not expected to occur in areas lacking suitable habitat.
mule deer	*Odocoileus hemionus*	None/None/None/ Covered	Coastal sage scrub, chaparral, riparian, woodlands, and forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed areas	L	L	L	X	L	X	M	M	M	L	X	Moderate potential to occur within the 500-foot buffer for the North City Pipeline, MBC, and LFG Pipeline. Low potential to occur within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, NCWRP, NCPWF, and Miramar WTP. Not expected to occur in areas with lack of suitable habitat or in component impact footprints.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
Invertebrates															
Riverside fairy shrimp	*Streptocephalus woottoni*	FE/None/ None/Covered	Vernal pools, non-vegetated ephemeral pools	X	X	L	X	L	L	X	X	X	X	X	Low potential to occur in vernal pools observed within 500-foot buffer of the NCWRP, NCPWF, and North City Pump Station. Not expected to occur within 500-foot buffer or component impact areas. This species would have been observed during focused survey.
San Diego fairy shrimp	*Branchinecta sandiegonensis*	FE/None/None/ Covered	Vernal pools, non-vegetated ephemeral pools	X	X	L	X	X	L	D	X	D	X	X	Observed within the 500-foot buffer of or adjacent to two project components containing vernal pools: the North City Pipeline, and LFG Pipeline. Focused surveys for this species at the NCPWF in 2015/2016 and 2017 were negative. Low potential to occur in vernal pools observed within 500-foot buffer of the NCWRP, and North City Pump Station. ~~Not expected to occur within 500-foot buffer or component impact areas. This species would have been observed during focused survey.~~
obscure bumble bee	*Bombus caliginosus*	None/None/SS/ None	Relatively humid or foggy areas of the Pacific coast south to central California. Food plants include Baccharis, Cirsium, Grindelia, Phacelia, Arctostaphylos, Eriodictyon, Ceanothus, Adenostoma, and Mimulus	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within 500-foot buffer or component impact areas due to lack of suitable habitat.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
Crotch bumble bee	*Bombus crotchii*	None/None/SS/ None	Open scrub habitats and grassland in coastal California east to the Sierra-Cascade crest and south into Mexico. Food plants include Asclepias, Chaenactis, Lupinus, Medicago, Phacelia, and Salvia	X	L	L	X	L	X	L	L	L	L	X	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, North City Pipeline, LFG Pipeline, and Miramar WTP. Not expected to occur in areas lacking suitable habitat and component impact footprints.
globose dune beetle	*Coelus globosus*	None/None/SS/ None	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.
mesa shoulderband	*Helminthoglypta coelata*	None/None/SS/ None	Known only from a few locations in coastal San Diego County	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.
mimic tryonia (=California brackishwater snail)	*Tryonia imitator*	None/None/SS/ None	Inhabits coastal lagoons, estuaries, and saltmarshes, from Sonoma County south to San Diego County	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.
sandy beach tiger beetle	*Cicindela hirticollis gravida*	None/None/SS/ None	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.
senile tiger beetle	*Cicindela senilis frosti*	None/None/SS/ None	Inhabits marine shoreline, from Central California coast south to saltmarshes of San Diego; also found at Lake Elsinore	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.
Thorne's hairstreak	*Callophrys thornei*	None/None/SS/ Covered	Interior cypress woodland dominated by host plant *Hesperocyparis forbesii* (Tecate cypress)	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.
western beach tiger beetle	*Cicindela latesignata latesignata*	None/None/SS/ None	Mudflats and beaches in coastal Southern California	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.

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western tidal-flat tiger beetle	*Cicindela gabbii*	None/None/SS/ None	Inhabits estuaries and mudflats along the coast of Southern California	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.
California mellitid bee	*Melitta californica*	None/None/SS/ None	Desert regions of southwestern Arizona, southeastern California, and Baja California, Mexico; also collected from Torrey Pines, San Diego County	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within the 500-foot buffer or component impact areas due to lack of suitable habitat.
Hermes copper	*Lycaena hermes*	FC/None/None/ None	Mixed woodlands, chaparral, and coastal scrub	X	X	X	X	X	X	X	X	L	X	X	Low potential to occur in suitable habitat with host plants (*Rhamnus crocea* and *Eriogonum fasciculatum*) within the 500-foot buffer LFG Pipeline. Not expected to occur in areas lacking suitable habitat. Not observed during 2016 focused surveys.
monarch	*Danaus plexippus*	None/None/SS/ None	Wind-protected tree groves with nectar sources and nearby water sources	L	M	L	X	L	L	M	X	X	X	X	Observed during QCB surveys, however low potential to overwinter on site due to limited suitable habitat. Moderate potential to occur within the 500-foot buffer and component impact footprint at the Morena Pipelines, and North City Pipeline. Low potential to occur within the 500-foot buffer and component impact footprint at the Morena Pump Station, and NCWRP.

Common Names	Scientific Name	Status (Federal/ State/Other/ MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility - Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	North City Pure Water Pipeline (North City Pipeline)	Metro Biosolids Center Improvements (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Miramar Water Treatment Plant Improvements (Miramar WTP)	Pure Water Dechlorination Facility (Dechlorination Facility)	Potential to Occur
quino checkerspot	*Euphydryas editha quino*	FE/None/None/ None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include *Plantago erecta* (dwarf plantain), *Antirrhinum coulterianum* (white snapdragon), and *Plantago patagonica* (woolly plantain)	X	X	L	X	X	X	X	L	L	X	X	Low potential to occur within the 500-foot buffer of the NCWRP, MBC, and LFG Pipeline. Not expected to occur in areas that lack suitable habitat and outside of USFWS survey area. Not observed during 2016 focused surveys.
wandering skipper	*Panoquina errans*	None/None/SS/ Covered	Saltmarsh	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur within 500-foot buffer or component impact areas due to lack of suitable habitat.

