APPENDIX D – Biological Resources Reports

APPENDIX D 1– Biological Technical Report

BIOLOGICAL TECNHICAL REPORT FOR THE DEVIL'S GATE RESERVOIR PROJECT SITE IN THE CITY OF PASADENA, LOS ANGELES COUNTY, CALIFORNIA

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SECTION 1.0 – INTRODUCTION

Chambers Group, Inc. (Chambers Group) was retained by Los Angeles County Department of Public Works (LACDPW) to conduct a literature review and reconnaissance-level survey for the proposed Devil's Gate Dam and Reservoir Postfire Sediment Removal Project. All sensitive species identified with a potential for occurrence on the Project site were included in the habitat assessment. The site was also assessed for the potential to support jurisdictional waters.

The Survey Area includes the Approximate Excavation Footprint and a buffer so impacts to adjacent resources could be analyzed. The proposed project will not impact the entire Survey Area. The purpose of the biological reconnaissance survey is to document the results of the habitat assessment and sensitive species focused surveys, to help determine the potential for significant impacts.

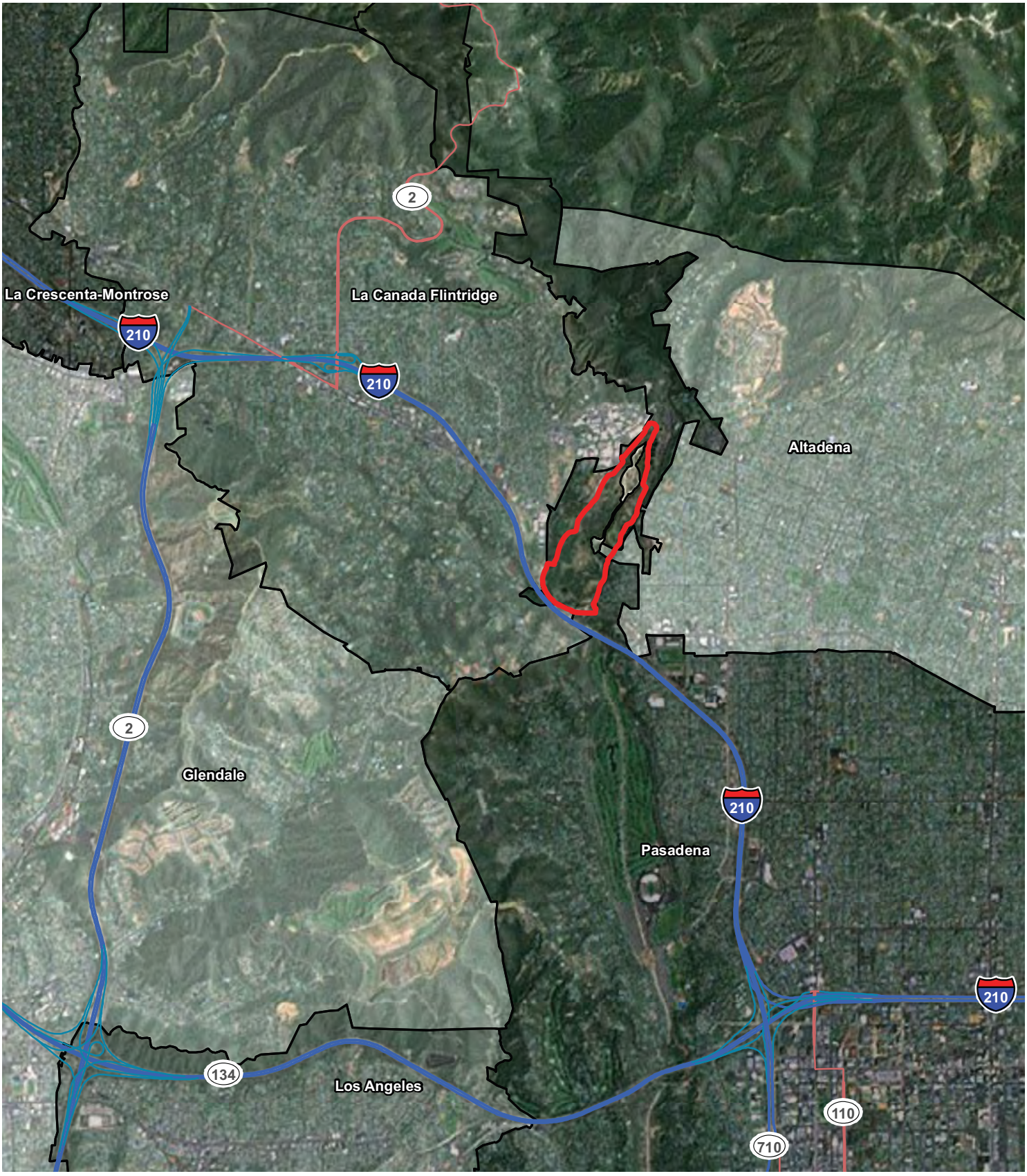
Following the biological reconnaissance-level survey, Chambers Group conducted focused surveys for eight sensitive plant species: Nevin's barberry, Plummer's mariposa lily, Parry's spineflower, slender-horned spineflower, mesa horkelia, white rabbit-tobacco, Parish's gooseberry, and Greata's aster; and one sensitive wildlife species: least Bell's vireo.

1.1. PROJECT LOCATION

Devil's Gate Dam and Reservoir is situated on the south facing slopes of the San Gabriel Mountains. The Project site is located, north of Interstate 210, west of North Arroyo Blvd., and east of Oak Grove Drive, in the City of Pasadena, Los Angeles County, California (Figure 1). The site is within the U.S. Geological Survey (USGS) *Pasadena,* California 7.5-minute topographic quadrangle in Section 7 of Township 1 north, and Range 12 west (Figure 2). The elevation range at the site is between approximately 1,000 and 1,300 feet above mean sea level (amsl). The reservoir is within the Hahamongna Watershed and is a tributary to the Arroyo Seco, which drains into the Los Angeles River.

1.2. PROJECT DESCRIPTION

The 2009 station fire was the 10th largest fire in California since 1933 and burned over 160,000 acres before containment. Approximately 68 percent of the watershed tributary to Devil's Gate Reservoir was burned, leaving vast areas of the San Gabriel Mountains denuded and sediment deposition inevitable. On average a watershed will take five years or more to recover from a fire. During this time, increased amounts of debris production are anticipated from the denuded ground surface. Sediment removal is necessary to maintain an acceptable level of flood protection to mitigate the significant risk of severe flooding in the communities downstream of the dam. LACDPW is preparing a major sediment removal project for Devil's Gate Reservoir to remove the accumulated sediment and make room for future sedimentation that will undoubtedly occur. The proposed project will remove 1,671,000 CY, of sediment debris from Devil's Gate Reservoir. This area of impact is defined as the Approximate Excavation Footprint (Figure 3). Construction is scheduled to occur as early as Summer 2011.



Legend

Survey Area

City Limit

N
W E
S

0 0.5 1 Miles

Figure 1
Project Vicinity Map

Chambers Group Inc.

Legend

Survey Area

N
W E
S

0 500 1,000 Feet

Figure 2
Project Location Map

Chambers Group Inc.

SECTION 2.0 – METHODOLOGY

2.1. LITERATURE REVIEW

Prior to performing the field surveys, existing documentation relevant to the Survey Area was reviewed. The most recent records of the California Natural Diversity Database managed by the California Department of Fish and Game (CDFG 2010) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2010) were reviewed for the quadrangle containing and surrounding the Survey Area (i.e. *Pasadena*, California USGS 7.5 minute quadrangles). These databases contain records of reported occurrences of federal- or state-listed as endangered or threatened species, proposed endangered or threatened species, former Federal Species of Concern (FSC), California Species of Special Concern (CSC), or otherwise sensitive species or habitat that may occur within or in the immediate vicinity of the Survey Area.

2.2. SOILS

Before conducting the surveys, soil maps for Los Angeles County were referenced online to determine the types of soil found on the site. Soils were determined in accordance with categories set forth by the U.S. Department of Agriculture (USDA) Soil Conservation Service and by referencing the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2009).

2.3. BIOLOGICAL RECONNAISSANCE-LEVEL SURVEY

The field survey was conducted in the Survey Area in order to identify any potential for occurrence of sensitive species, vegetation communities, or habitats to support sensitive wildlife species. The survey was conducted on foot throughout the Survey Area between 0815 and 1320 hours on May 27, 2010. Photographs of the Survey Area were recorded to document existing conditions. Weather conditions during the survey included temperatures ranging from approximately 62 to 64 degrees Fahrenheit with 100 percent cloud cover and a slight drizzle in the morning. Chambers Group biologists Linette Lina and Saraiah Skidmore conducted the general reconnaissance survey.

2.3.1 Vegetation

All plant species and soil types observed onsite were noted. Plant communities in the Survey Area were identified, qualitatively described, and mapped onto an aerial photograph. Plant communities were determined in accordance with the categories set forth in Holland (1986) or Sawyer and Keeler-Wolf (1995). Plant nomenclature follows that of *The Jepson Manual: Higher Plants of California* (Hickman 1993). A comprehensive list of the plant species observed during the survey is presented in Appendix A.

2.3.2 Wildlife

All wildlife and wildlife sign observed and detected, including tracks, scat, carcasses, burrows, excavations, and vocalizations, were recorded. Additional survey time was spent in those habitats most likely to be utilized by wildlife (undisturbed native habitat, wildlife trails, etc.) or in habitats with the potential to support state- and/or federal-listed or proposed listed species. Notes were made on the general habitat types, species observed, and the conditions of the site. A list of the wildlife species observed during the site visit is included as Appendix B.

2.3.3 USACE, SWRQCB, and CDFG Preliminary Jurisdictional Assessment

Prior to beginning the field preliminary delineation, a 50-foot-to-the-inch scaled topographic map, scaled aerial photograph, and the *Pasadena* 7.5-minute USGS topographic quadrangle map were examined to determine the locations of potential areas of U.S. Army Corps of Engineers (USACE), California State Water Resources Quality Control Board (SWRQCB), and/or California Department of Fish and Game (CDFG) jurisdiction. Chambers Group biologists examined the Survey Area to identify potential USACE jurisdiction pursuant to Section 404 and 401 of the Clean Water Act and CDFG jurisdiction pursuant to Section 1602 of the State of California Fish and Game Code. Suspected jurisdictional areas were field checked for the presence of riparian vegetation, definable channels, and Ordinary High Water Marks (OHWMs). The lateral extent of a jurisdictional drainage can be measured in several ways depending on the particular situation. The outer edge of riparian vegetation is used as the line of demarcation between riparian and upland habitats and is, therefore, an identifiable boundary of the lateral extent of a jurisdictional drainage. On smaller streams or dry washes with little or no riparian habitat, the uppermost bank extents may be used to mark the jurisdictional drainage

2.4. SENSITIVE SPECIES FOCUSED SURVEYS

2.4.1 Focused Plant Surveys

Chambers Group conducted the reconnaissance-level survey in the Survey Area on May 27, 2010. Based on the literature search and reconnaissance survey, two of the sensitive plants are federal and state-listed as endangered species, and were determined to have potential for occurrence onsite. An additional six otherwise sensitive (CNPS-listed) species were also determined to have potential for occurrence.

A sensitive species is considered to potentially occur in a project area if its known geographic range includes part of the project area or an adjacent USGS 7.5-minute quadrangle and/or if the general habitat or environmental conditions (e.g., soil type, etc.) required for the species are present. The criteria for evaluating a species potential for occurrence (PFO) on a site is presented in Table 1.

Table 1
Criteria for Evaluating Sensitive Plant Species Occurrences

PFO	CRITERIA
Absent:	Species was not observed during focused surveys conducted at an appropriate time for identification of the species, or species is restricted to habitats or environmental conditions that do not occur within the site.
Low:	Historical records for this species do not exist within the immediate vicinity (approximately 5 miles) of the site, and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate:	Either a historical record exists of the species within the immediate vicinity of the site (approximately 5 miles) and marginal habitat exists on the site, or the habitat requirements or environmental conditions associated with the species occur within the site, but no historical records exist within 5 miles of the site.
High:	Both a historical record exists of the species within the site or its immediate vicinity (approximately 5 miles), and the habitat requirements and environmental conditions associated with the species occur within the site.
Present:	Species was detected within the site at the time of the survey.

Because potential for sensitive plant species to occur onsite existed, focused surveys were recommended and conducted within the Survey Area. Because the sensitive plant species with potential to occur have two different flowering periods, two separate focused plant surveys were conducted. Chambers Group botanists Rebecca Alvidrez, Nichole Cervin, Heather Clayton, Ana Hernandez, Tracy Valentovich, and Jeremy Smith conducted the first focused survey on June 28 through June 30, 2010. Heather Clayton, Kun Liu, Fern Hoffman, and Saraiah Skidmore conducted the second focused survey on August 24, 2010. The surveys consisted of walking the entire Survey Area and noting all plant species. A comprehensive list of the plant species observed during the surveys is presented in Appendix A.

To ensure the detection of rare plants, the botanists were organized into a single horizontal line and were spaced apart to form adjacent belt transects such that each botanist was surveying 15 feet on each side of their own transect, or more where visibility was high. The edge of each transect abutted the adjacent transect, leaving no gaps between each belt, for at least 100 percent coverage throughout all suitable habitats onsite. Each botanist walked in the direction of the agreed upon endpoint within the individual belt transect in a slightly meandering pattern for maximum and overlapping coverage. When suitable microhabitats were encountered or where small plants resembling sensitive species were present, the botanists would stop and carefully scan the microhabitat to positively identify each plant.

Plants of uncertain identity were collected and subsequently identified from keys, descriptions, and illustrations in Hickman ed. (1993). Plant nomenclature follows that of *The Jepson Manual* (1993).

2.4.2 Focused Least Bell's Vireo Surveys

Surveys for least Bell's vireo were performed according to modified USFWS guidelines (USFWS 2001). Constraints prevented surveys from being conducted early in the season; therefore, in order to complete all surveys during the 2010 breeding season, surveys were conducted from May through August, approximately seven days apart. All surveys were conducted during favorable weather conditions.

Chambers Group biologists Linette Lina and Mike McEntee conducted eight protocol surveys (May 27; July 7, 15, 22, and 29; August 5, 12, and 19). Surveys were conducted between sunrise and 1200 by walking suitable riparian habitats within 500 feet of the Survey Area as well as stopping in the best locations within the habitat in order to visually and audibly observe for vireos. Protocol surveys took place between sunrise and 1100. No more than 50 hectares of suitable riparian habitat were surveyed by each biologist per day. Biologists listened for the song of the male vireo as well as the whisper songs, calls, and scolds of both sexes and looked for individual vireos within the surveyed habitats. All vireos, other birds, and wildlife and their sign (e.g., tracks, scat, carcasses, feathers, burrows, nests, excavations, and vocalizations) detected during the focused surveys were recorded (Appendix B). Chambers Group biologists also recorded the locations of all sensitive species. Recorded observations generally included behaviors, pairing statuses, and nesting statuses of vireo, brown-headed cowbird presence, habitat characteristics, and other pertinent data. The USFWS guidelines require any vireos identified be observed for banded legs and any observed banding combinations be recorded.

SECTION 3.0 – RESULTS

3.1. LITERATURE REVIEW

3.1.1 Status Codes

The following information is a list of abbreviations used to help determine the significance of biological resources potentially occurring in the Survey Area.

Federal

FE = Federally listed; Endangered

FT = Federally listed; Threatened

FC = Federal Candidate for listing

State

ST = State listed; Threatened

SE = State listed; Endangered

RARE = State-listed; Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)

CSC = State Species of Special Concern

CNPS

List 1A = Plants presumed extinct in California.

List 1B = Plants rare and endangered in California and throughout their range.

List 2 = Plants rare, threatened or endangered in California but more common elsewhere in their range.

List 3 = Plants about which we need more information; a review list.

List 4 = Plants of limited distribution; a watch list.

CNPS Extensions

0.1 = Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).

0.2 = Fairly endangered in California (20-80 percent occurrences threatened).

0.3 = Not very endangered in California (less than 20 percent of occurrences threatened).

3.1.2 Plants

The literature review resulted in a list of 14 sensitive plant species that have been known to occur in the Devil's Gate area. Eight of these sensitive species were considered to have a potential to occur in the Survey Area prior to the focused plant survey, none were observed.

The following six plant species are considered **absent** from the Survey Area due to a lack of suitable habitat present or because the species occurs outside the elevation range found in the Survey Area:

- round-leaved filaree (*California macrophylla*) – CNPS List 1B.1;
- southern tarplant (*Centromadia parryi* ssp. *australis*) – CNPS List 1B.1;
- Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) – CNPS List 1A;
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) – CNPS List 1B.1;
- San Gabriel linanthus (*Linanthus concinnus*) – CNPS List 1B.2; and
- Orcutt's linanthus (*Linanthus orcuttii*) – CNPS List 1B.3.

Suitable habitat was present onsite for eight sensitive species; however, after the focused plant surveys in which none of these species were observed within the Survey Area, the following species are considered **absent** from the site:

- Nevin's barberry (*Berberis nevinii*) – **FE**, **SE**, CNPS List 1B.1 and
- Plummer's mariposa lily (*Calochortus plummerae*) – CNPS List 1B.2;
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) – CNPS List 1B.1;
- slender-horned spineflower (*Dodecahema leptoceras*) – **FE**, **SE**, CNPS List 1B.1;
- mesa horkelia (*Horkelia cuneata* ssp. *puberula*) – CNPS List 1B.1;
- white rabbit-tobacco (*Pseudognaphalium leucocephalum*) – CNPS List 2.2;
- Parish's gooseberry (*Ribes divaricatum* var. *parishii*) – CNPS List 1A; and
- Greata's aster (*Symphyotrichum greatae*) – CNPS List 1B.3.

3.1.3 Wildlife

After a literature review and an assessment of the various habitat types in the Survey Area, it was determined that 14 sensitive wildlife species have the potential to occur within the Survey Area or were present in the Survey Area during the survey. Factors used to determine potential for occurrence include quality of habitat, impact of surrounding residential development, and the date and location of prior CNDDB records of occurrence. The following identifies these sensitive species and their potentials to occur. Current listing status for each species is provided after their scientific names:

Due to the lack of known historical occurrences within five miles of the Survey Area, the following nine species have a **low** potential for occurrence in the Survey Area:

- pallid bat (*Antrozous pallidus*) – CSC;
- burrowing owl (*Athene cunicularia*) – CSC; and
- southwestern willow flycatcher (*Empidonax traillii extimus*) **– FE, SE;**
- western mastiff bat (*Eumops perotis californicus*) – CSC;
- western yellow bat (*Lasiurus xanthinus*) – SCS
- southern grasshopper mouse (*Onchomys torridus ramona*) – CSC;
- coast horned lizard (*Phrynosoma blainvillii*) – CSC;
- Sierra Madre yellow-legged frog (*Rana muscosa*) – CSC; and
- American badger (*Taxidea taxus*) – CSC.

Due to the presence of suitable habitat, the following species have a **moderate** potential for occurrence in the Survey Area:

- southwestern pond turtle (*Actinemys marmorata*) – CSC; and
- least Bell's vireo (*Vireo bellii pusillus*) – **FE, SE**.

Due to the presence of suitable habitat and occurrences within five miles of the Project site, the following species has a **high** potential for occurrence in the Survey Area:

- coast range newt (*Taricha torosa torosa*) – CSC.

The following two species were **present** within the Survey Area during the biological reconnaissance survey. It was determined that the yellow warbler was migrating through the site, not nesting. An expired two-striped garter snake was observed on the dirt road leading to the spillway of the dam.

- yellow warbler (*Dendroica petechia*) – CSC (nesting); and
- two-striped garter snake (*Thamnophis hammondii*).

3.2. SOILS

After review of USDA Soil Conservation Service and by referencing the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2009), it was determined that data using this resource does not exist at this time. Soil data is important in the process of analyzing what plants may occur in the Survey Area. Most sensitive plants will only grow in specific soil types. Soil types will then help determine where to conduct focused surveys for listed plants. The following includes a description of soils identified during the reconnaissance level survey.

Many soil types were found present in the Survey Area during the biological reconnaissance survey. Sandy soils occur within the Arroyo Seco watershed. Clay soils occur in low spots, which create areas where water can pool. Silty soils occur at the spillway of Devil's Gate Dam, and sandy loam soils occur in upland communities.