Notes:
D = detected within the component or 500-foot buffer
M = moderate potential (suitable habitat and species observed elsewhere within the project)
L = low potential (suitable habitat but surveys were negative)
X = not expected (no suitable habitat and/or outside elevation range)
Status Notes:
FE: Federally Endangered
FT: Federally Threatened
FC: Federal Candidate
FDL: Federally Delisted
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
SSC: California Species of Special Concern
FP: California Fully Protected Species
WL: California Watch List Species
SE: State Endangered
ST: State Threatened
SDL: State Delisted
SS: List Special Animals List, but no other status
WBWG: Western Bat Working Group
H: High
HM: High-Medium
M: Medium
LM: Low-Medium
L: Low

APPENDIX O

Wildlife Species Potentially Occurring within San Vicente Reservoir

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Amphibians																	
California red-legged frog	*Rana draytonii*	FT/SSC/None/ Covered	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	X	L	X	X	X	X	X	X	X	X	X	X	X	Low potential to occur within the 500-foot buffer of the Morena Pipelines. There is limited suitable habitat. Not expected to occur in areas that lack suitable habitat.
western spadefoot	*Spea hammondii*	None/SSC/None/ None	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	X	M	L	X	M	M	L	X	L	L	X	L	H	High potential to occur within 500-foot buffer of the LFG Pipeline. Moderate potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, and North City Pump Station. Low potential to occur within 500-foot buffer of the NCWRP, San Vicente Pipeline, San Vicente Pipeline – IRAT and – MAT, and MBC. There is limited suitable habitat. Not expected to occur in areas that lack suitable habitat.

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
arroyo toad	*Anaxyrus californicus*	FE/SSC/None/ Covered	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	X	X	X	X	X	X	X	X	X	X	X	X	X	Low potential to occur within the 500-foot buffer of the Morena Pipelines. There is limited suitable habitat. Not expected to occur outside of its geographic range and in areas that lack suitable habitat.
Reptiles																	
western pond turtle	*Actinemys marmorata*	None/SSC/None/ Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	X	~~M~~D	X	X	X	X	L	L	M	L	X	X	X	Observed within 500-foot buffer of Morena Pipelines in southern riparian forest South of State Route-52 (SR-52) and east of Genesee Ave. Moderate potential to occur within the 500-foot buffer of the San Vicente Pipeline – IRAT in open water habitat. Lot potential to occur within 500-foot buffer of the San Vicente Pipeline, and San Vicente Pipeline – TAT and – MAT. Not expected to occur in areas that lack suitable habitat.

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
coast patch-nosed snake	*Salvadora hexalepis virgultea*	None/SSC/None/ None	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	X	L	X	X	X	X	L	L	L	L	X	X	L	Low potential to occur in areas of coastal sage scrub and southern mixed chaparral within the 500-foot buffer of the Morena Pipelines, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. However, the suitable dense vegetation is limited and unlikely to inhabitat species. Not expected to occur in areas that lack suitable habitat.
orangethroat whiptail	*Aspidoscelis hyperythra*	None/WL/None/ Covered	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	L	M	L	X	M	M	~~H~~D	~~H~~D	~~H~~D	H	L	M	H	Observed within 500-foot buffer of San Vicente Pipeline in coastal sage scrub north of Mission Gorge Road within Mission Trails Regional Park. Observed within 500-foot buffer of San Vicente Pipeline – TAT and – IRAT, within coastal sage scrub southeast of San Vicente Reservoir. High potential to occur within 500-foot buffer of the LFG Pipeline and San Vicente Pipeline – MAT. Moderate potential to occur within the 500-

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
																	foot buffer of the Morena Pipelines, NCPWF, North City Pump Station, and MBC. Low potential to occur within the 500-foot buffer of the Morena Pump Station, NCWRP, and MTBS. Not expected to occur in areas that lack suitable habitat.
Coronado Island skink	*Plestiodon skiltonianus interparietalis*	None/WL/None/ None	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	X	L	X	X	X	X	L	X	L	X	X	L	L	Low potential to occur in non-native grassland, coastal sage scrub, and woodlands within the 500-foot buffer of the within the 500-foot buffer of the Morena Pipelines, San Vicente Pipeline, San Vicente Pipeline – IRAT, MBC, and LFG Pipeline. However, there is lack of suitable rocky areas near water.
rosy boa	*Lichanura trivirgata*	None/None/None/ None	Desert and chaparral habitats with rocky soils in coastal canyons and hillsides, desert canyons, washes, and mountains	X	L	X	X	L	X	~~H~~D	M	L	L	X	X	M	Observed within 500-foot buffer of San Vicente Pipeline east of Golfcrest Drive along Mission Gorge Road in coastal sage scrub. Moderate potential to occur within 500-foot buffer of the San Vicente Pipeline – TAT and LFG Pipeline. Low potential to occur within 500-foot buffer