3.3. BIOLOGICAL RECONNAISSANCE SURVEY

3.3.1 Vegetation

3.3.1.1 General

At the time of the survey, the Survey Area was primarily composed of riparian and upland communities (Figure 3). Southern Coast Live Oak does occur in the Survey Area and adjacent to the site. Southern Sycamore Alder Riparian Forests was not identified on the site. Representative site photographs were taken to document site conditions during the survey (Appendix C).

3.3.1.2 Vegetation Communities Descriptions

Riparian Communities

Black Willow Series

Black Willow Series, as described by Sawyer and Keeler-Wolf (1995), exists when black willow (*Salix gooddingii*) is the sole dominant shrub or tree in the canopy. This community occurs in habitats seasonally flooded and saturated with freshwater. This community occurs in floodplains along rivers and streams and on the edges of meadows. Species that usually occur with black willow include California sycamore (*Platanus racemosa*), coyote brush (*Baccharis pilularis*), Fremont cottonwood (*Populus fremontii),* Mexican elderberry (*Sambucus mexicana*), mule fat (*Baccharis salicifolia*), white alder (*Alnus rhombifolia),* and other willows (*Salix* sp.).

Black Willow Series is present in the Survey Area within the reservoir along the stream. Black willow is dominant in this community. Other native species include mule fat (*Baccharis salicifolia*), Fremont cottonwood, black cottonwood (*Populus trichocarpa),* white alder, red willow (*Salix laevigata*), and California dodder (*Cuscuta californica*). Non-native species in this community include gum tree (*Eucalyptus* sp.) and tree tobacco (*Nicotiana gluaca*).

White Alder Woodland

White Alder Woodland consists of tall, open broadleaved, winter-deciduous, streamside woodland often dominated by white alder. White alders prefer perennial streams. Species that may occur in this community include big leafed maple (*Acer macrophyllum*), mugwort (*Artemisia douglasiana*), coast live oak (*Quercus agrifolia*), California blackberry (*Rubus ursinus*), Mexican elderberry, poison oak (*Toxicodendron diversilobum*), California bay (*Umbellularia californica*), and stinging nettle (*Urtica dioica*).

A small patch of White Alder Woodland is present at the northernmost point of the Survey Area. The patch of trees is located on the east bank of the Arroyo Seco watershed. The understory consists of sand, most likely due to regular scouring from floods.

Mule Fat Scrub

Mule Fat Scrub consists of dense stands of mule fat with lesser amounts of willow species. This community type is classified as a mixed evergreen-deciduous shrubland with a continuous canopy and a sparse understory. This community typically occupies intermittent streambeds and seeps; and it occurs at elevations ranging from sea level to 4,100 feet amsl (Holland 1986; Gray and Bramlet 1992).

The Mule Fat Scrub community is present in the Survey Area. The native plant species found include mule fat and black willow. Non-native species found within this community in the Survey Area include Italian thistle (*Carduus pycnocephalus*), poison hemlock (*Conium maculatum*), and short-podded mustard *(Hirschfeldia incana*).

Riparian Herbaceous

Riparian Herbaceous vegetation is an early successional stage of willow scrub and riparian forest communities. Flooding (or other disturbance factors) often scours woody riparian vegetation away, and the site is rapidly colonized by pioneer wetland herbaceous plants (Gray and Bramlet 1992).

Sparse riparian herbaceous vegetation is present within the waterway if the Survey Area. Native plant species found in this community include mule fat, black willow, and red willow. Nonnative plant species in this community include curly dock (*Rumex crispus*), wild radish (*Raphanus sativus*), and short-podded mustard.

<u>Upland Communities</u>

Coast Live Oak Woodland

Coast Live Oak Woodland consists of evergreen trees dominated by coast live oak reaching between 30 to 80 feet in height. Shrub layer is poorly developed and can include lemonade berry (*Heteromeles arbutifolia*), gooseberry *(Ribes* sp.), and Mexican elderberry. Herbaceous layer is continuous and dominated by nonnatives such as ripgut brome (*Bromus diandrus*). This community occurs on exposed north-facing slopes below 4,000 feet amsl and in shaded ravines in the south and has been known to intergrade with Coastal Scrub, Upper Sonoran Mixed Chaparral on drier sites and Coast Live Oak Forest and Mixed Evergreen Forest on moister sites (Holland 1986).

Coast Live Oak Woodland is present in the Survey Area on the slopes east and west of the watershed. Coast live oak is the dominant species in this community. Other native species included Mexican elderberry and poison oak. Nonnative species in the understory included wild oat (*Avena fatua*), ripgut brome, foxtail chess (*Bromus madritensis*), Italian thistle, and short-podded mustard. A few scattered coast live oaks occur on the church grounds within the ornamental vegetation community.

Riversidian Alluvial Fan Sage Scrub

Riversidian Alluvial Fan Sage Scrub occurs in alluvial fans as well as in washes and is a subtype of Riversidian Coastal Scrub (Holland 1986). Three stages of alluvial fan scrub succession are described by Smith (1980) with density and species diversity varying in direct relationship to the frequency of water scouring each stage receives. Older stages of alluvial scrub are located on high benches and have not been subjected to a recent major flood event. This mature stage can be identified by the presence of larger shrubs, an increase in species diversity, and a groundcover of organic material and annual grasses. Many large shrubs over 10 feet in height are found in the mature community, including laurel (*Malosma*

laurina). The intermediate and early stages are located on lower benches closer to the active flood plain and have been subjected to relatively recent flooding events. Intermediate and early stages are progressively more open and less diverse. Medium-sized shrubs up to four feet in height can be found in intermediate stage areas, while early stage shrubs are rarely greater than two feet in height. Organic material and annual grasses are much less common in intermediate areas and are almost absent in early stages. Scale-broom (*Lepidospartum squamatum*), considered to be an indicator species of alluvial scrub communities, is present in most alluvial scrub communities.

Riversidian Alluvial Fan Sage Scrub is present on the northeast portion if the Survey Area. Plant species found in the Survey Area include scale-broom, California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), deerweed (*Lotus scoparius*), our Lord's candle (*Yucca whipplei*), and coastal prickly pear (*Opuntia littoralis*).

Other Communities

Ephemeral Stream

An ephemeral stream has flowing water for a short duration after precipitation events in a representative year. The main source of water flow in an ephemeral stream is runoff from rainfall. Ephemeral stream beds are located above the water table year-round.

Ephemeral Pond

An ephemeral pond holds water for a short duration after precipitation events in a representative year. The source of water flow in an ephemeral pond is from rainfall.

Disturbed

Disturbed areas are those areas that are either devoid of vegetation (cleared or graded), such as dirt roads, or those areas that have a high percentage of non-native weedy species (i.e., greater than 25 percent of the species cover). Disturbed areas are present along the boundaries of the work area and within the watershed. Maintenance roads exist on the east and west sides of the reservoir and pedestrian/horseback riding trails exist on the west side and within the reservoir.

Ornamental Landscaping

Ornamental Landscaping includes areas where the vegetation is dominated by nonnative horticultural plants (Gray and Bramlet 1992). Typically, the species composition consists of introduced trees, shrubs, flowers, and turf grass.

Several areas within the Survey Area have Ornamental Landscaping. Ornamental pine trees (*Pinus* spp.) are located directly west of the dam wall and in the staging area located west of the church parking lot. The church grounds are landscaped with ornamental herbs, shrubs, and trees. On the sloped areas outside of the reservoir as well as within the reservoir, ornamental gum trees (*Eucalyptus* spp.) exist in coast live oak woodland and black willow series communities.

Poison Hemlock Series

Poison Hemlock Series is a vegetation community dominated by the herbaceous weedy species poison hemlock. This biennial plant typically grows up to 10 feet in height and occurs in moist, especially

disturbed places at elevations generally less than feet 3,280 (Hickman 1993). Poison Hemlock Series is present within the watershed near the center of the Survey Area.

Peppergrass Series

Peppergrass Series is a vegetation community dominated by the herbaceous weedy species peppergrass (*Lepidium latifolium*). Peppergrass Series is present within the watershed near the center of the Survey Area.

3.3.1.3 Sensitive Plant Species

The following is a general discussion of the sensitive plants for which suitable habitat is present onsite. Although these species were not observed during the focused plant surveys and are considered absent from the Survey Area, this discussion provides a rationale for why surveys were initially required.

- Nevin's barberry (*Berberis nevinii*)

Nevin's barberry is a federally and state-listed threatened species and a CNPS List 1B.1 species. This perennial evergreen shrub flowers between March and June in chaparral, coastal scrub, cismontane woodlands, and riparian scrub in sandy/gravelly soils. This species occurs at elevations between 900 to 2,705 feet amsl. The known range of this species exists in Los Angeles, Riverside, San Bernardino, and San Diego counties in California. Suitable habitat is present onsite within the watershed and in upland coastal and alluvial fan communities.

- Plummer's mariposa lily (*Calochortus plummerae*)

Plummer's mariposa lily is a CNPS List 1B.2 species. This perennial, bulbiferous herb flowers between May and July in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grasslands. This species occurs at elevations between 325 to 5,580 feet amsl. The known range of this species exists in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties in California. Suitable habitat is present onsite in Coastal and Alluvial Fan Sage Scrub communities in the understory of the Coast Live Oak Woodland community.

- Parry's spineflower (*Chorizanthe parryi* var. *parryi*)

Parry's spineflower is a CNPS List 1B.1 species. This annual herb flowers between April and June in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands. This species occurs at elevations between 900 to 4,000 feet amsl. The known range of this species exists in Los Angeles, Riverside, and San Bernardino counties in California. Suitable habitat is present onsite in Coastal and Alluvial Fan Sage Scrub communities and in the understory of the Coast Live Oak Woodland community.

- slender-horned spineflower (*Dodecahema leptoceras*)

Slender-horned spineflower is a federal and state-listed endangered species and a CNPS List 1B.1 species. This annual herb flowers between April and June in chaparral, cismontane woodlands, and coastal scrub habitats. This species occurs at elevations between 655 to 2,495 feet amsl. The known range of this species exists in Los Angeles, Riverside, and San Bernardino counties in California. Suitable habitat is present onsite in Coastal and Alluvial Fan Sage Scrub communities.

- mesa horkelia (*Horkelia cuneata* ssp. *puberula*)

Mesa horkelia is a CNPSList 1B.1 species. This perennial herb flowers between February and September in chaparral, cismontane woodland, and coastal scrub communities. This species occurs at elevations between 225 to 2,660 feet amsl. The known range of this species exists in Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, and Ventura counties in California. Suitable habitat is present onsite in Coastal and Alluvial Fan Sage Scrub communities.

- white rabbit-tobacco (*Pseudognaphalium leucocephalum*)

White rabbit-tobacco is a CNPS List 2.2 species. This perennial herb flowers between July and December in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. This species occurs at elevations between sea level and 6,900 feet amsl. The known range of this species exists in Los Angeles, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura counties in California, as well as into Arizona, Baja California, New Mexico, Sonora - Mexico, and Texas.

- Parish's gooseberry (*Ribes divaricatum* var. *parishii*)

Parish's gooseberry is a CNPS List 1A species. This perennial, deciduous shrub flowers between February and April typically in Riparian Woodland habitat. This species occurs at elevations between 210 to 985 feet amsl. The known range of this species exists in Los Angeles and San Bernardino counties in California. Suitable habitat is present onsite within the Black Willow Series of the Survey Area. No recent historical populations have been recorded within the vicinity of the site.

- Greata's aster (*Symphyotrichum greatae*)

Greata's aster is a CNPS List 1B.3 species. This perennial, rhizomatous herb flowers between June and October in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland. This species occurs at elevations between 980 to 6,595 feet amsl. The known range of this species exists in Los Angeles, San Bernardino, and Ventura counties in California. Suitable habitat is present onsite in the Black Willow Series community.

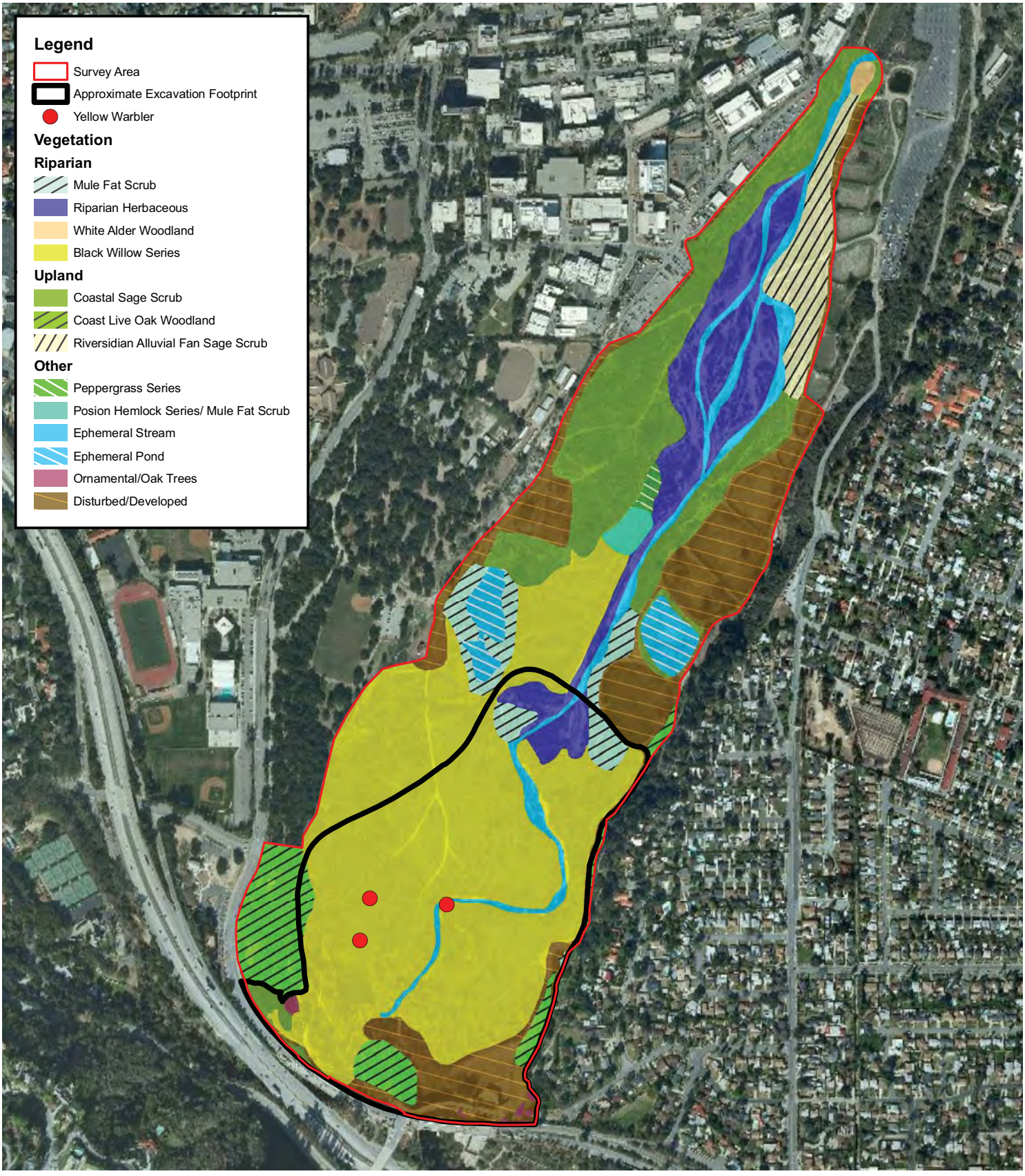


Figure 3
Biological Resources Map

Chambers Group Inc.

3.3.2 Wildlife

3.3.2.1 General

Wildlife species observed or detected during the site survey were characteristic of the existing site conditions. A full list of the wildlife species detected within the Survey Area is included in Appendix B.

Birds

Twenty-seven bird species were observed/detected in the Survey Area during the reconnaissance level survey. Species included California quail (*Callipepla californica),* mourning dove (*Zenaida macroura*), Allen's hummingbird (*Selasphorus sasin*)*,* acorn woodpecker (*Melanerpes formicivorus*)*,* northern rough-winged swallow *(Stelgidopteryx serripennis*)*,* common raven (*Corvus corax*), European starling (*Sturnus vulgaris*), common yellowthroat (*Geothlypis trichas*), black-headed grosbeak *(Pheucticus melanocephalus*), and housefinch *(Carpodacus mexicanus).*

Mammals

Eight mammal species were observed or detected in the Survey Area during the survey. Species included the Virginia opossum (Didelphis virginiana), western gray squirrel (*Sciurus griseus*), domestic dog (*Canis familiaris*), striped skunk (*Mephitis mephitis*), and bobcat (*Lynx rufus*).

3.3.2.2 Sensitive Wildlife Species

Three sensitive wildlife species have a moderate to high potential to occur in the Survey Area. One species, least Bell's vireo, is a federally- and state-listed endangered species that has a moderate potential to occur on the site. Two species, western pond turtle and coast range newt, are California species of concern and have a moderate or high potential to occur on the site. One species, yellow warbler, is a California species of concern when nesting and was present on the site during the reconnaissance survey. A two-striped garter snake was observed dead (run over by a vehicle) on the dirt road leading to the spillway.

- Least Bell's Vireo (*Vireo bellii pusillus*) - FE, SE

The least Bell's vireo (nesting) is a federally- and state-listed endangered subspecies of the Bell's vireo. The breeding range of the species extends from North Dakota to Indiana, south through Arkansas and Texas, and west to southern New Mexico, Arizona, California, and northern Mexico; however, the least Bell's vireo subspecies is restricted to coastal California and Baja California, Mexico, and a few inland populations. Its winter range extends along the Pacific coast from northern Mexico south to northern Nicaragua. It is a small, gray songbird with two faint wing bars and a faint eye ring and is whiter below. This species prefers to nest in low, dense, scrubby vegetation in early successional areas and is particularly dependent on corridors of habitat along rivers and streams. Habitats may include willow woodlands and dense mule fat, scrub oak, coastal chaparral, and mesquite patches with dense early successional understories. It builds a suspended cup nest about 0.5 to 2.0 meters above the ground and, on average, lays four eggs. It may produce two broods per season. On the breeding grounds, the least Bell's vireo feeds primarily on insects and small spiders that it gleans from twigs and leaves. The two major factors in the decline of least Bell's vireo populations are loss of habitat and nest parasitism by the brown headed-cowbird (*Molothrus ater*). Habitat loss and degradation, especially along streams and rivers due to development, agriculture, flood-control projects, logging operations, and intensive

cattle grazing practices, are the greatest threats to the continued existence of the least Bell's vireo. Overgrazing has been estimated to have reduced nesting sites by 50 percent in some areas, and it has contributed to an increase in non-native invasive plant species that do not typically support the breeding of this species.

Cowbird parasitism is also an important factor in population declines. The cowbird lays its egg in the nest of an unsuspecting vireo, and the vireo may then raise the cowbird chick as its own. The cowbird egg hatches earlier than the vireo eggs, and the chick then grows much larger in less time, eventually outcompeting the vireo chicks and causing nest failure. Fragmentation of habitat also increases cowbird parasitism by artificially creating favored habitats of cowbirds; and it isolates small, fringe vireo populations. In turn these populations are more susceptible to localized extirpations which contribute to large-scale range reductions. Domestic and feral cats are also a significant predatory force in some areas. Despite historic population losses, recent trends indicate that populations are on the rise and that the least Bell's vireo is returning to parts of its former range as well as colonizing some new areas.

Habitat for the least Bell's vireo occurs in the Survey Area, within the reservoir, in Black Willow Series and Mule Fat Scrub vegetation communities. Historic records do not exist within the *Pasadena*, California 7.5-minute topographic quadrangle, however, known occurrences do exist for this species in the San Gabriel Mountains, Los Angeles County. Therefore, this species has a moderate potential to occur on the Project site.

- Coast Range Newt (*Taricha torosa torosa*) - CSC

The coast range newt is a California Species of Concern found in terrestrial habitats such as grasslands, woodlands, and forests. Within these habitat types, this species uses pools, ponds, reservoirs, and slow moving streams as breeding sites. Its range includes most of coastal California, and it may be found up to 7,800 feet in elevation. It has a light brown dorsum, reddish-orange or yellow venter, large eyes, smooth to rough skin, and may exceed seven inches in total length. Breeding males have flattened tails, dark skin on the undersides of the feet, and smooth skin. Its diet includes invertebrates such as earthworms, slugs, sowbugs, snails, and larval insects. This species is threatened by habitat loss and alteration of hydrological systems during the breeding season.

Habitat for the coast range newt occurs seasonally within the Survey Area. The Arroyo Seco watershed is a slow moving seasonal stream. Retention basins, one holding water at the time of the survey (most likely from rain), exist on the east side of the stream, and a seasonal pond, also filled with rain water, exists on the west side of the stream. The stream, basins, and pond are all potential breeding habitat for this species. A recent historic occurrence (2003) exists for this species in the Arroyo Seco watershed less than 0.5 mile upstream of the Survey Area. Therefore, this species has a high potential to occur in the Survey Area.

- Southwestern Pond Turtle (*Clemmys marmorata pallida*) - CSC

This species is a California Species of Concern. This species occurs along the west coast of North America from Baja California up to San Francisco Bay and from sea level to 5,900 feet in elevation (California Reptiles and Amphibians 2009). It inhabits permanent or nearly permanent bodies of water in many habitat types including ponds, marshes, rivers, and streams that typically have a rocky or muddy bottom and extensive aquatic vegetation along water body margins (California Reptiles and Amphibians 2009). The southwestern pond turtle requires basking sites such as partially submerged logs, vegetation mats, or open mud banks. This species occurs in a variety of habitat types including woodland,

grassland, and open forest (California Reptiles and Amphibians 2009). Although this species is considered aquatic, some spend a lot of time on land (Bury and Germano 2008). The top of the shell is dark brown or yellow-olive and may have dark streaks (Bury and Germano 2008). Pond turtles are diurnal, but will quickly slide into water when they feel threatened. Most activity takes place from February to November. They hibernate under water in mud and will estivate during dry summers in soft mud, leaf litter, or wood rat nests (California Reptiles and Amphibians 2009). If water temperatures are right, this species may be active year-long (Bury and Germano 2008). Pond turtles mate in April and May and nest between April and August (California Reptiles and Amphibians 2009). Hatchlings emerge in early fall. Pond turtles feed on aquatic plants, invertebrates, worms, frog and salamander eggs and larvae, crayfish, carrion, and occasionally frogs and fish (California Reptiles and Amphibians 2009). Habitat destruction is the primary threat to this species. Pond turtles are found to occur in dams, although the habitat quality is low. Dams cause cooler water temperatures, fast flows below the dams, and human disturbance due to fishing in reservoirs behind the dams. Reservoirs also tend to have decreased vegetation cover, which decreases invertebrates (Bury and Germano 2008).

Habitat for the southwestern pond turtle occurs seasonally within the Survey Area. The Arroyo Seco watershed is a slow moving seasonal stream. Retention basins, one holding water at the time of the survey (most likely from rain), exist on the east side of the stream. A pond filled with rain water, containing submerged logs, exists on the west side of the stream. The stream, basins and pond are all potential breeding habitat for this species. A historic occurrence (1971, less than 0.25 mile upstream) exists for this species in the Arroyo Seco watershed less than five miles upstream of the Survey Area. Therefore, this species has a moderate potential to occur in the Survey Area.

- Yellow Warbler (*Dendroica petechia brewsteri*) - CSC

The yellow warbler (nesting) is a California Species of Concern. Its breeding range includes most of North America from northern Alaska and northern Canada to the southern U.S. and Mexico. Wintering birds occur from Mexico to Peru. Breeding habitats include wet areas, such as riparian woodlands, orchards, gardens, swamp edges, and willow thickets. Most breeding habitats generally contain medium to high-density tree and shrub species with ample early successional understories. In migration, yellow warblers may occur in other habitats, including early seral riparian habitats. Its plumage is more extensively yellow than other North American wood-warblers and it is also unique in having yellow on the inner webs of its tail feathers (except middle pair). Males show rusty streaking on the breast. Yellow warblers are almost entirely insectivorous, but they also eat a few berries. Populations are in decline in California due to habitat loss, grazing of riparian understories, and brood parasitism by the brown-headed cowbird.

The yellow warbler was observed in the Survey Area during the biological reconnaissance survey, in riparian habitat along the Arroyo Seco stream. This species is considered present within the Survey Area.

- Two-striped Garter Snake

The two-striped garter snake is a California Species of Concern. It is found in Salinas in Monterey County, south along the coast, into the Traverse Ranges in southern California, into Victorville, south to the Peninsular Ranges, and south to Baja California (California Reptiles and Amphibians 2009). The two-striped garter snake is found in or near permanent and intermittent freshwater habitats, including streams, rivers, ponds, and small lakes from sea level to around 8,000 feet. Oak woodlands, brushlands, sparse coniferous forests, and riparian forests may surround its freshwater habitat. It is recognized by its lack of a mid-dorsal stripe, and its coloration is usually olive or brownish above and dull yellow to

orange-red or salmon below. Intergrading color morphs are common. This highly aquatic snake is most active at dusk or at night, but it may also forage by day (California Reptiles and Amphibians 2009). Its diet includes tadpoles, toads, frogs, small fish, earthworms, California newt (*Taricha torosa torosa*) larvae, and aquatic eggs. The two-striped garter snake is a live-bearing species that gives birth to up to 36 young at a time. Loss of wetland habitats have contributed to a reduction in the range of this snake.

A two-striped garter snake was observed during the biological reconnaissance survey. The deceased snake was observed on the dirt road leading down to the spillway of the reservoir. This species is considered present within the Survey Area.

3.4. SENSITIVE SPECIES FOCUSED SURVEYS

3.4.1 Focused Plant Surveys

Based on the reconnaissance-level and focused plant surveys performed by Chambers Group, 246 plant species have been documented within the Survey Area (Appendix A).

The focused survey for the eight species below was negative. **No federal or state-listed as threatened or endangered or otherwise sensitive species were observed onsite.** The following species, which would have been flowering or conspicuous at the time of the focused plant survey, are therefore considered **absent** from the Survey Area:

- Nevin's barberry (*Berberis nevinii*) – **FE**, **SE**, CNPS List 1B.1;
- Plummer's mariposa lily (*Calochortus plummerae*) – CNPS List 1B.2;
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) – CNPS List 1B.1;
- slender-horned spineflower (*Dodecahema leptoceras*) – **FE**, **SE**, CNPS List 1B.1;
- mesa horkelia (*Horkelia cuneata* ssp. *puberula*) – CNPS List 1B.1; and
- white rabbit-tobacco (*Pseudognaphalium leucocephalum*) – CNPS List 2.2;
- Parish's gooseberry (*Ribes divaricatum* var. *parishii*) – CNPS List 1A; and
- Greata's aster (*Symphyotrichum greatae*) – CNPS List 1B.3.

3.4.2 Focused Least Bell's Vireo Surveys

Chambers Group biologists conducted focused presence/absence surveys for least Bell's vireo on May 27; July 7, 15, 22, and 29; and August 5, 12, and 19. Vireo surveys were performed according to modified USFWS guidelines (USFWS 2001). Constraints prevented surveys from being conducted early in the season; therefore, in order to complete all surveys during the 2010 breeding season, surveys were conducted from May through August approximately seven days apart. Least Bell's vireo was **not observed** in the Survey Area; however, since a large amount of suitable nesting habitat occurs within the Mule Fat Scrub and Black Willow Series communities in the Survey Area, this species has moderate potential to occur.

SECTION 4.0 – CONCLUSIONS AND RECOMMENDATIONS

4.1. RIPARIAN/RIVERINE AND WETLAND

Pursuant to Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged and/or fill material into waters of the United States. Waters of the United States include navigable waterways and wetlands adjacent to navigable waterways, non-navigable waterways, and wetlands adjacent to non-navigable waters that are contiguous with navigable waterways.

The State of California regulates discharge of dredged and/or fill material into waters of the State pursuant to Section 401 of the Clean Water Act. The local Regional Water Quality Control Boards assert jurisdiction to all those areas defined as jurisdictional under Section 404 of the Clean Water Act, plus isolated waters. As a State agency, the State Water Resources Quality Control Board (SWRQCB) regulates all waters of the State, including isolated wetlands as defined Under the California Porter-Cologne Water Quality Control Act (Porter Cologne; Ca. Water Code, Div. 7, §13000 et seq.).

Jurisdictional authority of the CDFG over wetland areas is established under Section 1600 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream, or lake without notifying the CDFG, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement.

The Devil's Gate Reservoir Project site is located within the Arroyo Seco watershed, a blue-line stream, which contains riparian vegetation and flowing water. Because sediment removal is proposed to take place, a formal delineation will be required prior to any ground disturbing activities.

4.2. SENSITIVE SPECIES

4.2.1 Sensitive Plants

Of the 14 sensitive plant species identified in the literature review, 8 species, Nevin's barberry, Plummer's mariposa lily, Parry's spineflower, slender-horned spineflower, mesa horkelia, white rabbit-tobacco, Parish's gooseberry, and Greata's aster, have suitable habitat present onsite. Two of the sensitive plants from the literature search, Nevin's barberry and slender horned spineflower, are federal and state-listed as endangered species. Agencies require focused surveys for any federal-and/or state-listed species with any kind of potential to occur onsite when the species is in bloom, to ensure it is both evident and identifiable at the time of the survey. Seven of the sensitive species have an overlapping blooming period in June. Parish's gooseberry blooms from February to April but is a shrub that can be detected outside of its blooming period. One species, white rabbit-tobacco, blooms from August to November, with uncommon flowering months in July and December.

Two focused plant surveys were conducted in the Survey Area to capture the blooming periods for all sensitive plant species with a potential to occur. The first focused plant survey was conducted from June 28 through June 30, 2010. The second focused survey was conducted on August 24, 2010. No listed or otherwise sensitive plant species were detected during either of the focused surveys conducted in the Survey Area. Therefore, the eight plant species with a potential to occur are considered **absent** from the Survey Area at this time.

4.2.2 Sensitive Wildlife

Of the 14 sensitive wildlife species identified in the literature review, 5 sensitive wildlife species were either observed in the Survey Area or have a moderate or high potential to occur in the Survey Area due to habitat onsite and/or nearby historic occurrences.

The least Bell's vireo is a federal- and state- endangered species. Because habitat for this species occurs in the Survey Area and occurrences are known in other areas of the San Gabriel Mountains, focused protocol-level least Bell's vireo surveys were conducted from May through August 2010 following modified USFWS *Least Bell's Vireo Survey Guidelines* (Jan. 19, 2001). **No least Bell's vireos were observed.**

The yellow warbler **was observed** in the Survey Area in riparian habitat during the reconnaissance survey and during subsequent least Bell's vireo surveys. Although specific breeding statuses were not obtained during the surveys, due to time constraints, this species likely migrates through the area. The yellow warbler is a California species of concern, and focused surveys will not be required for this species. Locations of observations of this species are located in the Biological Resources Map (Figure 3).

The southwestern pond turtle, coast range newt, and two-striped garter snake are California species of concern. The two-striped garter snake **was observed** within the Survey Area during the biological reconnaissance survey. The southwestern pond turtle and coast range newts were **not observed** within the Survey Area. In order to minimize impacts to these three California Species of Concern, a biological monitor should be present during construction. If special status species are observed in harms way the monitoring biologist will implement protection measures; these measures may include re-directing the species, construction exclusionary devices (e.g. fencing), or capture/relocation outside of the work area. Species relocation techniques and locations will require approval from CDFG.

In addition, ground disturbing activities should be conducted during the non-breeding season (September 1 to February 14) in order to limit impacts to nesting birds. If ground disturbing activities need to take place during breeding season (February 15 through August 31), in order to remain in compliance with the Migratory Bird Treaty Act, a pre-construction nesting bird survey(s) will be required. The last survey day should be conducted a minimum of three days prior to the start of work.

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APPENDIX A – PLANT SPECIES OBSERVED ONSITE

Comprehensive List of Plant Species Observed
In the Devil's Gate Reservoir Survey Area

Scientific Name	Common Name
FERNS AND FERN ALLIES	
PTERIDACEAE	**BRAKE FAMILY**
Pellaea andromedifolia	coffee fern
Pentagramma triangularis	goldenback fern
GYMNOSPERMS	
CUPRESSACEAE	**CYPRESS FAMILY**
Cedrus deodara	deodar cedar
Chamaecyparis sp.*	false cypress
Juniperus sp.*	juniper
PINACEAE	**PINE FAMILY**
*Pinus halepensis**	Aleppo pine
ANGIOSPERMS (DICOTYLEDONS)	
ACERACEAE	**MAPLE FAMILY**
Acer negundo var. *californicum*	California box-elder
AMARANTHACEAE	**AMARANTH FAMILY**
*Amaranthus retroflexus**	rough pigweed
ANACARDIACEAE	**SUMAC OR CASHEW FAMILY**
Malosma laurina	laurel sumac
Rhus ovata	sugar bush
Rhus trilobata	skunkbrush
Toxicodendron diversilobum	poison oak
APIACEAE	**CARROT FAMILY**
*Conium maculatum**	poison hemlock
APOCYNACEAE	**DOGBANE FAMILY**
*Vinca major**	greater periwinkle
ASCLEPIADACEAE	**MILKWEED FAMILY**
Asclepias californica	California milkweed
ASTERACEAE	**SUNFLOWER FAMILY**
Acourtia microcephala	sacapellote
*Ageratina adenophora**	eupatory
Ambrosia acanthicarpa	annual bur-sage
*Anthemis cotula**	mayweed
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Artemisia dracunculus	tarragon
Baccharis pilularis	coyote brush
Baccharis pilularis (cultivar)*	coyote brush
Baccharis salicifolia	mule fat
Brickellia californica	California brickellbush
*Carduus pycnocephalus**	Italian thistle
*Centaurea melitensis**	tocalote

Scientific Name	Common Name
Chaenactis artemisiaefolia	white pincushion
Chaenactis glabriuscula	yellow pincushion
Cirsium occidentale var. *californicum*	cobweb thistle
*Cirsium vulgare**	bull thistle
Conyza canadensis	horseweed
*Cotula australis**	Australian brass-buttons
Eclipta prostrate	false daisy
Eriophyllum confertiflorum	golden yarrow
*Filago gallica**	fluffweed
Gnaphalium bicolor	bicolored cudweed
Gnaphalium californicum	California everlasting
Gnaphalium canescens	felty everlasting
*Gnaphalium luteo-album**	white cudweed
Helianthus annuus	common sunflower
Heterotheca grandiflora	telegraph weed
Heterotheca villosa	hairy false golden-aster
*Lactuca serriola**	prickly lettuce
Lepidospartum squamatum	scale-broom
Malacothrix saxatilis	cliff malacothrix
Rafinesquia californica	California chicory
Senecio flaccidus	shrubby butterweed
Sonchus asper ssp. *asper**	prickly sow thistle
*Sonchus oleraceus**	common sow thistle
Stylocline gnaphaloides	everlasting nest straw
*Taraxacum officinale**	common dandelion
Tetradymia canescens	spineless horsebrush
Xanthium strumarium	cocklebur
BETULACEAE	**BIRCH FAMILY**
Alnus rhombifolia	white alder
BIGNONIACEAE	**BIGNONIA FAMILY**
*Catalpa bignonioides**	southern catalpa
BORAGINACEAE	**BORAGE FAMILY**
Cryptantha intermedia	common forget-me-not
Heliotropium curassavicum	salt heliotrope
Turricula parryi	poodle dog bush
BRASSICACEAE	**MUSTARD FAMILY**
*Capsella bursa-pastoris**	shepherd's-purse
*Coronopus didymus**	wart cress
Descurainia pinnata	western tansy-mustard
*Hirschfeldia incana**	shortpod mustard
*Lepidium latifolium**	peppergrass
Lepidium sp.	peppergrass
*Lobularia maritima**	sweet-alyssum

Scientific Name	Common Name
*Raphanus sativus**	radish
Rorippa nasturtium-aquaticum	water-cress
*Sisymbrium altissimum**	tumble mustard
*Sisymbrium irio**	London rocket
CACTACEAE	**CACTUS FAMILY**
Opuntia basilaris	beavertail cactus
*Opuntia ficus-indica**	Indian fig
Opuntia littoralis	coastal prickly pear
CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**
Sambucus mexicana	Mexican elderberry
CARYOPHYLLACEAE	**PINK FAMILY**
*Cerastium glomeratum**	mouse-ear chickweed
*Polycarpon tetraphyllum**	four-leaved allseed
*Spergularia bocconii**	Boccone's sandspurrey
*Stellaria media**	common chickweed
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
*Chenopodium album**	lamb's quarters
*Chenopodium ambrosioides**	Mexican tea
*Chenopodium pumilio**	clammy goosefoot
*Salsola tragus**	Russian thistle
CONVOLVULACEAE	**MORNING-GLORY FAMILY**
Calystegia macrostegia	western bindweed
CRASSULACEAE	**STONECROP FAMILY**
Dudleya lanceolata	lance-leaved dudleya
CUCURBITACEAE	**GOURD FAMILY**
*Cucurbita pepo**	pumpkin
Marah macrocarpus	wild cucumber
CUSCUTACEAE	**DODDER FAMILY**
Cuscuta californica	California dodder
ERICACEAE	**HEATH FAMILY**
Arctostaphylos sp.	manzanita
EUPHORBIACEAE	**SPURGE FAMILY**
*Chamaesyce maculata**	spotted spurge
Eremocarpus setigerus	dove weed
*Ricinus communis**	castor-bean
FABACEAE	**LEGUME FAMILY**
*Acacia baileyana**	mimosa acacia
*Acacia longifolia**	Sydney golden wattle
*Genista monspessulana**	French broom
Lotus purshianus var. *purshianus*	Spanish clover
Lotus scoparius	deerweed
Lotus sp.	lotus
Lotus strigosus	strigose lotus

Scientific Name	Common Name
Lupinus bicolor	miniature lupine
Lupinus excubitus ssp. *austromontanus*	grape soda lupine
Lupinus hirsutissimus	stinging lupine
Lupinus sp.	lupine
Lupinus sparsiflorus	Coulter's lupine
*Medicago polymorpha**	bur clover
*Melilotus indica**	sourclover
*Spartium junceum**	Spanish broom
Trifolium sp.	clover
FAGACEAE	**OAK FAMILY**
Quercus agrifolia	coast live oak
Quercus engelmannii	Engelmann oak
GENTIANACEAE	**GENTIAN FAMILY**
Centaurium venustum	canchalagua
GERANIACEAE	**GERANIUM FAMILY**
*Erodium brachycarpum**	long-beaked filaree
*Erodium cicutarium**	red-stemmed filaree
GROSSULARIACEAE	**GOOSEBERRY FAMILY**
Ribes aureum	golden currant
HYDROPHYLLACEAE	**WATERLEAF FAMILY**
Emmenanthe penduliflora	whispering bells
Eriodictyon crassifolium	thick-leaved yerba santa
Eriodictyon trichocalyx	hairy yerba santa
Eucrypta chrysanthemifolia	common eucrypta
Phacelia brachyloba	short-lobed phacelia
Phacelia cicutaria	caterpillar phacelia
Phacelia grandiflora	large-flowered phacelia
Phacelia minor	wild canterbury-bell
Phacelia ramosissima	branching phacelia
JUGLANDACEAE	**WALNUT FAMILY**
Juglans californica	California black walnut
LAMIACEAE	**MINT FAMILY**
*Lamium amplexicaule**	henbit
*Marrubium vulgare**	horehound
Salvia apiana	white sage
Salvia columbariae	chia
Salvia mellifera	black sage
Trichostema lanatum	woolly bluecurls
LOASACEAE	**LOASA FAMILY**
Mentzelia micrantha	small-flowered stick-leaf
LYTHRACEAE	**LOOSESTRIFE FAMILY**
Lythrum californicum	California loosestrife

Scientific Name	Common Name
MALVACEAE	**MALLOW FAMILY**
*Malva parviflora**	cheeseweed
MORACEAE	**MULBERRY FAMILY**
*Ficus carica**	edible fig
MYRTACEAE	**MYRTLE FAMILY**
*Callistemon citrinus**	crimson bottlebrush
*Eucalyptus globulus**	blue gum
*Syzygium paniculatum**	magenta cherry
OLEACEAE	**OLIVE FAMILY**
Fraxinus velutina	velvet ash
*Olea europaea**	olive
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Camissonia bistorta	California suncup
Camissonia californica	California evening primrose
Camissonia confusa	San Bernardino suncup
Camissonia hirtella	suncup
Clarkia purpurea ssp. *quadrivulnera*	four spot
Epilobium ciliatum	California cottonweed
Gayophytum sp.	groundsmoke
Oenothera elata ssp. hookeri	Hooker's evening primrose
PAPAVERACEAE	**POPPY FAMILY**
Argemone munita	prickly poppy
PASSIFLORACEAE	**PASSION-FLOWER FAMILY**
*Passifloraceae caerulea**	common passion flower
PLANTAGINACEAE	**PLANTAIN FAMILY**
*Plantago indica**	Indian plantain
*Plantago lanceolata**	English plantain
PLATANACEAE	**SYCAMORE FAMILY**
Platanus racemosa	western sycamore
POLEMONIACEAE	**PHLOX FAMILY**
Allophyllum gilioides	false gilia
Eriastrum sapphirinum	sapphire eriastrum
Gilia capitata	blue field gilia
POLYGONACEAE	**BUCKWHEAT FAMILY**
Eriogonum elongatum	long-stemmed buckwheat
Eriogonum fasciculatum	California buckwheat
Eriogonum roseum	wand buckwheat
*Polygonum arenastrum**	common knotweed
Polygonum lapathifolium	willow-weed
Pterostegia drymarioides	California thread-stem
*Rumex conglomeratus**	dock
*Rumex crispus**	curly dock