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																	of the Morena Pipelines, NCPWF, San Vicente Pipeline – IRAT and – MAT. Not expected to occur within the remaining components, which are outside the ~~. The site is outside of the~~ species' known geographic range.
green turtle	*Chelonia mydas*	FT/None/None/ None	Shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur in areas that lack suitable habitat.
San Diego ringneck snake	*Diadophis punctatus similis*	None/None/None/ None	Moist habitats including wet meadows, rocky hillsides, gardens, farmland grassland, chaparral, mixed-conifer forest, and woodland habitats	X	M	X	X	L	X	X	M	L	L	X	L	L	Moderate potential to occur within 500-foot buffer of the Morena Pipelines, San Vicente Pipeline – TAT. Low potential to occur in the 500-foot buffer of the NCPWF, San Vicente Pipeline – IRAT and – MAT, MBC, and LFG Pipeline. Not expected to occur. No suitable vegetation present.
silvery legless lizard	*Anniella pulchra pulchra*	None/SSC/None/ None	Stabilized dunes, beaches, dry washes, chaparral, scrubs, and pine, oak, and riparian woodlands; associated with sparse vegetation and sandy or loose, loamy soils	L	M	L	X	L	L	L	L	L	L	X	L	L	Moderate potential to occur within 500-foot buffer of the Morena Pipelines. Low potential to occur in coastal sage scrub, coast live oak woodland, and southern mixed chaparral within the 500-foot buffer of the

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
																	Morena Pump Station, NCWRP, NCPWF, North City Pump Station, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, MBC, and LFG Pipeline. However, there is a lack of suitable habitat available.
Blainville's horned lizard	*Phrynosoma blainvillii*	None/SSC/None/ Covered	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	X	M	X	X	L	L	H	H	H	M	X	L	M	Observed outside 500-foot buffer of San Vicente Pipeline in southern mixed chaparral south of San Vicente Reservoir. Moderate potential to occur within the 500-foot buffer of the Morena Pipelines, San Vicente Pipeline – MAT, and LFG Pipeline. Low potential to occur in open areas of coastal sage scrub within the 500-foot buffer of the NCPWF, North City Pump Station, and MBC. However, there is a lack of suitable habitat available.

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
red diamondback rattlesnake	*Crotalus ruber*	None/SSC/None/ None	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	X	M	X	X	L	L	M	M	M	M	X	L	M	Moderate potential to occur within the 500-foot buffer of the Morena Pipelines, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. Low potential to occur in coastal sage scrub and coast live oak woodland within the 500-foot buffer of the NCPWF, North City Pump Station, and MBC. However, there is a lack of suitable habitat available.
San Diegan tiger whiptail	*Aspidoscelis tigris stejnegeri*	None/SSC/None/ None	Open areas in semiarid grasslands, scrublands, and woodlands	L	H	M	X	H	M	H	~~H~~D	~~H~~D	H	L	M	H	Observed within 500-foot buffer of San Vicente Pipeline – TAT and – IRAT in coastal sage scrub southeast of San Vicente Reservoir. High potential to occur within the 500-foot buffer of the Morena Pipelines, San Vicente Pipeline and San Vicente Pipeline – MAT, and LFG Pipeline. Moderate potential to occur in coastal sage scrub within the 500-foot buffer of the NCWRP, North City Pump Station, and MBC. Low potential to occur within the 500-

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																	foot buffer of the Morena Pump Station, NCPWF, North City Pump Station, and MTBS. However, suitable habitat is limited. Low potential to occur in disturbed coastal sage scrub and non-native grassland. Not expected to occur in areas that lack suitable habitat.
two-striped gartersnake	*Thamnophis hammondii*	None/SSC/None/ None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	X	M	X	X	X	X	~~H~~D	M	L	L	X	X	X	Observed within 500-foot buffer of San Vicente Pipeline in coastal sage scrub north of the intersection of Mission Gorge Road and Golfcrest Drive. Moderate potential to occur within 500-foot buffer of the Morena Pipelines, and San Vicente Pipeline – TAT. Low potential to occur within 500-foot buffer of the San Vicente Pipeline – IRAT. However, there is no suitable streams with rocky beds. Not expected to occur in areas that lack suitable habitat.

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Birds																	
burrowing owl	*Athene cunicularia* (burrow sites & some wintering sites)	BCC/SSC/None/ Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	X	L	L	X	L	X	L	X	L	X	X	L	L	Low potential to occur in open areas of coastal sage scrub and non-native grassland within the 500-foot buffer of the Morena Pipelines, NCWRP, NCPWF, San Vicente Pipeline, San Vicente Pipeline – IRAT, MBC, and LFG Pipeline. This species' burrows would have been observed during surveys.
California black rail	*Laterallus jamaicensis coturniculus*	BCC/ST, FP/ None/None	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	X	X	X	X	X	X	L	X	X	X	X	X	X	Low potential to occur near freshwater within the 500-foot buffer of the San Vicente Pipeline. However, there is limited suitable habitat and is unlikely to occur.
ferruginous hawk	*Buteo regalis* (wintering)	BCC/WL/None/ Covered	Winters and forages in open, dry country, grasslands, open fields, agriculture	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to winter in the 500-foot buffer or component impact footprints due to poor habitat quality.

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grasshopper sparrow	*Ammodramus savannarum* (nesting)	None/SSC/None/ None	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	X	X	X	X	L	X	L	X	X	X	X	L	M	Moderate potential to occur within the 500-foot buffer of the LFG Pipeline. Low potential to occur within the 500-foot buffer of the NCPWF, San Vicente Pipeline, and MBC. There are limited open grasslands and fields, and therefore this species is unlikely to occur.
northern harrier	*Circus cyaneus* (nesting)	None/SSC/None/ Covered	Nests in open wetlands including marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes, but also in drier habitats such as grassland and grain fields; forages in variety of habitats, including grassland, scrubs, rangelands, emergent wetlands, and other open habitats	L	L	X	X	L	X	L	X	L	X	X	L	L	Low potential to occur within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, NCPWF, San Vicente Pipeline, San Vicente Pipeline – IRAT and – MAT, MBC, and LFG Pipeline. Suitable wetland habitat for nesting is limited and therefore this species is unlikely to occur.
Swainson's hawk	*Buteo swainsoni* (nesting)	BCC/ST/None/ Covered	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agriculturals areas such as wheat and alfalfa fields and pasture	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest due to lack of suitable habitat.