Scientific Name	Common Name
PORTULACACEAE	**PURSLANE FAMILY**
*Portulaca oleracea**	common purslane
PRIMULACEAE	**PRIMROSE FAMILY**
*Anagallis arvensis**	scarlet pimpernel
RANUNCULACEAE	**BUTTERCUP FAMILY**
Clematis pauciflora	ropevine
RHAMNACEAE	**BUCKTHORN FAMILY**
Ceanothus crassifolius	hoary leaf ceanothus
Ceanothus papillosus	wart-leafed ceanothus
Rhamnus californica	California coffeeberry
Rhamnus crocea	spiny redberry
Rhamnus ilicifolia	holly-leaf redberry
ROSACEAE	**ROSE FAMILY**
Adenostoma fasciculatum	chamise
Heteromeles arbutifolia	toyon
*Prunus persica**	peach
Prunus sp.	cherry
Rosa californica	California wild rose
*Rubus discolor**	Himalayan blackberry
RUBIACEAE	**MADDER FAMILY**
Galium angustifolium	narrow-leaved bedstraw
SALICACEAE	**WILLOW FAMILY**
Populus fremontii	Fremont cottonwood
Populus balsamifera ssp. *trichocarpa*	black cottonwood
Salix gooddingii	black willow
Salix laevigata	red willow
Salix lasiolepis	arroyo willow
Salix lucida ssp. *caudata*	shining willow
SAURURACEAE	**LIZARD'S-TAIL FAMILY**
Anemopsis californica	yerba mansa
SAXIFRAGACEAE	**SAXIFRAGE FAMILY**
Boykinia rotudifolia	round-leaved boykinia
SCROPHULARIACEAE	**FIGWORT FAMILY**
Antirrhinum coulterianum	white snapdragon
*Antirrhinum multiflorum**	multiflowered snapdragon
Cordylanthus rigidus ssp. *setigerus*	bird's-beak
Keckiella cordifolia	heart leaved keckiella
Mimulus aurantiacus var. *pubescens*	orange bush monkey-flower
Mimulus brevipes	wide-throated monkey-flower
Mimulus cardinalis	scarlet monkey-flower
Mimulus floribundus	many-flowered monkey-flower
Mimulus pilosus	mimenanthe
Mimulus guttatus	common monkey-flower

Scientific Name	Common Name
Scrophularia californica	California figwort
*Verbascum thapsus**	woolly mullein
*Verbascum virgatum**	wand mullein
*Veronica anagallis-aquatica**	water speedwell
SIMAROUBACEAE	**QUASSIA FAMILY**
*Ailanthus altissima**	tree of heaven
SOLANACEAE	**NIGHTSHADE FAMILY**
*Datura wrightii**	jimson weed
*Nicotiana glauca**	tree tobacco
Nicotiana quadrivalvis	Wallace's tobacco
Solanum sp.	nightshade
Solanum douglasii	Douglas' nightshade
*Solanum rostratum**	buffalo berry
Solanum xanti	chaparral nightshade
ULMACEAE	**ELM FAMILY**
*Ulmus parvifolia**	Chinese elm
VERBENACEAE	**VERVAIN FAMILY**
*Lantana montevidensis**	trailing lantana
*Verbena tenuisecta**	fineleaf verbena
VIOLACEAE	**VIOLET FAMILY**
Viola sp.*	violet
VITACEAE	**GRAPE FAMILY**
*Tetrastigma voinierianum**	lizard vine
ZYGOPHYLLACEAE	**CALTROP FAMILY**
*Tribulus terrestris**	puncture vine
ANGIOSPERMS (MONOCOTYLEDONS)	
AGAVACEAE	**AGAVE FAMILY**
Agave desertii (ornamental)*	agave
ARECACEAE	**PALM FAMILY**
*Archontophoenix cunninghamiana**	king palm
Phoenix sp.*	date palm
*Washingtonia robusta**	Mexican fan palm
Washingtonia sp.	fan palm
CYPERACEAE	**SEDGE FAMILY**
Cyperus eragrostis	tall cyperus
*Cyperus involucratus**	umbrella-plant
JUNCACEAE	**RUSH FAMILY**
Juncus xiphioides	iris-leaved rush
LILIACEAE	**LILY FAMILY**
*Yucca elephantipes**	giant yucca
Yucca whipplei	Our Lord's candle

Scientific Name	Common Name
POACEAE	**GRASS FAMILY**
*Agrostis stolonifera**	redtop
*Arundo donax**	giant reed
*Avena barbata**	slender wild oat
Bromus carinatus	California brome
*Bromus diandrus**	ripgut grass
*Bromus hordeaceus**	soft chess
Bromus madritensis ssp. *rubens**	foxtail chess
*Cynodon dactylon**	Bermuda grass
*Digitaria sanguinalis**	hairy crabgrass
Distichlis spicata	saltgrass
*Festuca arundinacea**	tall fescue
*Hordeum murinum**	glaucous foxtail barley
Melica imperfecta	coast range melic
Paspalum sp.*	dallis grass
*Pennisetum setaceum**	fountain grass
*Piptatherum miliaceum**	smilo grass
*Poa annua**	annual bluegrass
*Polypogon monspeliensis**	annual beard grass
*Schismus barbatus**	Mediterranean schismus
*Sorghum halepense**	Johnsongrass
*Vulpia myuros**	fescue
TYPHACEAE	**CATTAIL FAMILY**
Typha domingensis	slender cattail

** Indicates non-native species.*

APPENDIX B – WILDLIFE SPECIES OBSERVED/DETECTED ONSITE

Wildlife Species Observed/Detected During the Biological Reconnaissance Survey in the Devil's Gate Survey Area

Scientific Name	Common Name
CLASS AMPHIBIA	**AMPHIBIANS**
BUFONIDAE	**True Toads**
Bufo boreas	western toad
HYLIDAE	**Treefrogs**
Hyla cadaverina	California treefrog
CLASS REPTILIA	**REPTILES**
PHRYNOSOMATIDAE	**FENCE, ZEBRA-TAILED, EARLESS, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNY LIZARDS**
Uta stansburiana	Common side-blotch lizard
Sceloporus occidentalis	western fence lizard
TEIIDAE	**WHIPTAILS**
Aspidoscelis tigris	western whiptail
COLUBRIDAE	**COLUBRID SNAKES**
Thamnophis hammondii	two-striped garter snake
CLASS AVES	**BIRDS**
ANATIDAE	**DUCKS, GEESE, SWANS**
Anas platyrhynchos	mallard
ODONTOPHORIDAE	**NEW WORLD QUAIL**
Callipepla californica	California quail
ARDEIDAE	**HERONS, EGRETS**
Egretta thula	snowy egret
CARTHARTIDAE	**VULTURES**
Cathartes aura	turkey vulture
ACCIPTRIDAE	**HAWKS, EAGLES, HARRIERS**
Accipiter cooperii	Cooper's hawk
Buteo lineatus	red-shouldered hawk
Buteo jamaicensis	red-tailed hawk
FALCONIDAE	**FALCONS**
Falco sparverius	American kestrel
CHARADRIIDAE	**PLOVERS**
Charadrius vociferus	killdeer
COLUMBIDAE	**DOVES, PIGEONS**
Columba livia	rock pigeon
Zenaida macroura	mourning dove
PSITTACIDAE	**PARROTS, PARAKEETS, RELATIVES**
Amazona viridigenalis	red-crowned parrot
APODIDAE	**SWIFTS**

Scientific Name	Common Name
Aeronautes saxatalis	white-throated swift
TROCHILIDAE	**HUMMINGBIRDS**
Calypte anna	Anna's hummingbird
Selasphorus sasin	Allen's hummingbird
PICIDAE	**WOODPECKERS**
Melanerpes formicivorus	acorn woodpecker
Picoides pubescens	downy woodpecker
TYRANNIDAE	**TYRANT FLYCATCHERS**
Contopus sordidulus	western wood-pewee
Empidonax difficilis	pacific-slope flycatcher
Sayornis nigricans	black phoebe
Myiarchus cinerascens	ash-throated flycatcher
VIREONIDAE	**VIREOS**
Vireo huttoni	Hutton's vireo
HIRUNDINIDAE	**SWALLOWS**
Stelgidopteryx serripennis	northern rough-winged swallow
Hirundo rustica	barn swallow
CORVIDAE	**JAYS, CROWS, RAVENS**
Aphelocoma californica	western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
PARIDAE	**CHICKADEES**
Baeolophus inornatus	oak titmouse
AEGITHALIDAE	**BUSHTITS**
Psaltriparus minimus	bushtit
TROGLODYTIDAE	**WRENS**
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
SYLVIIDAE	**Gnatcatchers and Relatives**
Polioptila caerulea	blue-grey gnatcatcher
MIMIDAE	**MOCKINGBIRDS, THRASHERS**
Mimus polyglottos	northern mockingbird
STURNIDAE	**STARLINGS**
Sturnus vulgaris	European starling
PTILOGONATIDAE	**SILKY FLYCATCHERS**
Phainopepla nitens	phainopepla
PARULIDAE	**WOOD WARBLERS**
Vermivora celata	orange-crowned warbler
Dendroica petechia	yellow warbler
Geothlypis trichas	common yellowthroat

Scientific Name	Common Name
EMBERIZIDAE	**NEW WORLD SPARROWS, TOWHEES, REILATIVES**
Melospiza melodia	song sparrow
Pipilo crissalis	California towhee
Pipilo maculatus	spotted towhee
CARDINALIDAE	**CARDINALS, RELATIVES**
Pheucticus melanocephalus	black-headed grosbeak
ICTERIDAE	**BLACKBIRDS, GRACKLES, ORIOLES**
Agelaius phoeniceus	red-winged blackbird
Euphagus cyanocephalus	Brewer's blackbird
Molothrus ater	brown-headed cowbird
Icterus bullockii	Bullock's oriole
FRINGILLIDAE	**FINCHES**
Carduelis psaltria	lesser goldfinch
Carpodacus mexicanus	house finch
PASSERIDAE	**OLD WORLD SPARROWS**
Passer domesticus	house sparrow
ESTRILDIDAE	**WAXBILLS AND RELATIVES**
Lonchura punctulata	nutmeg mannikin
CLASS MAMMALIA	**MAMMALS**
DIDELPHIDAE	**NEW WORLD OPOSSUMS**
Didelphis virginiana	Virginia opossum
LEPORIDAE	**RABBITS, HARES**
Sylvilagus audubonii	desert cottontail
SCIURIDAE	**SQUIRRELS, CHIPMONKS, MARMOTS**
Sciurus griseus	western gray squirrel
Spermophilus beecheyi	California ground squirrel
CANIDAE	**CANINES, WOLVES, FOXES**
Canis familiaris	domestic dog
Canis latrans	coyote
Urocyon cinereoargenteus	grey fox
PROCYONIDAE	**RACCOONS**
Porocyon lotor	Raccoon
MUSTELIDAE	**WEASELS, SKUNKS, OTTERS**
Mephitis mephitis	striped skunk
FELIDAE	**FELINES**
Lynx rufus	bobcat
CERVIDAE	**DEER**
Odocoileus hemionus	mule deer
EQUIDAE	**HORSES, BURROS**
Equus caballus	horse

APPENDIX C – SITE PHOTOGRAPHS

APPENDIX C – SITE PHOTOGRAPHS

Photo 1: Photo taken looking northwest depicting the Arroyo Seco stream in the Devil's Gate Reservoir directly behind the dam wall. Scoured and Black Willow Series vegetation communities are within the reservoir along the ephemeral stream.

Photo 2: Photo depicts Riparian herbaceous community with Mulefat Scrub behind it and Oak Woodland on the slopes in the background.

Photo 3: Photo taken looking east depicting one of the many inactive retention basins within the reservoir and Survey Area. This was the only basin that contained water. The water in the basin was a result of rain water and is dry most of the year. The basin is surrounded by disturbed Upland vegetation.

Photo 4: Photo depicting disturbed areas and Coastal Sage Scrub communities. Residential areas border the reservoir on the east.

APPENDIX D 2– General Biological Resources & Presence/Absence Fish Surveys

February 13, 2013

Thomas Budinger
Water Resources Division
Los Angeles County Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803

Subject: REPORT OF FINDINGS FOR THE GENERAL BIOLOGICAL RESOURCE & PRESENCE/ABSENCE FISH SURVEYS, LOS ANGELES COUNTY, CALIFORNIA

Dear Mr. Budinger:

Chambers Group, Inc. (Chambers Group) was retained by the County of Los Angeles Department of Public Works (LACDPW) to conduct a literature review and reconnaissance-level biological surveys services. These services are in support of the Environmental Impact Report (EIR) analysis (in progress) for the Devil's Gate Dam and Reservoir Post Fire Sediment Removal Project in the City of Pasadena, Los Angeles County as requested by the LACDPW. This memo report describes potential impacts to biological resources under a proposed sluicing alternative for sediment removal. All sensitive species identified with a potential to occur on the Project site were included in the habitat assessment.

Project Background

In 2009, the Station Fire burned through more than 160,000 acres the Angeles National Forest in Los Angeles County. Approximately 68 percent of the 31.9 square mile Arroyo Seco Channel watershed tributary to the Devil's Gate Dam and Reservoir was burned during this event. Due to the denuding of this large natural tributary area, large sediment loads (in excess of 1 million cubic yards) were deposited within the reservoir area during the subsequent storm seasons.

LACDPW is currently preparing an Environmental Impact Report for a proposed sediment removal project at Devil's Gate Dam to regain flood control capacity. The potential associated impacts to biological resources downstream of the dam (Project) due to a sluicing alternative for sediment removal is analyzed in this document. The Project site for this biological report includes the Arroyo Seco Channel, which flows from Devil's Gate Dam, and the Los Angeles River where the Arroyo Seco Channel enters the river then downstream to the Pacific Ocean.

Sluicing Alternative

Sluicing activities would emulate the natural movement of sediment to downstream sections of the channel. The purpose of a sluice operation is to remove accumulated sediment from the reservoir using flowing water as the primary removal method. A FAST operation is a type of sluicing as it also uses storm runoffs to flush the sediment out of the reservoir. FASTing works effectively when sediment deposition behind the dam is minimal. A FAST operation, if performed regularly, can be used to prevent sediment accumulation in

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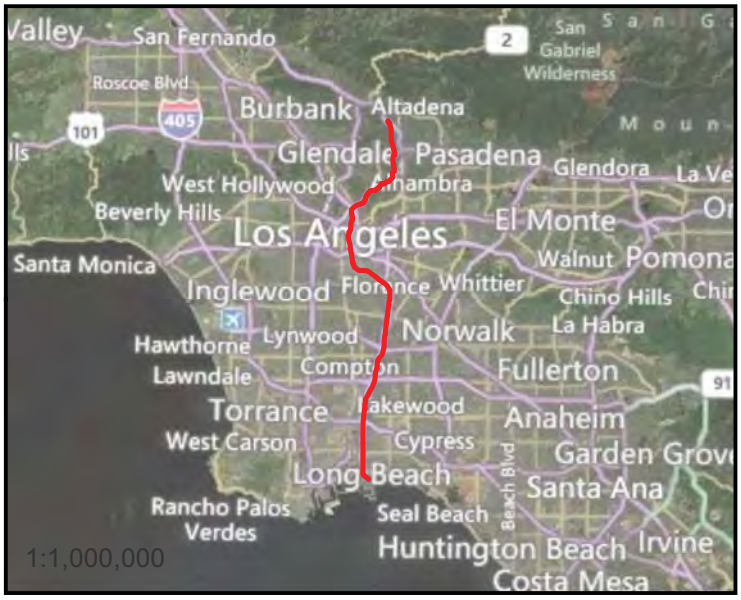
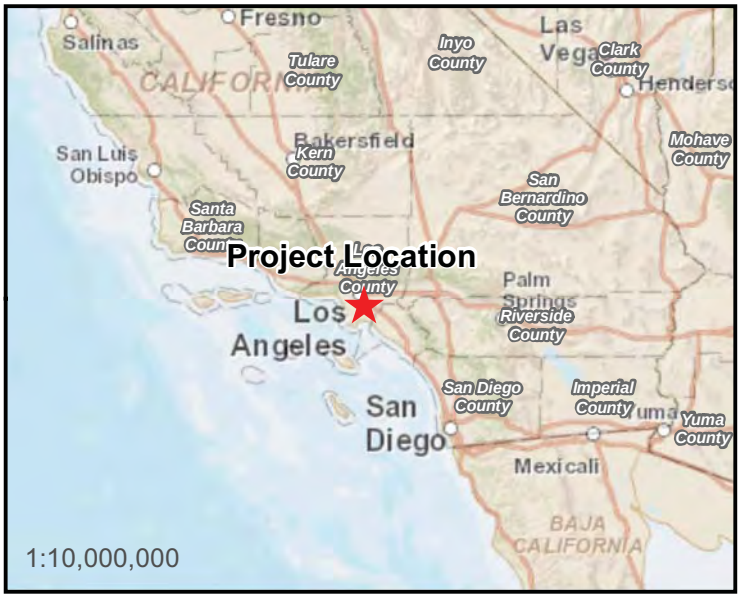
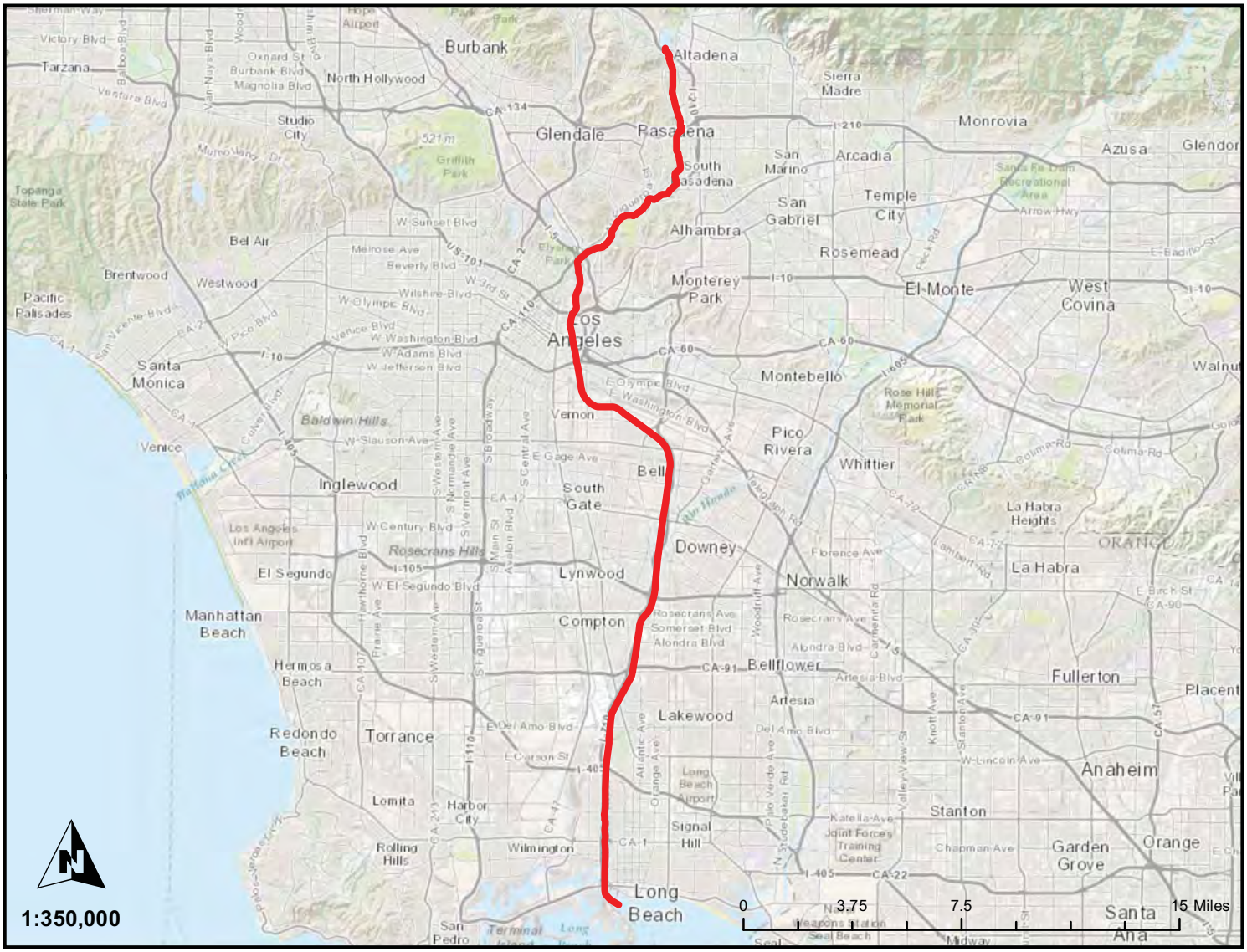
the reservoir and thus help maintain its design capacity. A sluicing operation typically removes more sediment than a FAST operation due to the use of mechanical assistance during sluicing. Sluicing at Devil's Gate Dam and Reservoir would involve allowing water to transport sediment suspended in natural flows by mechanically agitating, or pushing the sediment into the flows with the aid of bulldozers, and opening the sluice gate to allow water and sediment to be discharged downstream. The amount of sediment that will be removed through sluicing or FAST operations is limited by the amount of storm runoff or the amount of water available to store.

Arroyo Seco Channel and Los Angeles River

The Arroyo Seco Channel is a Relatively Permanent Waterway (RPW) that flows from the Devil's Gate Dam in a southwest direction for approximately 9.5 miles before it confluences with the Los Angeles River. From the confluence, the Los Angeles River a Traditionally Navigable Waterway (TNW) then flows approximately 24.5 miles to the Pacific Ocean. Flash floods are common in the Arroyo Seco Channel and Los Angeles River, which naturally moves large amounts of sediments downstream. Natural rain events in the Arroyo Seco Channel region often produce very large flows in a short time period and return to normal within a few days of the storm. According to the inflow data from 2006 and 2007 at the Devil's Gate Dam, the average natural inflow of water ranges between 0 and 5 cubic feet per second (cfs). During small rain events, the water quickly rises to 6 to 8 cfs. Large rain events took place around five times per year during this span. In these storm events, flows would rise from 2 cfs to over 300 cfs in the span of one hour; the maximum flow observed during the two-year span produced a reading of 1,353.7 cfs on February 27, 2007. The Arroyo Seco Channel is often very narrow with stream widths less than 30 feet wide. When storm events occur, the water can rise several feet in narrow sections. This was confirmed during the field surveys where debris lines and destruction of vegetation was often found five feet off the ground.







Project Boundary

Figure 1

Devil's Gate Sediment Removal Project
Site Location and Vicinity Map

Version Date: 11/28/2012

CHAMBERS GROUP

Y:\Projects\20536 Devil's Gate Dam Downstream Bio Surveys\MXD\Figure 1 Site Location and Vicinity Map.mxd

METHODOLOGY

Literature Review

Prior to conducting the field surveys, existing documentation relevant to the Project site was reviewed. The most recent records of the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB 2012) and the California Native Plant Society's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPSEI 2012) were reviewed for the quadrangles containing and surrounding the Project site (i.e., *Pasadena, Los Angeles, South Gate, Long Beach* California USGS 7.5 minute quadrangles). The databases contains records of reported occurrences of federal- or state-listed as endangered or threatened species, proposed endangered or threatened species, former Federal Species of Concern (FSC), California Species of Special Concern (SSC), or otherwise sensitive species or habitats that may occur within or in the vicinity of the Project site.

Biological Resource and Presence/Absence Fish

Biological resource surveys were conducted on the Project site in order to identify any potential for sensitive species to occur and identify habitats that can support special status wildlife species. Based on the type of sluicing activities proposed, potential impacts would be relegated to in-stream environments, especially to fish species. Prior to the biological surveys, a desktop analysis was performed to identify sections of the Arroyo Seco Channel and Los Angeles River with potential suitable fish habitat. The surveys were targeted to locations with suitable fish habitat for the presence or absence of fish populations. Areas that were concrete lined only and did not provide cover/shelter or foraging opportunities for fish were not visually scanned for fish in the field. However, areas that were concrete lined but had sediment deposits or scattered vegetation was surveyed for fish populations. Potential suitable habitats for sensitive wildlife species were also identified; and were located in the same areas for potential fish habitat. The field surveys also included searches for sensitive avian species, and followed recommendations set forth in the *Handbook of Field Methods for Monitoring Landbirds* (Ralph et. al 1993).

Chambers Group biologists Paul Morrissey, Heather Franklin, Leslie Levy, Corey Vane, and Ian Maunsell conducted the biological resource surveys on October 31, November 1 and 2, 2012. Chambers Group biologists surveyed from below the dam in the Arroyo Seco Channel, to the confluence with the Los Angeles River, downstream to the Pacific Ocean. During the field surveys, Chambers Group biologists confirmed the desktop analysis by walking and driving the entire river channel. Binoculars were used where access was not feasible to survey 100 percent cover of the Arroyo Seco and the potentially impacted portion of the Los Angeles River. In areas where suitable sensitive species and fish habitat were identified, the biologists walked the river course documenting stream characteristics such as riffle and run complexes, ponded areas, streambed composition, channelization, fish barriers, and vegetation in the stream as well as on the banks and surrounding area. When suitable fish habitat was present, biologists walked within the stream utilizing an aquascope, seine, and dip nets to identify the presence of fish. The results of the surveys were recorded on standardized data sheets. Photographs of the Project site were also recorded to document existing conditions. All wildlife and wildlife sign detected, including tracks, scat, carcasses, and vocalizations were recorded. A comprehensive list of wildlife species observed during the surveys was recorded and is provided in Attachment A. A list of plant species observed during the surveys is provided in Attachment B. Site photos are provided in Attachment C. Maps of the CNDDB database occurrences and the survey areas are included as Attachment D.

Sensitive Wildlife and Plant species

The following information was used to determine the potential for biological resources to occur within the Project site. Special species status rankings are outlined below. The criteria used to evaluate the potential for sensitive species to occur on the Project site are outlined in Table 1. Species occurrences resulting in the CNDDB and CNPSEI searches dating from 1960 to present was used to analyze potential for species occurrence. The records prior to 1960 do not reflect the current conditions within and near the Arroyo Seco Channel and Los Angeles River.

Special Species Status rankings

Rare Plant Rank (RPR; formally known as CNPS List)

List 1A	=	Plants presumed extinct in California.
List 1B	=	Plants rare and endangered in California and throughout their range.
List 2	=	Plants rare, threatened or endangered in California but more common elsewhere in their range.
List 3	=	Plants about which we need more information; a review list.
List 4	=	Plants of limited distribution; a watch list.

RPR Extensions

0.1	=	Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).
0.2	=	Fairly endangered in California (20-80 percent occurrences threatened).
0.3	=	Not very endangered in California (less than 20 percent of occurrences threatened).

Federal

FE	=	Federally listed; Endangered
FT	=	Federally listed; Threatened
FC	=	Federal Candidate for listing
FPT	=	Federal Proposed listing as Threatened

State

ST	=	State listed; Threatened
SE	=	State listed; Endangered
RARE	=	State-listed; Rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)
SSC	=	California Species of Special Concern
WL	=	CDFG Watch List
WBWG	=	Western Bat Working Group (low, moderate, or high designated species)

Table 1: Criteria for Evaluating Sensitive Wildlife and Plant Species Potential for Occurrence (PFO)

PFO	CRITERIA
Absent:	Species is restricted to habitats or environmental conditions that do not occur within the Project site or CNDDB records indicate sightings prior to the year 1960.
Low:	Historical records for this species do not exist within the immediate vicinity of the Project site, and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate:	Either a historical record exists of the species within the immediate vicinity of the Project site (less than 1 mile) and marginal habitat exists on the Project site, or the habitat requirements or environmental conditions associated with the species occur within the Project site, but no historical records exist within 1 mile of the Project site.
High:	Both a historical record exists of the species within the Project site or its immediate vicinity (less than 1 mile), and the habitat requirements and environmental conditions associated with the species occur within the Project site. CNDDB records indicate sightings after the year of 1960.
Present:	Species was detected within the Project site at the time of the survey.

RESULTS

Literature Review

According the literature review, 10 special status plant and 10 special status wildlife species were documented to occur within 1 mile of the Project site. This list included two wildlife species that are federal- and/or state-listed endangered or threatened.

Sensitive Species

The following 10 special status plant species are considered absent from the Project site due to the lack of suitable habitat and/or CNDDB records indicate that sightings occurred prior to 1960. Several records were recorded before the land was developed and the river was channelized (channelization occurred in the 1930s). There were also records of plant species that are characterized as locally extinct according to the RPR. Suitable habitat for the following plants consist of upland habitat will not be affected by sluicing activities and therefore, will not be impacted by sluicing activities:

- Robinson's pepper-grass (*Lepidium virginicum var. robinsonii*)- RPR 1B.2
- Greata's aster (*Symphyotrichum greatae*)- RPR 1B.3

- mesa horkelia (*Horkelia cuneata* var. *puberula*)- RPR 1B.1
- round-leaved filaree (*California macrophylla*)- RPR 1B.1
- Plummer's mariposa-lily (*Calochortus plummerae*)- RPR 4.2
- Nevin's barberry (*Berberis nevinii*)- RPR 1B.1
- Parish's gooseberry (*Ribes divaricatum var. parishii*)- RPR 1A
- estuary seablite (*Suaeda esteroa*)- RPR 1B.2
- Coulter's goldfields (*Lasthenia glabrata* ssp. *Coulteri*)- RPR 1B.1
- prostrate vernal pool navarretia (*Navarretia prostrate*)- RPR 1B.1

The following five sensitive wildlife species are considered **ABSENT** from the Project site due to a lack of suitable habitat downstream of the dam and/or historical records of the species occurring prior to the year 1960:

- American badger (*Taxidea taxus*)- SSC
- Burrowing owl (*Athene cunicularia*)- SSC
- Coast horned lizard (*Phrynosoma blainvillii*)- SSC
- southwestern willow flycatcher (*Empidonax traillii extimus*)- **FE, SE**
- southern grasshopper mouse (*Onychomys torridus ramona*)- SSC

The following five special status wildlife species have a **LOW** potential to occur on the Project site due to the presence of low quality suitable habitat and/or historical records of these species occurring after the year 1960:

- **Big free-tailed bat (*Nyctinomops macrotis*) – SSC, WBWG - Mod**
  This species is rare in California. Migrants are known to occur in southern California; however, it is unlikely to breed at the Project site (CDFG 2002). This species requires rocky areas and caves in order to roost (small maternal nursery); therefore, it is unlikely this species would roost within the channel below the dam. Some potential roost habitat may exist near the Devil's Gate Reservoir and Arroyo Seco Channel area north of the 210 freeway; however, potential bat habitat will not be affected by sluicing activities.

  Records from the CNDDB have not identified big free-tailed bats in the area since 1985; therefore, big free-tailed bats have a LOW potential to forage on the Project site.

- **Hoary bat (*Lasiurus cinereus*) – WBWG - Mod**
  The hoary bat is a Western Bat Working Group (WBWG) moderate-priority species. The Western Bat Working Group is comprised of agencies, organizations and individuals interested in bat research, management and conservation from the 13 western states and provinces. This species is a special mention species, and is not considered a SSC by CDFG. The hoary bat occurs in a variety of habitats across the North American continent but has a patchy distribution in southeastern California (CDFG 2002). This species winters in coastal and southern California, but can be widespread during migration. Suitable breeding habitat includes all woodland and forest habitat with medium to large-sized trees and dense foliage. This species can be found from sea level to 13,200 feet. This solitary bat prefers to roost in dense foliage in sites that are hidden from above with few branches below and near areas with water. During migration in southern California, males are found in foothills,

deserts, and mountains; while females prefer lowlands and coastal valleys. This species prefers to rear their young in deciduous trees in forested habitats.

Although deciduous trees are abundant in portions of the Arroyo Seco Channel and Los Angeles River, the bats roosting habitat will not be affected by sluicing activities. Records from the CNDDB have not identified hoary bats in the area since 1942; therefore, hoary bats have a LOW potential to occur on the Project site.

- **Least Bell's vireo (*Vireo bellii pusillus*) - FE, SE**
  Preferred nesting habitat for least Bell's vireo is low, dense, scrubby vegetation in early successional areas and this species is particularly dependent on riparian areas. Habitats may include willow woodlands, dense mule fat, scrub oak, coastal chaparral, and mesquite patches with dense early successional understories. It builds a suspended cup nest about 0.5 to 2.0 meters above the ground and, on average, lays four eggs. It may produce two broods per season. On the breeding grounds, the least Bell's vireo feeds primarily on insects and small spiders. No suitable nesting habitat exists downstream of the dam along the Arroyo Seco Channel and Los Angeles River to the Pacific Ocean. Records from the CNDDB indicate that the species was indentified in the Devil's Gate flood basin in July of 2012. This species is not known to breed in the reservoir area and is presumed to be a migrant vireo foraging in the area; however, suitable habitat is present in the reservoir area.

  Because there is no suitable nesting habitat downstream of the dam, least Bell's vireo has a LOW potential to forage in the Arroyo Seco Channel below the dam. However, this species will not be affected by sluicing activities taking place downstream of the Devil's gate Dam.

- **Silver-haired bat (*Lasionycteris noctivagans*) – WBWG - Mod**
  The silver-haired bat is a Western Bat Working Group (WBWG) moderate-priority species. The Western Bat Working Group is comprised of agencies, organizations, and individuals interested in bat research, management, and conservation from the 13 western states and provinces. The silver-haired bat's distribution includes coast and montane forest from the Oregon border south along the coast to San Francisco Bay and along the Sierra Nevada and Great Basin region to Inyo County. It is also found in southern California from Ventura and San Bernardino counties south to Mexico and on the Channel Islands. Silver-haired bats are migratory and may be found anywhere in California during migrations. This species is primarily a forest dweller and roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark. The silver-haired bat mates in autumn, starting in late August; and the young are born from May to July. This species may forage with other bat species, feeding on moths, but has been found to feed on other types of prey, such as beetles and other hard-shelled insects. It prefers to feed over streams, ponds, and open brushy areas, usually less than 20 feet above the pond or stream surface or ground. Forested areas occur near the Arroyo Seco Channel area; however, the quality of the habitat is not ideal.

  Records from the CNDDB have not identified silver-haired bats in the area since 1986 and that particular area is now developed. Therefore, silver-haired bats have a LOW potential to occur within the channel downstream of the dam. However, this species will not be affected by sluicing activities taking place downstream of the Devil's gate Dam.

- **Western mastiff bat (*Eumops perotis californicus*) – SSC, WBWG - High**
  The western mastiff bat is a permanent resident throughout its range in southern California, southern Arizona, Texas, and south to South America. With a wingspan approaching 2 feet, the western mastiff bat is the largest bat species in North America. It is also unique in that its call can be readily identified with the unaided ear. It roosts in small colonies or individually in primarily natural substrates such as cliff faces, large boulders, and exfoliating rock surfaces. It is less commonly found in artificial structures such as buildings and roof tiles. It is found in a wide variety of habitats, including desert scrub, chaparral, woodlands, floodplains, and grasslands. Reasons for observed population declines are unknown.

  Records from the CNDDB have not identified western mastiff bats in the area since 1972 and that particular area is now developed. Therefore, western mastiff bats have a LOW potential to occur downstream of the dam. However, this species will not be affected by sluicing activities taking place downstream of the Devil's gate Dam.

General Biological Resource Survey

The majority of the Arroyo Seco Channel consists of a concrete-lined channel. The sections of concrete-lined channel are a total of approximately nine miles in length. Two sections of the Arroyo Seco Channel were identified to have natural sediment bottoms, and these sections encompass a total of approximately half of a mile in length. The Los Angeles River from where the Arroyo Seco Channel enters the Los Angeles River to the Pacific Ocean also mainly consists of a concrete-lined river. The concrete-lined sections of this portion of the Los Angeles River are a total of approximately 21 miles in length. Sections of the Los Angeles River were identified as having concreted riprap and these sections included a total of approximately 4 miles in length. The majority of the concreted riprap sections were located in Long Beach from West Willow Street south to the Pacific Ocean. This section was approximately 90 percent of the total concreted riprap length. An area known as Golden Shore Marine Biological Reserve is located adjacent to the Los Angeles River immediately to the east of the main channel. This area is an intertidal and sub tidal wetland area exposed to tidal influences.

Little to no vegetation was present within the channel or riverbed in concrete-lined areas of the Arroyo Seco Channel and Los Angeles River. These areas had little to no potential for sensitive wildlife or plant species to forage and find shelter. Several bridges crossing over the Arroyo Seco Channel and Los Angeles River were identified throughout the Project site. However, the majority of these bridges were constructed of solid concrete or had exposed steel beams, and do not provide suitable bat hibernaculum. The desktop analysis and field surveys identified six areas with potential habitat for fish or other sensitive species. The majority of these areas were not concrete-lined sections of the Arroyo Seco Channel or Los Angeles River. Areas identified with the potential for sensitive species to occur (Areas 1 through 6) are described below and shown in Attachment D.

<u>Area 1</u>

Area 1 is located in the Arroyo Seco Channel just downstream of the Devil's Gate Dam in the City of Pasadena. This area starts at the downstream area below Devil's Gate Dam south to the drop spillway structure located approximately 560 feet downstream of the Interstate 210 freeway overpass near the northern portion of the Brookside Golf Course. This section of the channel consists of freshwater emergent

habitat with cattails and leads to a mature riparian woodland habitat with willows, alders, and western sycamore trees in downstream sections of this area. In the northern portion of this area to the north of the Interstate 210 freeway overpass, the streambed consists of cobble and rocky substrate and transitions to mostly sandy substrates to the south of the Interstate 210 freeway overpass. Isolated pools were identified approximately one to three feet deep, and the water present showed signs of anaerobic conditions. No macroinvertebrates were identified during the survey. There were areas within the streambed within Area 1 that were dry during the survey effort.

No sensitive wildlife or plant species were observed during surveys in Area 1. However, the riparian habitat present is suitable foraging habitat for avian species. Suitable roosting habitat for bats was present within the large native trees surrounding the channel. The Devil's Gate Dam structure, where the Arroyo Seco Channel begins below the dam, consisted of solid rock and concrete and did not have suitable roosting habitat for bats.

Area 2

Area 2 is located in the Arroyo Seco Channel just downstream of West Holly Street in the City of Pasadena. This area starts at the end of the concrete lined Arroyo Seco Channel approximately 750 feet north of the 134 freeway overpass and continues downstream to a drop spillway structure located approximately 300 feet south of the 134 freeway overpass. The northern section of Area 2 consists of riparian habitat with red willows and California white alder trees. Sandy and rocky substrates were present within the streambed and undercuts were present along the banks that could provide cover/shelter for aquatic species. Large ponds approximately five to six feet deep and 50 feet wide were found in the downstream section of this area. These ponds had a sandy bottom with little vegetation on the banks. Riffle and run complexes occurred in approximately 250 linear feet of the downstream section of this area. In addition, aquatic macroinvertebrates were present on rocks and algae was observed within the streambed that could provide food sources for foraging aquatic species. High water marks of over five feet high in this section suggest that high volume flows come through this area during storm events.

No sensitive wildlife or plant species were observed during surveys. Riparian habitat surrounding the channel is suitable foraging and nesting habitat for avian species. Suitable roosting habitat for bats was also present in the trees surrounding the channel. Several bridge structures are present throughout this area, but the bridge structures were solid concrete and did not provide suitable roosting habitat for bats.

Area 3

Area 3 consists of two restoration areas that flows north to south parallel to the Arroyo Seco Channel, and is located to the west and east of the Arroyo Seco Channel (concrete-lined). This area begins at the drop spillway structure located at the southern end of Area 2 just north of the Colorado Boulevard overpass bridge, and continues south for approximately 0.33 miles near the Pasadena Roving Archers archery range. Water enters the sites through a small gate located on both sides of the channel. The water present at these restoration sites flows back into the concrete-lined Arroyo Seco Channel. Water from the restoration site to the west of the Arroyo Seco Channel re-enters the Arroyo Seco Channel just to the northwest of the pedestrian bridge located to the west of the Pasadena Roving Archers archery range parking lot. Water from the restoration site to the east of the Arroyo Seco Channel re-enters the Arroyo Seco Channel over 300 feet south from the pedestrian bridge. The restoration area sections of the channel is comprised of slow-moving,

pooled habitat, cobble and rock substrates, with heavy silt sedimentation present. Trees line the banks of both restoration sites with an open canopy along the middle of the channel. The mature canopy included willows, California white alders, aspens, and sycamore trees. Emergent cattails were present in areas with pooled water.