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tricolored blackbird	*Agelaius tricolor* (nesting colony)	BCC/SSC/None/ Covered	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberr~~y~~; forages in grasslands, woodland, and agriculture	X	X	X	X	X	X	L	L	L	L	X	X	X	Low potential to nest within the 500-foot buffer of the San Vicente Pipeline, and San Vicente Pipeline – TAT, – IRAT, and – MAT. There are limited areas of freshwater and disturbed wetland for nesting.
yellow warbler	*Setophaga petechia* (nesting)	BCC/SSC/None/ None	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	M	~~H~~D	X	X	X	X	~~H~~D	M	L	L	X	X	H	Observed in several locations within 500-ft buffer of San Vicente Pipeline in southern cottonwood-willow riparian forest and SWS east and west of State Route-67 (SR-67) north of Mapleview St. Observed within 500-foot buffer of Morena Pipelines in southern arroyo willow riparian forest east of Genesee Ave and south of Noble Drive. High potential to occur within the 500-foot buffer of the LFG Pipeline. Moderate potential to occur within 500-foot buffer of the San Vicente Pipeline – TAT and Morena Pump Station adjacent to the San Diego River. Low potential to occur in southern mixed chaparral within 500-

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																	foot buffer of San Vicente Pipeline – IRAT and – MAT. However, there is limited suitable habitat. Not expected to occur in areas that lack suitable habitat.
American peregrine falcon	*Falco peregrinus anatum* (nesting)	FDL, BCC/SDL, FP/None/ Covered	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	X	L	X	X	X	X	L	X	X	X	X	X	X	Low potential to nest within the 500-foot buffer of the Morena Pipelines and San Vicente Pipeline. Possibly nesting locations on buildings, however it is unlikely to nest in urban area.
bald eagle	*Haliaeetus leucocephalus* (nesting & wintering)	FDL, BCC/SE, FP/None/ Covered	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	X	X	X	X	X	X	X	L	L	L	X	X	X	Low potential to occur within 500-foot buffer of the San Vicente Pipeline – TAT, – IRAT, and – MAT. Not expected to occur. No suitable vegetation present.
Cooper's hawk	*Accipiter cooperii* (nesting)	None/WL/None/ Covered	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	L	~~H~~D	X	X	X	X	~~H~~D	~~H~~D	~~M~~D	~~M~~D	X	X	M	Observed in several locations. Observed within 500-foot buffer of Morena Pipelines at the corner of Towne Centre Drive and Renaissance Ave within southern coast live oak riparian forest. Observed within 500-foot buffer of San Vicente Pipeline, primarily in southern cottonwood-willow riparian forest

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																	east of Channel Road and west of SR-67. Observed within the vicinity of San Vicente Pipeline – IRAT and –MAT, near San Vicente Pipeline – TAT, within southern mixed chaparral southeast of the San Vicente Reservoir. Moderate potential to occur within the 500-foot buffer of the LFG Pipeline. Low potential to occur within 500-foot buffer of the Morena Pump Station. Not expected to occur in areas that lack suitable habitat.
coastal cactus wren	*Campylorhynchus brunneicapillus sandiegensis* (San Diego & Orange Counties only)	BCC/SSC/None/ Covered	Southern cactus scrub patches	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
coastal California gnatcatcher	*Polioptila californica californica*	FT/SSC/None/ Covered	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	X	~~H~~M	~~H~~D	L	M	M	~~H~~D	~~M~~D	~~H~~D	H	L	~~H~~D	~~H~~D	~~Observed in several locations. Observed within 500-foot buffer of Morena Pipelines south of SR-52 and west of Genesee Ave within disturbed coastal sage scrub.~~ Observed within the vicinity of the NCWRP, however there is unsuitable habitat for coastal California gnatcatcher

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																	within the developed land. ~~Observed within the vicinity of NCPWF Influent Pump Station, and North City Pump Station, however there is unsuitable habitat within the proposed development, including disturbed coastal sage scrub, non-native grassland, urban/developed, and disturbed habitat.~~ Observed within the 500-foot buffer of San Vicente Pipeline, primarily in the coastal sage scrub along Mission Gorge Road east of Golfcrest Drive. Observed within the vicinity of San Vicente Pipeline – TAT and – IRAT, within coastal sage scrub southwest of San Vicente Reservoir. Observed within the vicinity of the ~~Mission Trails Booster Station~~MTBS, however ~~there is unsuitable habitat for coastal California gnatcatcher including urban/developed and disturbed coastal sage scrub~~this species is unlikely to use the MTBS site due to

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																	proximity of surrounding development and lack of quality habitat. Observed within the 500-foot buffer of the MBC within coastal sage scrub. Observed within the 500-foot buffer of the LFG Pipeline south of Miramar Road and east of Interstate-805 (I-805) within coastal sage scrub. High potential to occur within the 500-foot buffer of the San Vicente Pipeline – MAT. Not expected to occur within the vicinity of the Morena Pump Station due to lack of suitable habitat.
least Bell's vireo	*Vireo bellii pusillus (nesting)*	FE/SE/None/ Covered	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	M	M	X	X	X	X	~~H~~D	L	L	L	X	M	M	Observed in several location along San Vicente Pipeline, including southern arroyo willow riparian forest north of Mission Gorge Road west of SR-52 and southern willow scrub north and south of Carlton Oaks Drive east of SR-52. Moderate potential to occur within 500-foot buffer of the Morena Pipelines and Morena Pump Station adjacent to the San Diego River

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																	and within the 500-foot buffer of the MBC in San Clemente Canyon and LFG Pipeline within Rose Creek. Low potential to occur within the 500-foot buffer of the San Vicente Pipeline – TAT, – IRAT, and – MAT within proximity to San Vicente Reservoir, ~~however~~ due to limited suitable riparian habitat. Not expected to occur within or nearby other components due to lack of suitable habitat.
southwestern willow flycatcher	*Empidonax traillii extimus (nesting)*	FE/SE/None/ Covered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	M	~~L~~M	X	X	X	X	L	L	L	X	X	M	M	~~Observed within 500-foot buffer of San Vicente Pipeline in southern riparian forest south of SR-52 and east of I-805.~~ Moderate potential to nest within the 500-foot buffer of the Morena Pump Station and Morena Pipelines adjacent to the San Diego River and within the 500-foot buffer of the MBC in San Clemente Canyon and LFG Pipeline within Rose Creek. Low potential to occur in coast live oak woodland near the San Vicente Reservoir within the

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																	500-foot buffer of the San Vicente Pipeline – TAT and – IRAT. Not expected to occur in areas that lack suitable habitat.
white-tailed kite	*Elanus leucurus* (nesting)	None/FP/None/ None	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	L	M	L	X	~~H~~D	X	M	M	L	X	X	M	M	Observed within the 500-foot buffer of the NCPWF. Moderate potential to nest within 500-foot buffer of the Morena Pipelines, San Vicente Pipeline, San Vicente Pipeline – TAT, MBC, and LFG Pipeline. Low potential to nest in woodland or riparian trees within the 500-foot buffer of the Morena Pump Station, NCWRP, San Vicente Pipeline – IRAT, MBC, and LFG Pipeline. There is limited suitable habitat, and therefore this species is unlikely to nest.
yellow-breasted chat	*Icteria virens* (nesting)	None/SSC/None/ None	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	M	M	X	X	X	X	~~H~~D	L	L	X	X	M	H	Observed in several locations along San Vicente Pipeline, including in SWS north and south of Calton Oaks Drive east of SR-67. High potential to occur within the 500-foot buffer of the LFG Pipeline. Moderate potential to occur

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																	within the 500-foot buffer of the Morena Pipelines, MBC, and Morena Pump Station adjacent to the San Diego River. Low potential to occur within 500-foot buffer of the San Vicente Pipeline – TAT and – IRAT. However, suitable riparian habitat is limited. Not expected to occur in areas that lack suitable habitat.
golden eagle	*Aquila chrysaetos* (nesting & wintering)	BCC/FP, WL/ None/Covered	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	X	X	X	X	X	X	L	L	L	L	X	X	L	Low potential to nest and winter within the 500-foot buffer of the San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. There are limited open shrublands and grasslands, and therefore this species is unlikely to nest and winter.
prairie falcon	*Falco mexicanus* (nesting)	BCC/WL/None/ None	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest. There is no suitable vegetation for nesting.

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southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	None/WL/None/ Covered	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	X	M	L	X	M	L	~~H~~D	H	~~H~~D	H	L	M	M	Observed in several locations within 500-foot buffer of San Vicente Pipeline in coastal sage scrub along Mission Gorge Road in Mission Trails Regional Park. Observed within 500-foot buffer of San Vicente Pipeline – IRAT within coastal sage scrub southeast of San Vicente Reservoir. Moderate potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, MBC, and LFG Pipeline in open coastal sage scrub. Low potential to occur within the 500-foot buffer of the NCWRP, North City Pump Station, and MTBS due to limited suitable habitat. ~~However, suitable habitat is limited. Low potential to occur in areas of disturbed coastal sage scrub.~~ Not expected to occur in areas that lack suitable habitat.
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	None/SE/None/ Covered	Nests and forages in coastal saltmarsh dominated by pickleweed (*Salicornia* spp.)	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.

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Bell's sage sparrow	*Artemisiospiza belli belli*	BCC/WL/None/ None	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	X	L	X	X	L	X	L	L	L	L	X	L	L	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. There is limited coastal sage scrub and chamise chaparral, and therefore this species is unlikely to occur.
California brown pelican	*Pelecanus occidentalis californicus* (nesting colonies & communal roosts)	FDL/SDL, FP/ None/Covered	Forages in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
California horned lark	*Eremophila alpestris actia*	None/WL/None/ None	Nests and forages in grasslands, disturbed lands, agriculture, and beaches; nests in alpine fell fields of the Sierra Nevada	X	X	L	X	L	X	M	L	L	L	X	L	M	Moderate potential to occur within 500-foot buffer of the San Vicente Pipeline and LFG Pipeline. Low potential to occur within the 500-foot buffer of the NCWRP, NCPWF, San Vicente Pipeline – TAT, – IRAT, and – MAT, and MBC. There is limited non-native grassland and disturbed habitat, and therefore it is unlikely to occur.

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California least tern	*Sternula antillarum browni* (nesting colony)	FE/SE, FP/None/ Covered	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest. No suitable nesting vegetation present.
double-crested cormorant	*Phalacrocorax auritus* (nesting colony)	None/WL/None/ None	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas	X	X	X	X	X	X	X	L	L	L	X	X	X	Low potential to nest within the 500-foot buffer of the San Vicente Pipeline – TAT, – IRAT, and – MAT. There is limited nesting vegetation near the San Vicente Reservoir, however it is unlikely to nest.
elegant tern	*Thalasseus elegans* (nesting colony)	None/WL/None/ Covered	Inshore coastal waters, bays, estuaries, and harbors; forages over open water	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
large-billed savannah sparrow	*Passerculus sandwichensis rostratus* (wintering)	None/SSC/None/ Covered	Nests and forages in open, low saltmarsh vegetation, including low halophytic scrub	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
least bittern	*Ixobrychus exilis* (nesting)	BCC/SSC/None/ None	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	X	L	X	X	X	X	X	L	L	L	X	X	X	Low potential to nest within the 500-foot buffer of the Morena Pipelines, San Vicente Pipeline, and San Vicente Pipeline - TAT, - IRAT, and - MAT. There are limited freshwater habitats, however there is no suitable dense aquatic vegetation for nesting.