No sensitive wildlife or plant species were observed during surveys. Suitable foraging and nesting habitat for avian species was present in the surround riparian habitat in both restoration sites. This habitat also provides suitable roosting habitat for bats. Nearby bridge structures were also constructed of solid concrete and do not provide suitable roosting habitat for bats.

Area 4

Area 4 is located in the City of Los Angeles. The desktop analysis identified three small areas under several street bridges traversing over the Los Angeles River as potentially having sediment or rocky substrates within the streambed. These overpass bridges were located at East 7th Street, East Olympic Boulevard, and under a railway bridge just south of East Washington Boulevard.

The Los Angeles River within Area 4 consists of a concrete-lined river with rocky and sandy substrates present under the bridges located at East 7th Street, East Olympic Boulevard, and railway just south of East Washington Boulevard. The majority of the rocky sediment was observed around the support columns of the bridges. Little to no vegetative cover was present at these locations with vegetation. The scattered emergent vegetation was located on the rocky sediment around the bridge support columns and algae covered the concrete-lined river and rocky sediment. Due to the small amount of vegetation and sediments, these areas could provide low quality foraging opportunities for common species.

No sensitive wildlife or plant species were observed during surveys. No surrounding habitat with the potential to support sensitive wildlife species was observed. The East 7th Street Bridge and East Olympic Boulevard Bridge over the Los Angeles River were solid concrete structures, and do not provide suitable roosting habitat for bats. The two railway bridges just south of East Washington Boulevard had exposed, open steel beams and were not ideal structures for roosting bats. Therefore, these railway bridges are considered to have a low potential to support bat species.

Area 5

Area 5 is located within the Los Angeles River in the Long Beach area just north of the West Willow Street overpass bridge to the West Anaheim Street overpass bridge. The area downstream of West Willow Street is comprised of a large deep pool leading into a riffle and run river system. The water at within this area was turbid and visibility was less than 1-foot. This area appeared to have an earthen basin with concreted riprap consisting of large boulders along the banks. Vegetation was present along the lower sections of the banks and included willows, cattails, and sedges. However, the vegetation lining the outer banks of the river appeared to have recently been removed for flood maintenance purposes.

No sensitive wildlife or plant species were observed during surveys. Vegetation found in this area did not appear suitable for cover; therefore the potential for sensitive riparian wildlife species to occur in this area is unlikely. The West Willow Street Bridge consisted of solid concrete and does not provide suitable roosting habitat for bats.

Area 6

Area 6 is located within the Los Angeles River in the Long Beach from the West Anaheim Street overpass to the Pacific Ocean. This area was completely turbid and visibility was less than 1-foot. Sandy sediment may be present on the river bottom and the banks consisted of concreted riprap. This section of the Los Angeles River appeared to have ocean confluent water with high salinity levels. Plants that are adapted to high saline conditions, such as pickleweed and California cord grass, were observed along the banks closer to the ocean. Several extensive patches of non-native castorbean and arundo also exist along the banks. The vegetation lining the outer banks of the river at this area also appeared to have been recently removed for flood maintenance purposes.

Several bridges crossing over the Los Angeles River were present along the river from West Willow Street south to the Pacific Ocean. These bridges were solid concrete and did not provide suitable roosting habitat for bats. Many avian shoreline species were observed in this area near the mouth of the river entering the Pacific Ocean, including a white-tailed kite (CDFG fully protected species) flying through the area. These species are not expected to be affected by sluicing events.

Wetland Preserve Adjacent to Area 6

The Golden Shore Marine Biological Reserve is located adjacent to the Los Angeles River on the eastern bank of the channel. This area was originally part of Palm Beach Park, an area created in the 1950's for a launch ramp and parking lot. This area was exposed to continual silt build up and was eventually closed in the early 1990's. In the late 1990's, 6.4 acres of intertidal and sub tidal wetland habitat was mitigation for the impact on the salt-water lagoon that was converted to Rainbow Harbor, a recreational boating area. A map of this area is included as Attachment E. Many avian species typical of coastal areas were observed including: great blue heron, black-crowned night heron, great egret, willet, marbled godwit, pied-billed grebe, eared grebe, western grebe, black-necked stilt, killdeer, and western gulls. This area is also known for fish spawning, typical of intertidal and sub tidal wetland areas.

Although this area is open to the Los Angeles River and Pacific Ocean influences, downstream flows from the Los Angeles River directly into the wetland area would be minimal. This is due to the inlet of the wetland positioned south along the east bank of the river, most likely a design feature of the mitigation site to prevent debris from entering into the wetland area. In addition, a boom is positioned along this south facing inlet. Surface flow from the Los Angeles River will primarily carry sediment past the inlet of the wetland area. However, with sediment flowing out toward the ocean and potentially being deposited on the floor, the potential for the sediment to be carried back up and into the Golden Shore Marine Biological Reserve during high tide events is likely to occur.

Intertidal and sub tidal wetland ecosystems are maintained by the macrophytes (wetland plants) that regulate the system by the accumulation of organic matter and trapping inorganic sediment. Maintenance of this system is caused by the interactions with the sea level, sediment accretion, organic production, and sediment erosion, to an equilibrium with the mean sea level. Tidal events can erode the sediments from wetland areas, reducing the areas for emergent wetland plants, food sources, and cover for aquatic and avian species. If the wetlands habitats in the Reserve are experiencing erosion, the addition of sediment could help to maintain intertidal habitats. On the contrary, if too much sediment is deposited, the sediment could elevate the floor and, if enough sediment is deposited over time, convert subtidal areas to mudflat,

mudflat to low marsh and low marsh to mid-marsh. The periodic removal of sediments from behind Devil's Gate Dam would be expected to have a minor impact, if any, on the Golden Shore Marine Biological Reserve because most of the sediments would either settle in the main channel or be washed into Outer Long Beach Harbor. The amount of sediment that would be transported back into the Reserve area would be a relatively small fraction of the total released. The periodic introduction of sediments into the Los Angeles River watershed during rainfall events over a period of 2 or 3 years would not be expected to result in any discernible change in the habitats of the Golden Shore Marine Biological Reserve.

Presence/Absence Fish Surveys

The desktop analysis and field surveys identified six areas as having a potential for fish to occur; these areas were the same areas described above in the General Biological Resource Survey results section. In general, these areas within the Arroyo Seco Channel and Los Angeles River had sediment bottoms and vegetation present that could provide foraging opportunities and cover/shelter for fish species. The majority of Arroyo Seco Channel and Los Angeles River did not have suitable fish habitat present and consisted of a concrete-lined channel or river with little to no vegetation present within the channel. Areas identified with the potential for fish to occur (Areas 1 through 6) are described below and shown in Figure 2.

Area 1

The freshwater emergent vegetation in the upstream section of this area would suitable habitat for fish species; however, the southern, downstream section had no cover present for fish and showed signs of anaerobic conditions within the water during the time of the survey. In addition, no algae or aquatic invertebrates were observed within the streambed that could provide foraging opportunities. No fish were observed in this section of the Arroyo Seco Channel.

Area 2

Sandy and rocky substrates were present within the streambed and undercuts were present along the banks that could provide cover/shelter for fish species. The macroinvertebrates and algae present on the rocks and on debris within the water could provide a source of food for fish species. Vegetation along the banks provides excellent, suitable cover for fish, and debris found within the streambed provides good suitable fish habitat. Large, deep pools found in this area may provide suitable habitat for fish including non-native bass and trout species. During the fish surveys, approximately 60 mosquito fish were identified in this section of the Arroyo Seco Channel. These fish were found near the banks where vegetative cover was present along the bank. Mosquito fish are not native fish species and are known to be used as vector control species.

Area 3

The restoration sites are parallel to and above the banks of the concrete-lined Arroyo Seco Channel. No fish were observed within either restoration areas. It appears that the drop spillway structure at the north end of both restoration areas may act as a fish movement barrier for both downstream and upstream migration. In addition, the outlet culverts entering the Arroyo Seco Channel for both restoration sites also act as a barrier for upstream migration from the Arroyo Seco Channel to the restoration areas. Although suitable fish habitat exists within the restoration areas, these barriers prevent or limit fish populations from occurring here. The Arroyo Seco Channel, parallel to and downstream of the restoration areas, is a

concrete-lined channel, and suitable fish habitat is not present within this section of the Arroyo Seco Channel.

Area 4

No fish were observed at any of the three locations within Area 4. These locations do not have appropriate riverbed composition, vegetative cover, or food sources to support native fish populations.

Area 5

Suitable fish habitat exists downstream of Willow street. This area consisted of a large deep pool leading into a riffle and run complex river system. Vegetation growing on the lower areas of the banks provides good cover for fish. No fish were observed in the water during the survey; however, non-native fish are considered to be present in this area. Hundreds of waterfowl and several species of fish eating birds, including great blue herons, brown pelicans, belted kingfisher, great egret, and several species of grebes, were observed on the riverbanks. In addition, during the survey, several anglers were lining the east bank and these anglers claimed to be fishing for carp. This area likely hosts only exotic fish species such as mosquito fish, goldfish, and sunfish species that have been introduced by local anglers. The water downstream of West Anaheim Street appears to have a brackish water influence and may support species adapted to higher saline conditions.

Area 6

Area 6, from West Anaheim Street overpass to the Pacific Ocean was completely turbid and visibility was less than 1-foot. Area 6 had deep water present with higher salinity levels (ocean influence) than upstream sections of the Los Angeles River. This area may support larger fish or species adapted to confluent freshwater and ocean water environments. Due to turbid conditions, no fish were observed during visual surveys from the outer banks; however, fish are considered present in this area. Several species of fish-eating water birds were present along the entire stretch of the river in this area. The water present expanded to the width of the channel, and boating signs were displayed in the river indicating that the water present could potentially support boat traffic. These factors, in addition to the vegetation and sediment present, does support fish populations adapted to ocean water conditions.

The Golden Shore Marine Biological Reserve will likely support fish spawning areas and foraging opportunities for fish species, typical of coastal wetlands. It is not expected that the periodic introduction of sediments from sluicing and sediment accumulation would result in a discernible loss of the subtidal and intertidal habitat used by estuarine fish. Therefore, no impact to fishes in the Golden Shore Marine Biological Reserve would be expected.

Conclusions

The majority of the Arroyo Seco Channel and Los Angeles River downstream of the Devil's Gate dam consists of a concrete-lined channel. The majority of this concrete-lined channel does not provide suitable habitat for fish or other sensitive species. Due to the flash flood nature of the Arroyo Seco Channel and Los Angeles River, large amounts of sediment are moved naturally through the system. Although the sediment within the Devil's Gate reservoir may contain clay soils which can inhibit ground water recharge, sluicing activities

would have minimal impact to groundwater and water table since the majority of the river is concrete-lined. Minimal impacts to natural areas of the stream and habitat adjacent to the Arroyo Seco Channel and Los Angeles River are also expected due to the frequent flood events that occur on an annual basis. Sediment deposited during sluicing activities would be expected to flush downstream during these storm events.

Areas 1 through 3 could provide foraging opportunities and shelter for sensitive species including bats and avian species. Maintenance activities occur in the region downstream of the dam limiting the potential for sensitive species to occur. Suitable habitat for sensitive species appeared to be absent within the majority of the Arroyo Seco Channel and the downstream section of the Los Angeles River starting where the Arroyo Seco Channel enters the river. It is not likely that sensitive plant or wildlife species are present within the Arroyo Seco Channel or Los Angeles River (Areas 1 through 5). Furthermore, since no vegetation is proposed for removal downstream of the dam during sluicing activities, impacts to sensitive species in these areas are not anticipated.

Several fish barriers exist along the Arroyo Seco Channel and Los Angeles River, preventing fish migration upstream. During flood events, fish populations may be washed downstream and the upstream movement of fish is unlikely due to a lack of continuous suitable habitat, concreted channelization of water flow, water flow controlled culverts, and drop spillway structures. Because no native fish were identified in the channel or river in Areas 1 through 3 that may serve as fish refugia, and suitable fish habitat within the Arroyo Seco Channel and Los Angeles River is of low quality with only non-native fish species likely to occur, no impacts to native fish populations are expected within the channel within Areas 1 though 5.

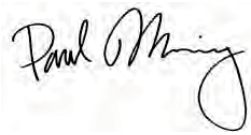
The Los Angeles River was channelized by a concrete-lined or concreted rip rap in 1938 after several floods caused major damage to cities. Based on the results of this survey, no native fish are expected to be present within the upper channel areas. Currently, only non-native fish species are expected to inhabit the river including: black bullhead catfish, bluegill, green sunfish, goldfish, largemouth bass, mosquito fish, common carp and tilapia. These fish species were introduced to the river for sport fishing and vector control purposes. Only non-native mosquito fish were observed in Area 2 during the fish surveys. No fish were observed in Areas 1, 3, or 4. Due to deep water and turbid conditions, surveys conducted from the banks were difficult in Areas 5 and 6, and no fish were observed during the visual surveys. However, several species of fish eating birds were observed in Areas 5 and 6, and these areas are likely to have non-native fish and/or native fish adapted to saline water conditions.

The Golden Shore Marine Biological Reserve is located adjacent to the Los Angeles River in Area 6 (Attachment E). Intertidal and sub tidal wetland habitat (6.4 acres) was mitigation for the impact on the salt-water lagoon that was converted to Rainbow Harbor, a recreational boating area. Although this area is open to the Los Angeles River and ocean influences, downstream flows from the Los Angeles River directly into the wetland area would be minimal due to the southward position of the inlet into the wetland area. However, with sediment flowing out toward the ocean, the potential for some of the sediment to be carried back up and into the Golden Shore Marine Biological Reserve during high tide events is likely to occur. The periodic introduction of minor amounts of sediment into the Reserve over a period of 2 to 3 years would not be expected to have significant impacts on the habitats of the area.

Sluicing activities would emulate the natural movement of sediment to downstream sections of the channel. The sediment load would be the same as a natural event; however, the duration that the sediment would be

deposited would occur in a shorter period. The ports generally maintain sediment accumulation within the port and mouth of rivers.

Sincerely,



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Attachments

Attachment A: Wildlife Species Observed List
Attachment B: Plant Species Observed List
Attachment C: Site Photographs
Attachment D: CNDDB Occurrences and Survey Areas Map
Attachment E: Golden Shore Marine Biological Reserve Map

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Attachment A – Wildlife Species Observed List

Attachment A: Wildlife Species Observed Below the Devil's Gate Dam Along the Arroyo Seco Channel and Los Angeles River

Scientific Name	Common Name
CLASS OSTEICTHYES	**BONY FISH**
POECILIIDAE	**GUPPIES, MOLLIES, AND PLATYS**
Gambusia affinis	mosquitofish
CLASS REPTILIA	**REPTILES**
PHRYNOSOMATIDAE	**ZEBRA-TAILED, EARLESS, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNY LIZARDS**
Uta stansburiana	common side-blotched lizard
CLASS AVES	**BIRDS**
PHALACROCORACIDAE	**CORMORANTS**
Phalacrocorax auritus	double-crested cormorant
ARDEIDAE	**HERONS, BITTERNS**
Ardea herodias	great blue heron
Nycticorax nycticorax	black-crowned night-heron
Ardea alba	great egret
ANATIDAE	**DUCKS, GEESE, SWANS**
Anas platyrhynchos	mallard
Anas clypeata	northern shoveler
Anas americana	American wigeon
Anas cyanoptera	cinnamon teal
Anas strepera	gadwall
Oxyura jamaicensis	ruddy duck
Branta canadensis	Canada goose
PELECANIDAE	**PELICANS**
Pelecanus occidentalis	brown pelican
SCOLOPACIDAE	**SANDPIPERS**
Limosa fedoa	marbled godwit
Catoptrophorus semipalmatus	willet
PODICIPEDIDAE	**GREBES**
Podilymbus podiceps	pied-billed grebe
Podiceps nigricollis	eared grebe
Aechmophorus occidentalis	western grebe
RALLIDAE	**RAILS**
Fulica americana	American coot
RECURVIROSTRIDAE	**STILTS & AVOCETS**
Himantopus mexicanus	black-necked stilt
LARIDAE	**SKUAS, GULLS, TERNS, SKIMMERS**
Larus occidentalis	western gull
CHARADRIIDAE	**PLOVERS**
Charadrius vociferus	killdeer

Attachment A: Wildlife Species Observed Below the Devil's Gate Dam Along the Arroyo Seco Channel and Los Angeles River

Scientific Name	Common Name
ACCIPITRIDAE	**HAWKS, KITES, EAGLES**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Elanus leucurus	white-tailed kite
COLUMBIDAE	**PIGEONS & DOVES**
Columba livia	rock pigeon
Zenaida macroura	mourning dove
APODIDAE	**SWIFTS**
Aeronautes saxatalis	white-throated swift
ALCEDINIDAE	**KINGFISHERS**
Ceryle alcyon	belted kingfisher
PICIDAE	**WOODPECKERS**
Colaptes auratus	northern flicker
TYRANNIDAE	**TYRANT FLYCATCHERS**
Sayornis nigricans	black phoebe
CORVIDAE	**JAYS & CROWS**
Aphelocoma californica	western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
AEGITHALIDAE	**BUSHTITS**
Psaltriparus minimus	bushtit
TIMALIIDAE	**BABBLERS**
Chamaea fasciata	wrentit
MIMIDAE	**MOCKINGBIRDS, THRASHERS**
Mimus polyglottos	northern mockingbird
STURNIDAE	**STARLINGS**
Sturnus vulgaris	European starling
PARULIDAE	**WOOD WARBLERS**
Dendroica coronata	yellow-rumped warbler
Geothlypis trichas	common yellowthroat
EMBERIZIDAE	**EMBERIZIDS**
Melospiza melodia	song sparrow
Pipilo crissalis	California towhee
FRINGILLIDAE	**FINCHES**
Carduelis psaltria	lesser goldfinch
Carpodacus mexicanus	house finch
ICTERIDAE	**BLACKBIRDS**
Euphagus cyanocephalus	Brewer's blackbird
PASSERIDAE	**OLD WORLD SPARROWS**

Attachment A: Wildlife Species Observed Below the Devil's Gate Dam Along the Arroyo Seco Channel and Los Angeles River

Scientific Name	Common Name
Passer domesticus	house sparrow
HIRUNDINIDAE	**SWALLOWS**
Petrochelidon pyrrhonota	cliff swallow
CLASS MAMMALIA	**MAMMALS**
SCIURIDAE	**SQUIRRELS**
Spermophilus beecheyi	California ground squirrel
MURIDAE	**MICE, RATS, and VOLES**
Neotoma fuscipes	dusky-footed woodrat
CANIDAE	**WOLVES & FOXES**
Canis familiaris	domestic dog
Canis latrans	coyote
FELIDAE	**CATS**
Lynx rufus	bobcat
PROCYONIDAE	**RACCOONS**
Procyon lotor	raccoon
MUSTELIDAE	**WEASELS, SKUNKS & OTTERS**
Mephitis mephitis	striped skunk
LEPORIDAE	**HARES & RABBITS**
Sylvilagus audubonii	desert cottontail
CERVIDAE	**DEER**
Odocoileus hemionus	mule deer

Attachment B – Plant Species Observed List

Attachment B: Plant Species Observed Below the Devil's Gate Dam Along the Arroyo Seco Channel and Los Angeles River