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long-billed curlew	*Numenius americanus* (nesting)	BCC/WL/None/ Covered	Nests in grazed, mixed grass, and short-grass prairies; localized nesting along the California coast; winters and forages in coastal estuaries, mudflats, open grassland, and cropland	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
mountain plover	*Charadrius montanus* (wintering)	BCC/SSC/None/ Covered	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to winter in the 500-foot buffer or component impact footprints due to poor habitat quality.
osprey	*Pandion haliaetus* (nesting)	None/WL/None/ None	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	X	X	X	X	X	X	X	X	L	M	X	X	X	Moderate potential to nest within 500-foot buffer of the San Vicente Pipeline – MAT. Low potential to nest within the 500-foot buffer of the San Vicente Pipeline – IRAT. There is limited forested areas near San Vicente Reservoir, and therefore it is unlikely for this species to nest.
western snowy plover	*Charadrius alexandrinus nivosus* (nesting)	FT, BCC/SSC/ None/Covered	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest. No suitable nesting vegetation present.

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western yellow-billed cuckoo	*Coccyzus americanus occidentalis* (nesting)	FT, BCC/SE/ None/None	Nests in dense, wide riparian woodlands and forest with well-developed understories	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to nest. No suitable nesting vegetation present.
white-faced ibis	*Plegadis chihi* (nesting colony)	None/WL/None/ Covered	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	X	X	X	X	X	X	X	X	L	L	X	X	X	Low potential to nest within the 500-foot buffer of the San Vicente Pipeline – IRAT and – MAT. There is limited suitable habitat, and therefore it is unlikely for this species to nest.
Canada goose	*Branta canadensis*	None/None/None/ Covered	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	X	X	X	X	X	X	X	L	L	L	X	X	L	Low potential to occur within the 500-foot buffer of the San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. There is limited suitable habitat near the San Vicente Reservoir, however it is unlikely for this species to occur.
reddish egret	*Egretta rufescens*	None/None/None/ Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	X	X	X	X	X	X	L	X	X	X	X	X	X	Low potential to nest in coastal and valley freshwater marsh within the 500-foot buffer of the San Vicente Pipeline. There is limited suitable habitat, and therefore it is unlikely for this species to nest.

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western bluebird	*Sialia mexicana*	None/None/None/ Covered	Nests in old-growth red fir, mixed-conifer, and lodgepole pine habitats near wet meadows used for foraging	L	M	L	X	L	L	~~H~~D	L	L	L	X	L	M	Observed within 500-foot buffer of San Vicente Pipeline in SWS near open water in east of SR-67 and south of Willow Road near San Vicente Creek. Moderate potential to occur within 500-foot buffer of the Morena Pipelines and LFG Pipeline. Low potential to occur within 500-foot buffer of the Morena Pump Station, NCWRP, NCPWF, North City Pump Station, San Vicente Pipeline – TAT, – IRAT, and – MAT, and MBC. Not expected to occur in areas that lack suitable habitat.
Ridgway's rail	*Rallus obsoletus levipes*	FE/SE, FP/None/ Covered	Coastal wetlands, brackish areas, coastal saline emergent wetlands	L	X	X	X	X	X	X	X	X	X	X	X	X	Low potential to occur within the 500-foot buffer of the Morena Pump Station. However, there is limited suitable habitat available, and therefore it is unlikely for this species to occur.
Mammals																	
Pacific pocket mouse	*Perognathus longimembris pacificus*	FE/SSC/None/ None	Fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.

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San Diego desert woodrat	*Neotoma lepida intermedia*	None/SSC/None/ None	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	X	X	X	X	X	X	X	L	X	X	X	X	X	Low potential to occur in coastal sage scrub within the 500-foot buffer of the San Vicente Pipeline – TAT. There is limited suitable vegetation.
big free-tailed bat	*Nyctinomops macrotis*	None/SSC/ WBWG:MH/ None	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
long-eared myotis	*Myotis evotis*	None/None/ WBWG:M/None	Nearly all brush, woodland, and forest habitats from sea level to 9,000 feet above mean sea level, but prefers coniferous habitats; forages along habitat edges, in open habitats, and over water; roosts in buildings, crevices, under bark, and snags; uses caves as night roosts	X	L	X	X	X	X	X	X	X	X	X	X	X	Low potential to occur within 500-foot buffer of the Morena Pipelines. Not expected to occur in areas that lack suitable habitat.
pallid bat	*Antrozous pallidus*	None/SSC/ WBWG:H/None	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	X	M	X	X	M	X	M	X	X	X	X	X	M	Moderate potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, San Vicente Pipeline, and LFG Pipeline. There is limited suitable vegetation present.

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western small-footed myotis	*Myotis ciliolabrum*	None/None/ WBWG:M/None	Arid woodlands and shrublands, but near water; roosts in caves, crevices, mines, abandoned buildings	X	L	X	X	X	X	X	X	X	X	X	X	X	Low potential to occur within 500-foot buffer of the Morena Pipelines. Not expected to occur in areas that lack suitable habitat.
Yuma myotis	*Myotis yumanensis*	None/None/ WBWG:LM/ None	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	M	M	X	X	X	X	M	X	X	X	X	X	X	Moderate potential to occur within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, and San Vicente Pipeline. There is limited suitable vegetation present.
American badger	*Taxidea taxus*	None/SSC/None/ Covered	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	X	X	X	X	X	X	L	L	L	L	X	L	L	Low potential to occur within the 500-foot buffer of the San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. There is limited suitable vegetation present.
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	None/SSC/None/ None	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	X	L	L	X	L	L	L	L	L	L	X	L	L	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCWRP, NCPWF, North City Pump Station, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. There is limited suitable vegetation present.

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hoary bat	*Lasiurus cinereus*	None/None/ WBWG:M/None	Forest, woodland riparian, and wetland habitats; also juniper scrub, riparian forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities, such as woodpecker holes	L	L	X	X	X	X	L	X	X	X	X	X	X	Low potential to occur within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, and San Vicente Pipeline. There is limited suitable vegetation present.
Mexican long-tongued bat	*Choeronycteris mexicana*	None/SSC/ WBWG:H/None	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	None/SSC/None/ None	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	X	L	X	X	L	L	L	L	L	L	X	L	L	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, North City Pump Station, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. There is limited suitable vegetation present.

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pocketed free-tailed bat	*Nyctinomops femorosaccus*	None/SSC/ WBWG:M/None	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with dropoffs, caverns, and buildings	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	None/SSC/None/ None	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	X	L	L	X	L	L	M	L	L	L	X	L	M	Moderate potential to occur within 500-foot buffer of the San Vicente Pipeline, and LFG Pipeline. Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCWRP, NCPWF, North City Pump Station, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and MBC. There is limited suitable vegetation present.

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silver-haired bat	*Lasionycteris noctivagans*	None/None/ WBWG:M/None	Old-growth forest, maternity roosts in trees (primarily woodpecker hollows), large-diameter snags 50 feet aboveground; hibernates in hollow trees, under sloughing bark, in rock crevices, and occasionally in buildings, mines, and caves; forages in or near coniferous or mixed deciduous forest, often following stream or river drainages	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
spotted bat	*Euderma maculatum*	None/SSC/ WBWG:H/None	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
Stephens' kangaroo rat	*Dipodomys stephensi*	FE/ST/None/ None	Annual and perennial grassland habitats, coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. This study area is outside of this species' geographic range.

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Townsend's big-eared bat	*Corynorhinus townsendii*	None/SC, SSC/WBWG:H/ None	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	L	L	X	X	X	X	L	X	X	X	X	X	X	Low potential to occur within 500-foot buffer of the Morena Pump Station, Morena Pipelines, and San Vicente Pipeline. There is limited suitable vegetation present.
western mastiff bat	*Eumops perotis californicus*	None/SSC/ WBWG:H/None	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	X	L	X	X	L	X	L	L	L	L	X	L	L	Low potential to occur within the 500-foot buffer of the Morena Pipelines, NCPWF, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, MBC, and LFG Pipeline. There is limited suitable vegetation present.
western red bat	*Lasiurus blossevillii*	None/SSC/ WBWG:H/None	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	L	L	X	X	X	X	L	L	L	L	X	X	X	Low potential to occur within the 500-foot buffer of the Morena Pump Station, Morena Pipelines, San Vicente Pipeline, and San Vicente Pipeline – TAT, – IRAT, and – MAT. There is limited suitable vegetation present.
western yellow bat	*Lasiurus xanthinus*	None/SSC/ WBWG:H/None	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.

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cougar	*Puma concolor*	None/None/None/ Covered	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	X	X	X	X	X	X	M	M	M	M	X	L	L	Moderate potential to occur within 500-foot buffer of the San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT. Low potential to occur within the 500-foot buffer of the MBC, and LFG Pipeline. There is limited suitable vegetation present.
mule deer	*Odocoileus hemionus*	None/None/None/ Covered	Coastal sage scrub, chaparral, riparian, woodlands, and forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed areas	L	L	L	X	L	X	~~H~~D	H	H	H	L	M	M	Observed within 500-foot buffer of San Vicente Pipeline in coastal sage scrub north of Mission Gorge Road within Mission Trails Regional Park. Moderate potential to occur within 500-foot buffer of the MBC, and LFG Pipeline. Low potential to occur within 500-foot buffer of the Morena Pump Station, Morena Pipelines, NCPWF, and NCWRP. Not expected to occur in areas with lack of suitable habitat.
Invertebrates																	
Riverside fairy shrimp	*Streptocephalus woottoni*	FE/None/None/ Covered	Vernal pools, non-vegetated ephemeral pools	X	X	L	X	L	L	L	X	X	X	X	X	X	Low potential in areas with vernal pools within the 500-foot buffer of the NCWRP, NCPWF, North City Pump Station, and San Vicente Pipeline.

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
																	Would have been observed during focused survey. Not observed during focused surveys.
San Diego fairy shrimp	*Branchinecta sandiegonensis*	FE/None/None/ Covered	Vernal pools, non-vegetated ephemeral pools	X	X	L	X	X	L	D	X	X	X	X	X	D	Observed within the 500-foot buffer of or adjacent to two project component containing vernal pools: the LFG Pipeline, and San Vicente – Repurposed Pipeline. Focused surveys for this species at the NCPWF in 2015/2016 and 2017 were negative. Low potential in areas with vernal pools within the 500-foot buffer of the NCWRP, North City Pump Station, and San Vicente Pipeline. Would have been observed during 2015/16 focused surveys.
obscure bumble bee	*Bombus caliginosus*	None/None/SS/ None	Relatively humid or foggy areas of the Pacific coast south to central California. Food plants include Baccharis, Cirsium, Grindelia, Phacelia, Arctostaphylos, Eriodictyon, Ceanothus, Adenostoma, and Mimulus	X	X	X	X	X	X	L	L	L	L	X	X	X	Low potential to occur within the 500-foot buffer of the San Vicente Pipeline, and San Vicente Pipeline – TAT, – IRAT, and – MAT. There is limited suitable vegetation present.