Scientific Name	Common Name
FERNS AND FERN ALLIES	
PTERIDACEAE	**BRAKE FAMILY**
Pentagramma triangularis	goldenback fern
ANGIOSPERMS (DICOTYLEDONS)	
ACERACEAE	**MAPLE FAMILY**
Acer negundo var. *californicum*	California box-elder
AMARANTHACEAE	**AMARANTH FAMILY**
*Amaranthus retroflexus**	rough pigweed
ANACARDIACEAE	**SUMAC OR CASHEW FAMILY**
Malosma laurina	laurel sumac
Rhus ovata	sugar bush
Rhus trilobata	skunkbrush
Toxicodendron diversilobum	poison oak
APIACEAE	**CARROT FAMILY**
*Conium maculatum**	poison hemlock
APOCYNACEAE	**DOGBANE FAMILY**
*Vinca major**	greater periwinkle
ASCLEPIADACEAE	**MILKWEED FAMILY**
Asclepias californica	California milkweed
ASTERACEAE	**SUNFLOWER FAMILY**
*Ageratina adenophora**	eupatory
*Anthemis cotula**	mayweed
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort
Artemisia dracunculus	tarragon
Baccharis pilularis	coyote brush
Baccharis salicifolia	mule fat
Brickellia californica	California brickellbush
*Carduus pycnocephalus**	Italian thistle
*Centaurea melitensis**	tocalote
Chaenactis artemisiaefolia	white pincushion
Chaenactis glabriuscula	yellow pincushion
*Cirsium vulgare**	bull thistle
Conyza canadensis	horseweed
*Cotula australis**	Australian brass-buttons
Eriophyllum confertiflorum	golden yarrow
*Filago gallica**	fluffweed
Gnaphalium californicum	California everlasting
*Gnaphalium luteo-album**	white cudweed
Lepidospartum squamatum	scale-broom
Sonchus asper ssp. *asper**	prickly sow thistle
*Sonchus oleraceus**	common sow thistle
*Taraxacum officinale**	common dandelion
Xanthium strumarium	cocklebur
BETULACEAE	**BIRCH FAMILY**

Attachment B: Plant Species Observed Below the Devil's Gate Dam Along the Arroyo Seco Channel and Los Angeles River

Scientific Name	Common Name
Alnus rhombifolia	white alder
BORAGINACEAE	**BORAGE FAMILY**
Cryptantha intermedia	common forget-me-not
BRASSICACEAE	**MUSTARD FAMILY**
*Capsella bursa-pastoris**	shepherd's-purse
*Hirschfeldia incana**	shortpod mustard
Lepidium sp.	peppergrass
Rorippa nasturtium-aquaticum	water-cress
*Sisymbrium altissimum**	tumble mustard
CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**
Sambucus mexicana	Mexican elderberry
CARYOPHYLLACEAE	**PINK FAMILY**
*Stellaria media**	common chickweed
CHENOPODIACEAE	**GOOSEFOOT FAMILY**
*Chenopodium album**	lamb's quarters
*Salsola tragus**	Russian thistle
CONVOLVULACEAE	**MORNING-GLORY FAMILY**
Calystegia macrostegia	western bindweed
CUSCUTACEAE	**DODDER FAMILY**
Cuscuta californica	California dodder
EUPHORBIACEAE	**SPURGE FAMILY**
Eremocarpus setigerus	dove weed
*Ricinus communis**	castor-bean
FABACEAE	**LEGUME FAMILY**
Lotus scoparius	deerweed
Lupinus sp.	lupine
*Spartium junceum**	Spanish broom
Trifolium sp.	clover
FAGACEAE	**OAK FAMILY**
Quercus agrifolia	coast live oak
GERANIACEAE	**GERANIUM FAMILY**
*Erodium brachycarpum**	long-beaked filaree
*Erodium cicutarium**	red-stemmed filaree
GROSSULARIACEAE	**GOOSEBERRY FAMILY**
Ribes aureum	golden currant
HYDROPHYLLACEAE	**WATERLEAF FAMILY**
Eriodictyon crassifolium	thick-leaved yerba santa
Eriodictyon trichocalyx	hairy yerba santa
Phacelia sp.	phacelia
JUGLANDACEAE	**WALNUT FAMILY**
Juglans californica	California black walnut
LAMIACEAE	**MINT FAMILY**
*Marrubium vulgare**	horehound
Salvia apiana	white sage
Salvia columbariae	chia

Attachment B: Plant Species Observed Below the Devil's Gate Dam Along the Arroyo Seco Channel and Los Angeles River

Scientific Name	Common Name
Salvia mellifera	black sage
MALVACEAE	**MALLOW FAMILY**
*Malva parviflora**	cheeseweed
MORACEAE	**MULBERRY FAMILY**
*Ficus carica**	edible fig
OLEACEAE	**OLIVE FAMILY**
Fraxinus velutina	velvet ash
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Camissonia californica	California evening primrose
Oenothera elata ssp. hookeri	Hooker's evening primrose
PASSIFLORACEAE	**PASSION-FLOWER FAMILY**
*Passifloraceae caerulea**	common passion flower
PLATANACEAE	**SYCAMORE FAMILY**
Platanus racemosa	western sycamore
POLYGONACEAE	**BUCKWHEAT FAMILY**
Eriogonum fasciculatum	California buckwheat
*Rumex conglomeratus**	dock
*Rumex crispus**	curly dock
*Non-native Species	

Attachment C – Site Photographs

ATTACHMENT C – SITE PHOTOGRAPHS

Photo 1. Photo of Area 1 below the dam. This area consisted of isolated pools with sandy substrates and areas with anaerobic conditions. The stream moves through a mature riparian corridor. Photo is facing north.

Photo 2. Photo of large pool in Area 2. Sandy and rocky substrates, undercut banks, and vegetative cover were present within the streambed that could provide cover/shelter for fish species. Photo is facing north.

Photo 3. Photo showing mosquito fish observed in Area 2. Approximately 60 mosquito fish were identified during the survey effort. No other fish species were directly observed.

Photo 4. Photo showing Area 3 in the restoration areas. This section of the stream is adjacent to the concrete lined Arroyo Seco Channel. The cement spillover that directs water into the Arroyo Seco is a fish barrier, preventing upstream migration. Photo is facing south.

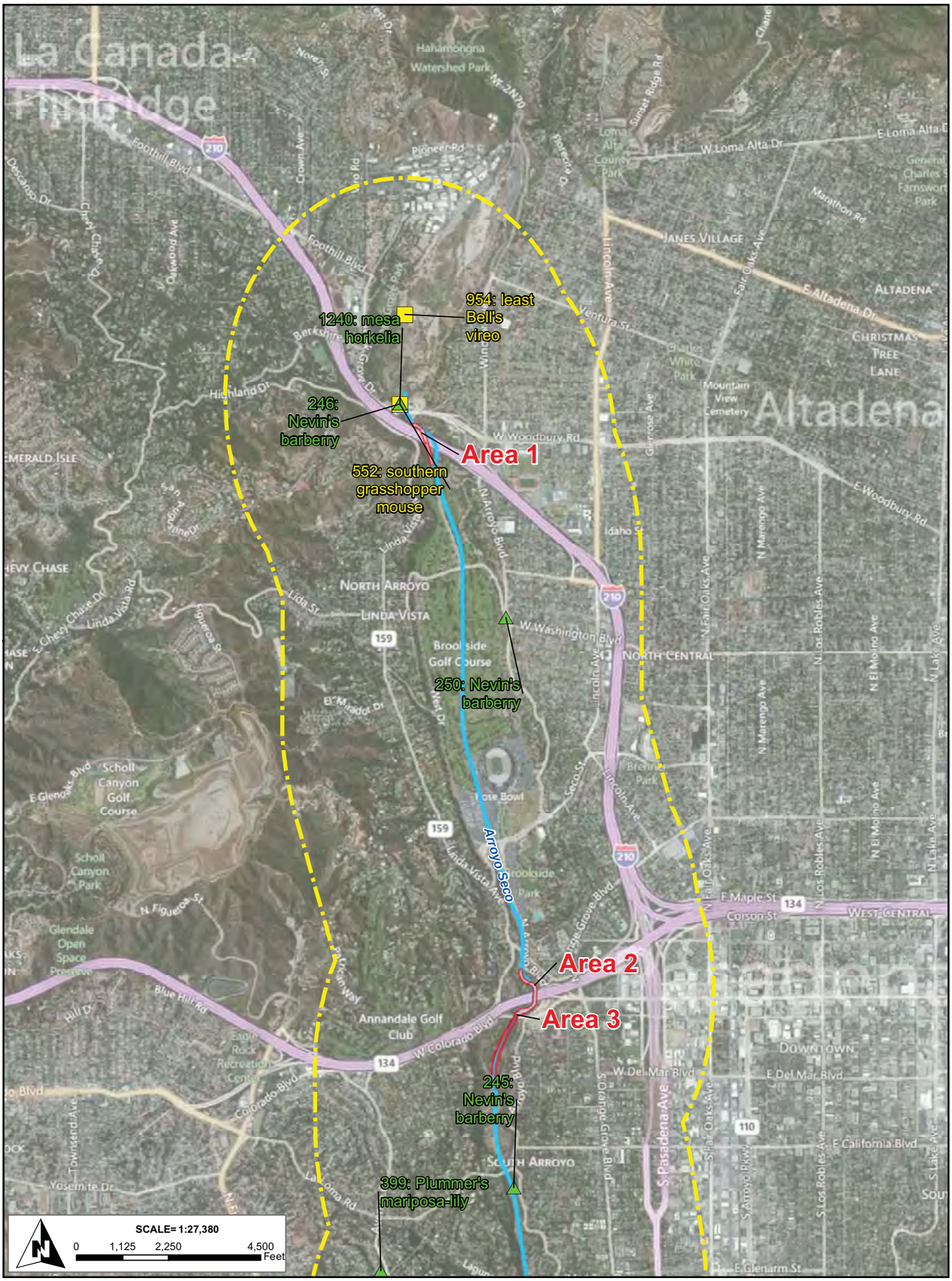
Photo 5. Photo showing Area 4, with little to no suitable shelter/cover for native fish. Photo is facing southwest.

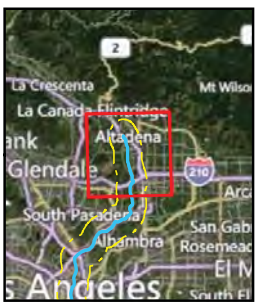
Photo 6. Photo showing Area 5. Area 5 contains suitable habitat for fish. Only non-native fish are expected to survive in this location. Photo is facing west depicting a local angler fishing for common carp.

Photo 7. Photo showing Area 6, with suitable fish habitat for species adapted to high saline content waters. Photo is facing south.

Photo 7. Photo showing an adjacent wetland area to Area 6, which opens to the ocean. This area is known as the Golden Shore Marine Reserve and is a mitigation site for the Rainbow Harbor. Photo is facing southwest.

Attachment D – CNDDB Occurrences and Survey Area Maps





Biological Survey Areas

One-Mile Project Buffer

CNDDB Plant Occurences

CNDDB Animal Occurences

Attachment D

Devil's Gate Sediment Removal Project

CNDDB Occurences and Survey Areas

Version Date: 12/19/2012

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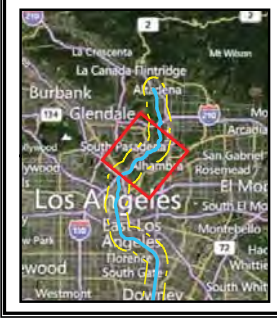

Biological Survey Areas

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CNDDB Plant Occurences

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Attachment D
Devil's Gate Sediment Removal Project
CNDDB Occurences and Survey Areas

Version Date: 12/19/2012

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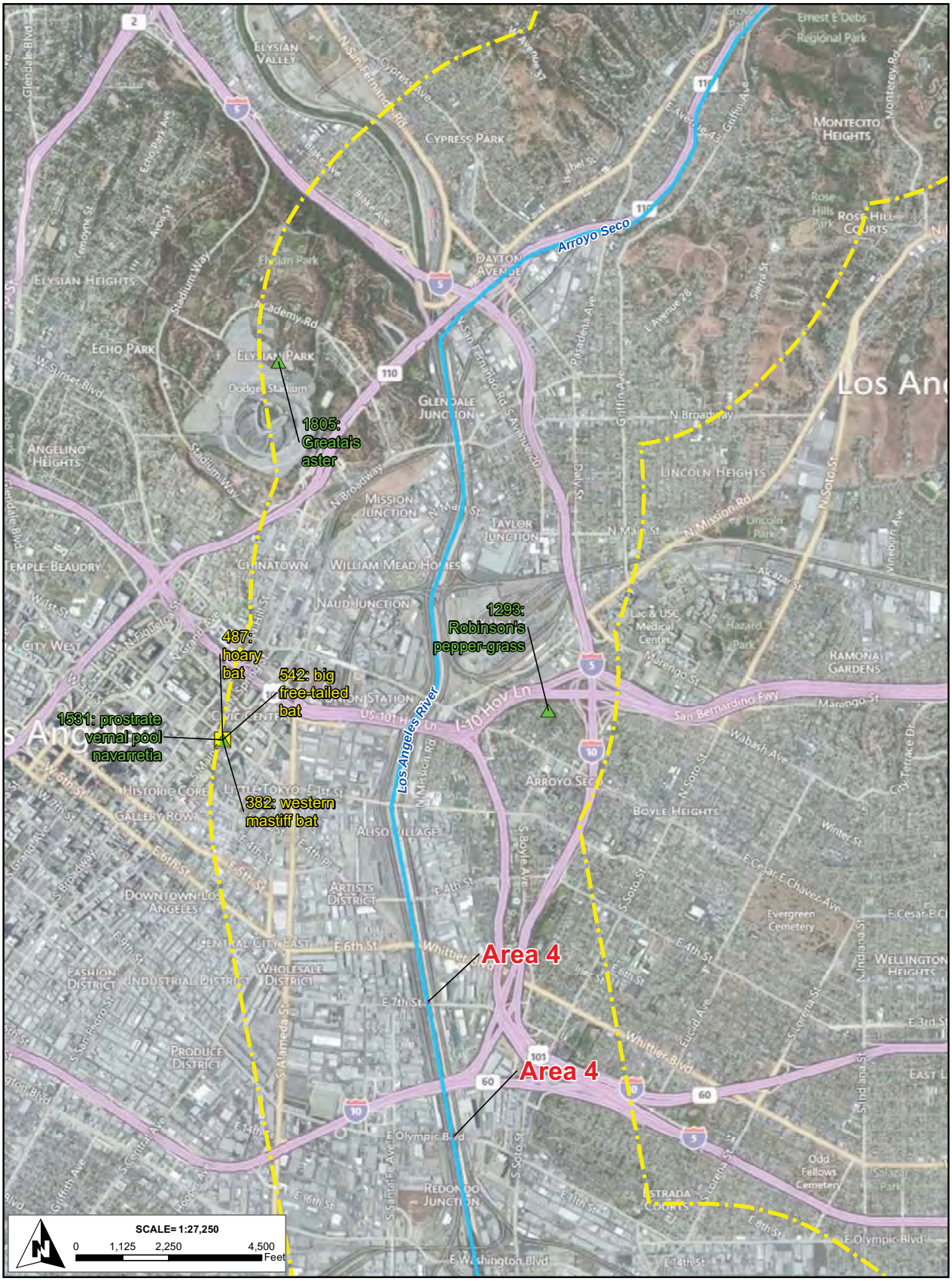

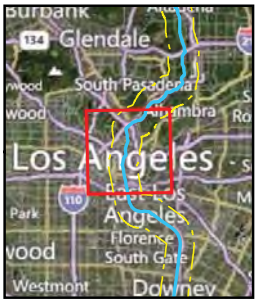

Biological Survey Areas
One-Mile Project Buffer
CNDDB Plant Occurences
CNDDB Animal Occurences

Attachment D
Devil's Gate Sediment Removal Project
CNDDB Occurences and Survey Areas

Version Date: 12/19/2012

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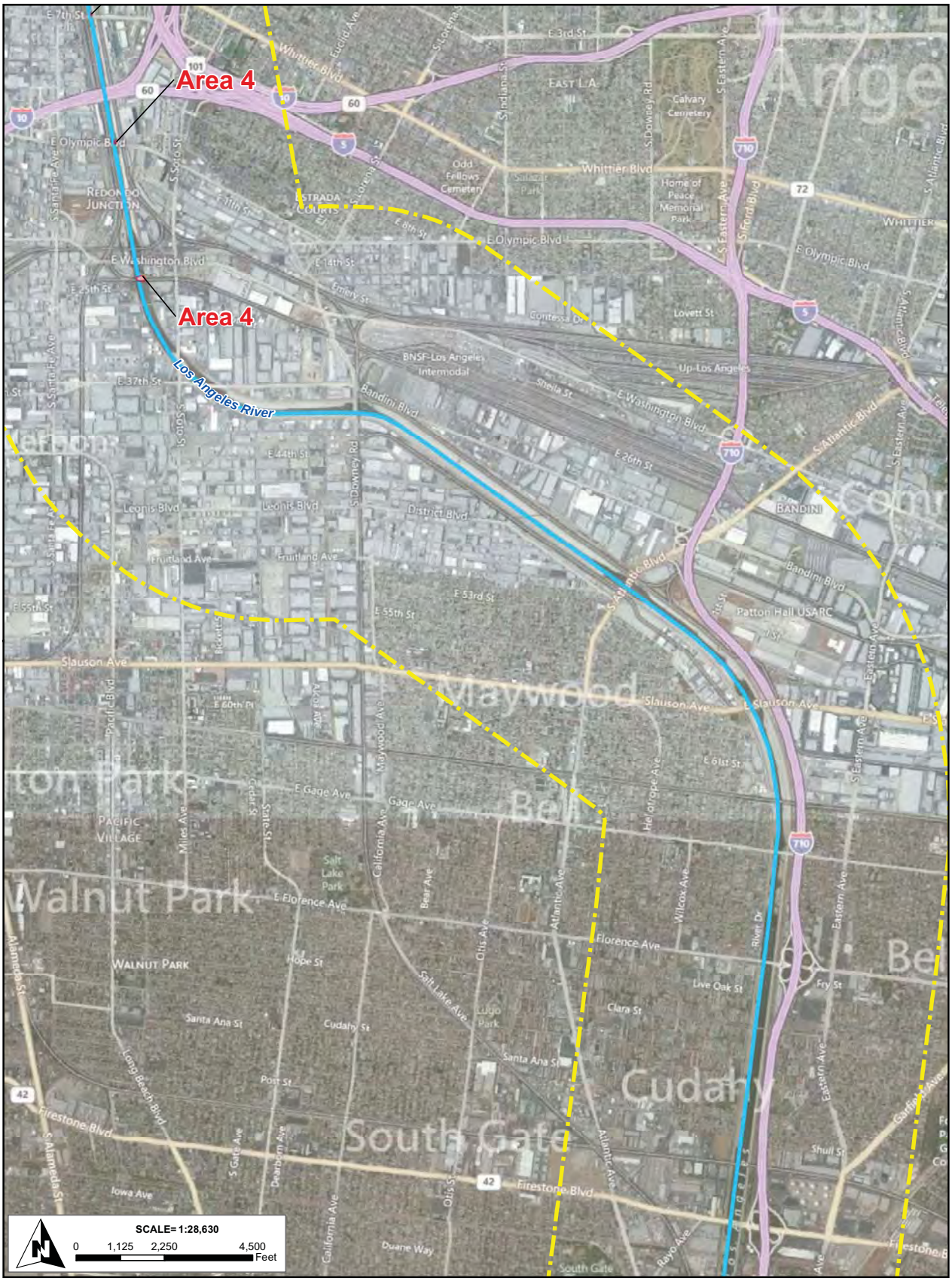

Attachment D
Devil's Gate Sediment Removal Project
CNDDB Occurences and Survey Areas