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Crotch bumble bee	*Bombus crotchii*	None/None/SS/ None	Open scrub habitats and grassland in coastal California east to the Sierra-Cascade crest and south into Mexico. Food plants include Asclepias, Chaenactis, Lupinus, Medicago, Phacelia, and Salvia	X	X	X	X	X	X	L	L	L	L	X	L	L	Low potential to occur within the 500-foot buffer of the San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, MBC, and LFG Pipeline. There is limited suitable vegetation present.
globose dune beetle	*Coelus globosus*	None/None/SS/ None	Inhabitant of coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
mesa shoulderband	*Helminthoglypta coelata*	None/None/SS/ None	Known only from a few locations in coastal San Diego County	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
mimic tryonia (=California brackishwater snail)	*Tryonia imitator*	None/None/SS/ None	Inhabits coastal lagoons, estuaries, and saltmarshes, from Sonoma County south to San Diego County	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
sandy beach tiger beetle	*Cicindela hirticollis gravida*	None/None/SS/ None	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
senile tiger beetle	*Cicindela senilis frosti*	None/None/SS/ None	Inhabits marine shoreline, from Central California coast south to saltmarshes of San Diego; also found at Lake Elsinore	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.

Common Names	Scientific Name	Status (Federal/State/ Other/MSCP)	Habitat	Morena Pump Station	Morena Wastewater Forcemain and Brine/Centrate Line (Morena Pipelines)	North City Water Reclamation Plant Expansion (NCWRP)	North City Pure Water Facility – Influent Pump Station (NCPWF Influent Pump Station)	North City Pure Water Facility (NCPWF)	North City Pure Water Pump Station (North City Pump Station)	San Vicente Pure Water Pipeline (San Vicente Pipeline)	San Vicente Pipeline – Tunnel Alternative Terminus (San Vicente Pipeline – TAT)	San Vicente Pipeline – In-Reservoir Alternative Terminus (San Vicente Pipeline – IRAT)	San Vicente Pipeline – Marine Alternative Terminus (San Vicente Pipeline – MAT)	Mission Trails Booster Station (MTBS)	Metro Biosolids Center (MBC)	Landfill Gas Pipeline (LFG Pipeline)	Potential to Occur
Thorne's hairstreak	*Callophrys thornei*	None/None/SS/ Covered	Interior cypress woodland dominated by host plant *Hesperocyparis forbesii* (Tecate cypress)	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. Tecate cypress was not observed during surveys.
western beach tiger beetle	*Cicindela latesignata latesignata*	None/None/SS/ None	Mudflats and beaches in coastal Southern California	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
western tidal-flat tiger beetle	*Cicindela gabbii*	None/None/SS/ None	Inhabits estuaries and mudflats along the coast of Southern California	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
California mellitid bee	*Melitta californica*	None/None/SS/ None	Desert regions of southwestern Arizona, southeastern California, and Baja California, Mexico; also collected from Torrey Pines, San Diego County	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.
Hermes copper	*Lycaena hermes*	FC/None/None/ None	Mixed woodlands, chaparral, and coastal scrub	X	X	X	X	X	X	L	X	X	X	X	X	L	Low potential to occur in suitable habitat with host plants (*Rhamnus crocea* and *Eriogonum fasciculatum*) within the 500-foot buffer San Vicente Pipeline, and LFG Pipeline. Would have been observed during focused surveys. Not expected to occur in areas lacking suitable habitat.

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monarch	*Danaus plexippus*	None/None/SS/ None	Wind-protected tree groves with nectar sources and nearby water sources	L	M	L	X	L	L	M	M	M	M	X	X	M	Observed during QCB surveys, however low potential to overwinter on site due to limited suitable habitat and outside of known geographic range. Moderate potential to occur within 500-foot buffer of the Morena Pipelines, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, and LFG Pipeline. Low potential to occur within 500-foot buffer of the Morena Pump Station, NCWRP, NCPWF, and North City Pump Station.
quino checkerspot	*Euphydryas editha quino*	FE/None/None/ None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include *Plantago erecta* (dwarf plantain), *Antirrhinum coulterianum* (white snapdragon), and *Plantago patagonica* (woolly plantain)	X	X	L	X	X	X	L	L	L	L	X	L	L	Low potential to occur within the 500-foot buffer of the NCWRP, San Vicente Pipeline, San Vicente Pipeline – TAT, – IRAT, and – MAT, MBC, and LFG Pipeline. Although suitable habitat (adult nectar plants and larvae host plants) occurs within the alignment, focused surveys conducted in 2016 were negative.

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wandering skipper	*Panoquina errans*	None/None/SS/ Covered	Saltmarsh	X	X	X	X	X	X	X	X	X	X	X	X	X	Not expected to occur. No suitable vegetation present.

Notes:
D = detected within the component or 500-foot buffer
M = moderate potential (suitable habitat and species observed elsewhere within the project)
L = low potential (suitable habitat but surveys were negative)
X = not expected (no suitable habitat and/or outside elevation range)
Status Notes:
FE: Federally Endangered
FT: Federally Threatened
FC: Federal Candidate
FDL: Federally Delisted
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
SSC: California Species of Special Concern
FP: California Fully Protected Species
WL: California Watch List Species
SE: State Endangered
ST: State Threatened
SDL: State Delisted
SS: List Special Animals List, but no other status
WBWG: Western Bat Working Group
H: High
HM: High-Medium
M: Medium
LM: Low-Medium
L: Low