Version Date: 12/19/2012

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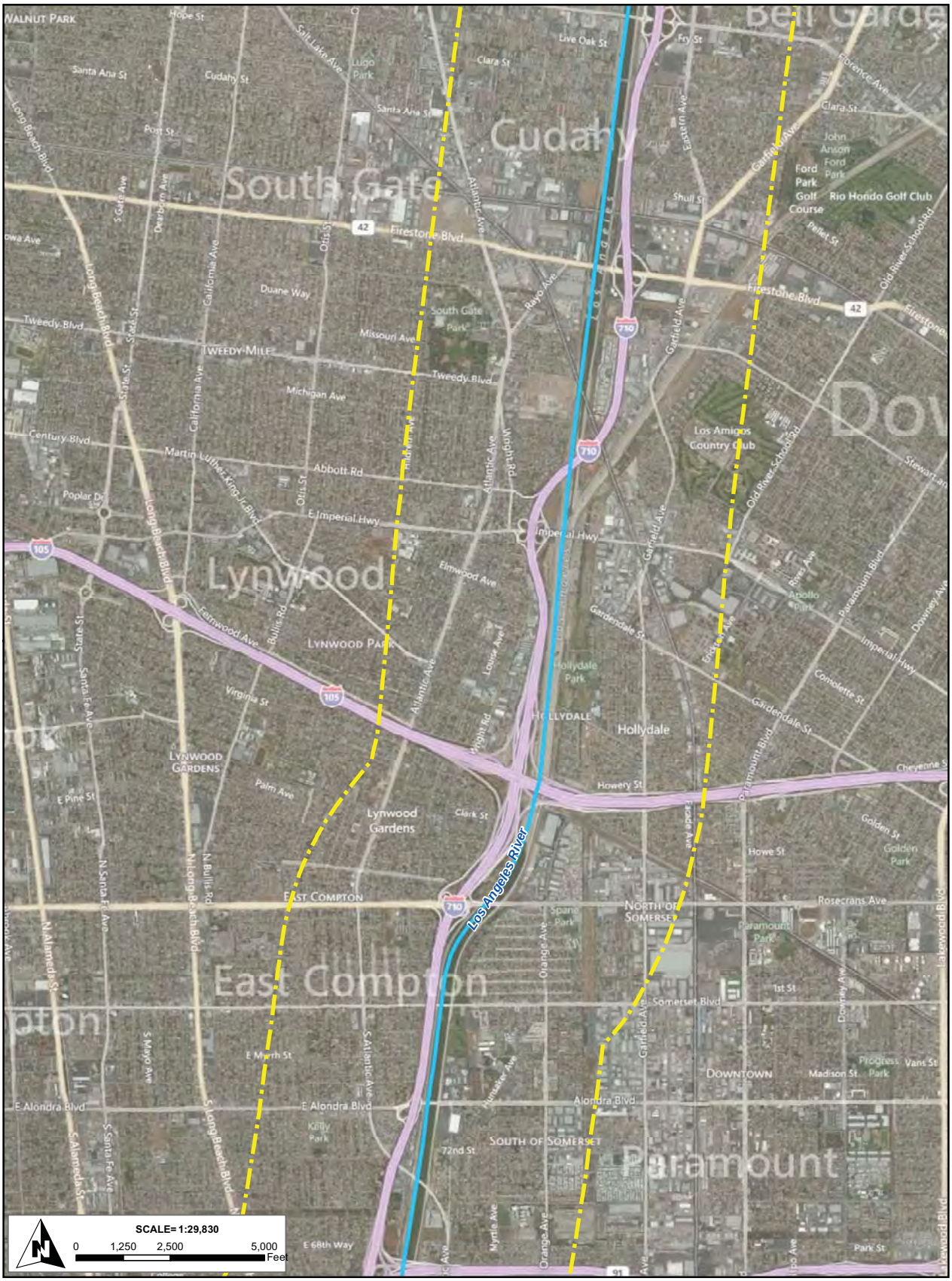

Attachment D
Devil's Gate Sediment Removal Project
CNDDB Occurences and Survey Areas

Version Date: 12/19/2012

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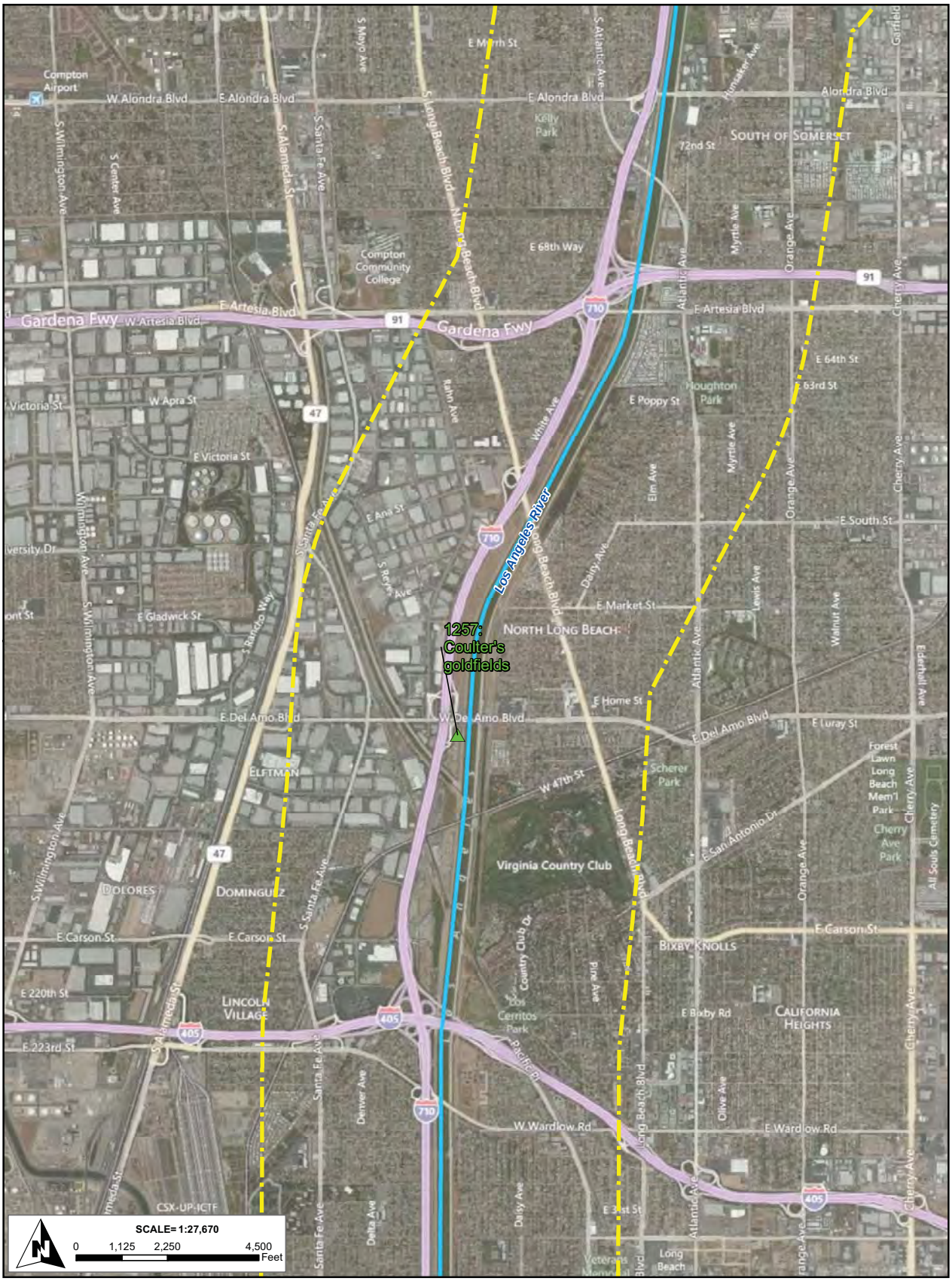

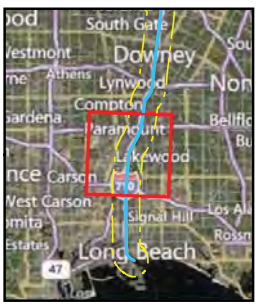

Biological Survey Areas

One-Mile Project Buffer

CNDDB Plant Occurences

CNDDB Animal Occurences

Attachment D

Devil's Gate Sediment Removal Project

CNDDB Occurences and Survey Areas

Version Date: 12/19/2012

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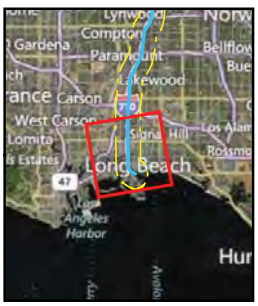

Biological Survey Areas

One-Mile Project Buffer

CNDDB Plant Occurences

CNDDB Animal Occurences

Attachment D

Devil's Gate Sediment Removal Project

CNDDB Occurences and Survey Areas

Version Date: 12/19/2012

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Attachment E – Golden Shore Marine Biological Reserve Map

Golden Shore Marine Biological Reserve

Attachment E
Devil's Gate Sediment Removal Project
Golden Shore Marine Biological Reserve

Version Date: 11/28/2012

CHAMBERS GROUP

APPENDIX D 3– Least Bell's Vireo Survey Report

October 14, 2013
(20592)

Thomas Budinger
Water Resources Division
County of Los Angeles Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803

SUBJECT: FOCUSED PROTOCOL SURVEYS FOR LEAST BELL'S VIREO AT THE DEVIL'S GATE RESERVOIR, LOS ANGELES COUNTY, CALIFORNIA

Dear Mr. Budinger:

Chambers Group, Inc. (Chambers Group) biologists conducted focused surveys for least Bell's vireo (*Vireo bellii pusillus,* LBVI) for the Devil's Gate Reservoir Sediment Removal and Management Project (Project) located in the city of Pasadena, Los Angeles County, California. The results of the surveys are presented in this letter report.

PROJECT LOCATION

The proposed Project site is located in the Devil's Gate Reservoir in the City of Pasadena, in Los Angeles County, California, on Assessor's Parcel Numbers 5823015902, 5823004900, 5823003911, 5823003910, 5823003907, 5823003909, and 5823031900. The Project site can be found in the La Cañada, San Pascual-Grafias, and San Rafael special survey areas in the California United States Geological Survey (USGS) 7.5-minute *Pasadena* topographic quadrangle (Attachment 1).

PROJECT DESCRIPTION

The proposed Project would remove sediment from the Devil's Gate Reservoir. Sediment would be removed from an approximate 124-acre excavation area within the reservoir (Attachment 2). The excavation area is a combination of bare ground, with some native and non-native vegetation. This area behind the Devil's Gate Dam is inundated seasonally, and some of the vegetation is regularly washed out by storm flows. The accumulated sediment will be removed with construction equipment including but not limited to: bulldozers, front-end loaders, scrapers, and trucks. Depending on the moisture of the sediment removed, the sediment may need to be stockpiled for drying to occur. Stockpiling of the sediment would occur on-site, within the Devil's Gate Reservoir.

LEAST BELL'S VIREO NATURAL HISTORY

The LBVI was state listed as an endangered subspecies of Bell's vireo by the California Department of Fish and Wildlife (CDFW) in 1980 and federally listed as endangered by the United States Fish and Wildlife

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Service (USFWS) in 1986. Critical habitat for the LBVI was designated by USFWS in 1994. The LBVI subspecies is restricted to coastal and inland southern California and Baja California, Mexico. Its winter range extends along the Pacific coast from northern Mexico south to northern Nicaragua.

The LBVI is a small, gray songbird with pale yellow wash on its sides, two faint wing bars, and a faint eye ring. Preferred nesting habitat is low, dense, scrubby vegetation in early successional areas that are particularly dependent on riparian areas. Habitats may include willow woodlands and dense mule fat (*Baccharis salicifolia* subsp. *salicifolia*), scrub oak (*Quercus berberidifolia*), coastal chaparral, and mesquite (*Prosopis* sp.) patches with dense, early successional understories. The two major factors in the decline of LBVI populations are loss of habitat and nest parasitism by the brown-headed cowbird (*Molothrus ater*).

SURVEY HISTORY

A biological reconnaissance-level survey conducted by Chambers Group on May 27, 2010, determined that suitable habitat for LBVI was present within the Project site (Chambers Group 2010a). Focused surveys for LBVI were then conducted in 2010 (Chambers Group 2010b) with negative results.

In July 2012, an adult and a juvenile were observed in the proposed Project site during the week of July 15, 2012 (CDFW 2013). Because LBVI have high site fidelity, and are likely to return to the same site to breed every year, focused surveys for LBVI were conducted in 2013 to determine if they are breeding within the Project site.

METHODS

Focused surveys were conducted within habitat that was determined to be suitable for LBVI by the surveying biologist. The reconnaissance-level survey on May 27, 2010 identified vegetation communities associated with LBVI, and the vegetation community map was updated in May 2013 by Chambers Group botanists.

Eight focused LBVI surveys were conducted at least 10 days apart by Chambers Group qualified biologists Linette Lina and Corey Vane, who are familiar with the songs, whisper songs, calls, scolds, and visual identification of least Bell's vireo. The focused surveys were conducted according to USFWS guidelines (USFWS 2001).

All surveys were conducted on foot by looking and listening for LBVI in all suitable riparian habitats within the Project site (Attachment 3). Surveys were conducted during favorable weather conditions. Surveys were not conducted during excessive heat, cold, wind, rain, or other inclement weather that would be reasonably expected to reduce bird activity and consequential detection. No more than 3 linear kilometers or 50 hectares of suitable habitat were surveyed during any single survey day.

Observations of the songs, scolds, whisper calls, flight patterns, behaviors, and plumage characteristics were used in conjunction to ascertain presence/absence of LBVI. Biologists conducted the surveys from optimal stationary locations to see and hear LBVI without harming any other wildlife species in the area.

The locations of any LBVI and other sensitive species were documented and mapped (Attachment 4), and California Natural Diversity Database (CNDDB) forms were prepared (Attachment 5). If leg bands were observed, they were noted. Observations and numbers of brown-headed cowbirds also were noted and mapped (Attachment 4). All observed wildlife species were documented (Attachment 6).

RESULTS

Vegetation Communities

The Project site is a flood control basin consisting of riparian and ruderal communities plus large scoured areas created from landslides and runoff after the 2009 Station Fire. The Project site is surrounded by upland vegetation communities, developed parkland (Hahamongna Watershed Park), residential and business developments, and foothills to the northeast. Approximately 64.59 acres (26.12 hectares) of suitable habitat (riparian woodland, mule fat scrub, riparian herbaceous habitat) for LBVI were present within the Project site (Attachment 3). The riparian habitats that are suitable for LBVI are discussed below. Plant communities and associations are described with the categories set forth in *A Manual of California Vegetation* (Holland 1986; Gray and Bramlet 1992). Plant nomenclature follows that of *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012).

Riparian Woodland / Black Willow Series

Black Willow Series, as described by Sawyer and Keeler-Wolf (1995), exists when black willow (*Salix gooddingii*) is the sole dominant shrub or tree in the canopy. This community occurs in habitats seasonally flooded and saturated with freshwater. This community occurs in floodplains along rivers and streams and on the edges of meadows. Species that usually occur with black willow include California sycamore (*Platanus racemosa*), coyote brush (*Baccharis pilularis*), Fremont cottonwood (*Populus fremontii*), blue elderberry (*Sambucus nigra* subsp. *caerulea*), mule fat (*Baccharis salicifolia*), white alder (*Alnus rhombifolia*), and other willows (*Salix* sp.).

In 2010, the southern half of the proposed Project site was primarily composed of the Black Willow Series. In 2013, this series is present in large and small patches throughout the proposed Project site. Black willow is dominant in this community. Other native species include mule fat, Fremont cottonwood, black cottonwood (*Populus trichocarpa),* white alder, red willow (*Salix laevigata*), and California dodder (*Cuscuta californica*). Non-native species in this community include gum tree (*Eucalyptus* sp.) and tree tobacco (*Nicotiana glauca*). Portions of this community are lacking secondary structure due to unstable sediment accumulation and subsequent scouring during storm events.

Mule Fat Scrub

Mule Fat Scrub consists of dense stands of mule fat with lesser amounts of willow species. This community type is classified as a mixed evergreen-deciduous shrubland with a continuous canopy and a sparse understory. This community typically occupies intermittent streambeds and seeps; and it occurs at elevations ranging from sea level to 4,100 feet amsl (Holland 1986; Gray and Bramlet 1992).

The Mule Fat Scrub community was present in the proposed Project site during both surveys. The native plant species found include mule fat and black willow. Non-native species found within this community in the proposed Project site include Italian thistle (*Carduus pycnocephalus*), poison hemlock (*Conium maculatum*), and short-podded mustard *(Hirschfeldia incana*).

Riparian Herbaceous

Riparian Herbaceous vegetation is an early successional stage of willow scrub and riparian forest communities. Flooding (or other disturbance factors) often scours woody riparian vegetation away, and the site is rapidly colonized by pioneer wetland herbaceous plants (Gray and Bramlet 1992).

In 2010, sparse riparian herbaceous vegetation was present in the northern half of the proposed Project site. In 2013, riparian herbaceous vegetation was found near the face of the dam. Native plant species found in this community include emergent mule fat, black willow, and red willow. Nonnative plant species in this community include curly dock (*Rumex crispus*), wild radish (*Raphanus sativus*), and short-podded mustard.

Survey Conditions

Survey conditions are presented in Table 1.

Table 1: Survey Conditions

Date	Surveyor	Time		Temperature		Wind		Cloud Cover		Precipitation	
		Start	End	Start	End	Start	End	Start	End	Start	End
04/15/13	Linette Lina	6:45 A.M.	7:30 A.M.	Canceled due to light rain and reduced visibility. Second attempt on 4/17/13.							
04/17/13	L. Lina	6:20 A.M.	11:15 A.M.	50.5	67.0	1-2	2-3	0%	0%	0	0
04/29/13	L. Lina	6:40 A.M.	11:15 A.M.	54.7	71.3	1-2	0-1	100%	0%	Foggy (visible to 600ft)	0
05/13/13	L. Lina	6:20 A.M.	11:00 A.M.	61.9	94.3	0-1	3-4	0%	0%	0	0
05/23/13	L. Lina	6:00 A.M.	1:00 P.M.	58.0	67.4	0	2-3	95%	90%	0	0
06/05/13	L. Lina	6:10 A.M.	11:45 A.M.	60.3	73.5	0	3-4	100%	0%	0	0
06/17/13	L. Lina, Corey Vane	6:20 A.M.	12:20 P.M.	55	77.7	0	1	0%	0%	0	0
06/27/13	L. Lina	6:20 A.M.	11:45 A.M.	65.0	89.1	0	4-5	0%	0%	0	0
07/09/13	L. Lina	5:55 A.M.	11:30 A.M.	62.9	92.0	0	4	0%	15%	0	0

*All temperature readings are in Fahrenheit
**All wind readings are in miles per hour

Least Bell's Vireo

One LBVI male was observed within the Project site (Attachment 4) during the April 29, May 23, June 5 and 17, 2013 surveys. No leg bands were observed. The LBVI male was extremely vocal, continuously singing throughout the mornings, and appeared to be very territorial. It did not appear to be paired, however, and no nesting behavior was observed.

The individual was mostly observed within the southwestern region of the Project site, within a disturbed patch of three- to four-year old willows within a thick understory of short-podded mustard and poison hemlock (GPS coordinates UTM NAD 83 Zone 11S 0391551 E 3783645 N). It also occupied the western border of the Project site, within more mature black willows. During the May 23, 2013 survey, however, it was observed in the southeastern region of the Project site (GPS coordinates approximately UTM NAD 83 Zone 11S 0391875 E 3783523 N). It flew to different locations within the Riparian Woodland in the southern region, singing continuously and eventually returning to the southwestern region of the Project site. The LBVI male appeared to expand its territory due to the lack of competition from other LBVI males and in order to attempt to find a LBVI female.

Shortly before the June 17, 2013 survey, recreational activities within the Project site increased dramatically due to the initiation of children's summer camps within Hahamongna Watershed Park and the flood control reservoir. Camp activities, including clearing vegetation for children's play areas within the Riparian Woodland, cutting new trails through the occupied LBVI habitat, and increasing sound disturbance within the occupied LBVI habitat, may have possibly caused it to disperse from the Project site. The LBVI was no longer observed during the June 27 or July 9, 2013 surveys.

Other Sensitive Species

Yellow Warbler

Territorial and paired yellow warblers (*Setophaga petechia*) were incidentally observed during several surveys (Attachment 4). The maximum number observed was 10 individuals, during the June 17, 2013, survey (Attachment 5).

Yellow-breasted Chat

Yellow-breasted chats (*Icteria virens*) were incidentally observed in two locations during the focused surveys (Attachments 4 and 5). One was observed in the western region of the Project site during the April 29, 2013 survey. One was observed in the southwestern region of the Project site during the June 27 and July 9, 2013 surveys. The singing yellow-breasted chat in the southwestern region is presumed to be the same individual and since it was observed later in the breeding season, is presumed to be territorial.

Brown-Headed Cowbird

Brown-headed cowbirds were observed throughout the survey area during several surveys (Attachment 4). The maximum number of brown-headed cowbirds detected during any one survey visit was 10 individuals, scattered throughout the Project site during the June 17, 2013, survey.

CONCLUSION

One territorial LBVI male was present within the Project site that did not appear to be paired or nesting during the 2013 season.

Please contact me at (949) 261-5414 ext. 7242 if you have any questions or concerns regarding these results.

Sincerely,

CHAMBERS GROUP, INC.

Linette Lina
Biologist

ENCLOSURES

Attachment 1 – Project Vicinity
Attachment 2 – Project Location
Attachment 3 – LBVI Survey Area
Attachment 4 – LBVI Survey Results Map
Attachment 5 – CNDDB Forms
Attachment 6 – Wildlife Species Observed

REFERENCES

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2010b *2010 Focused Least Bell's Vireo Survey Report for the Devil's Gate Reservoir Project in the City of Pasadena, Los Angeles County, CA.* Chambers Group, Inc., Santa Ana, CA. Prepared for the County of Los Angeles Department of Public Works.

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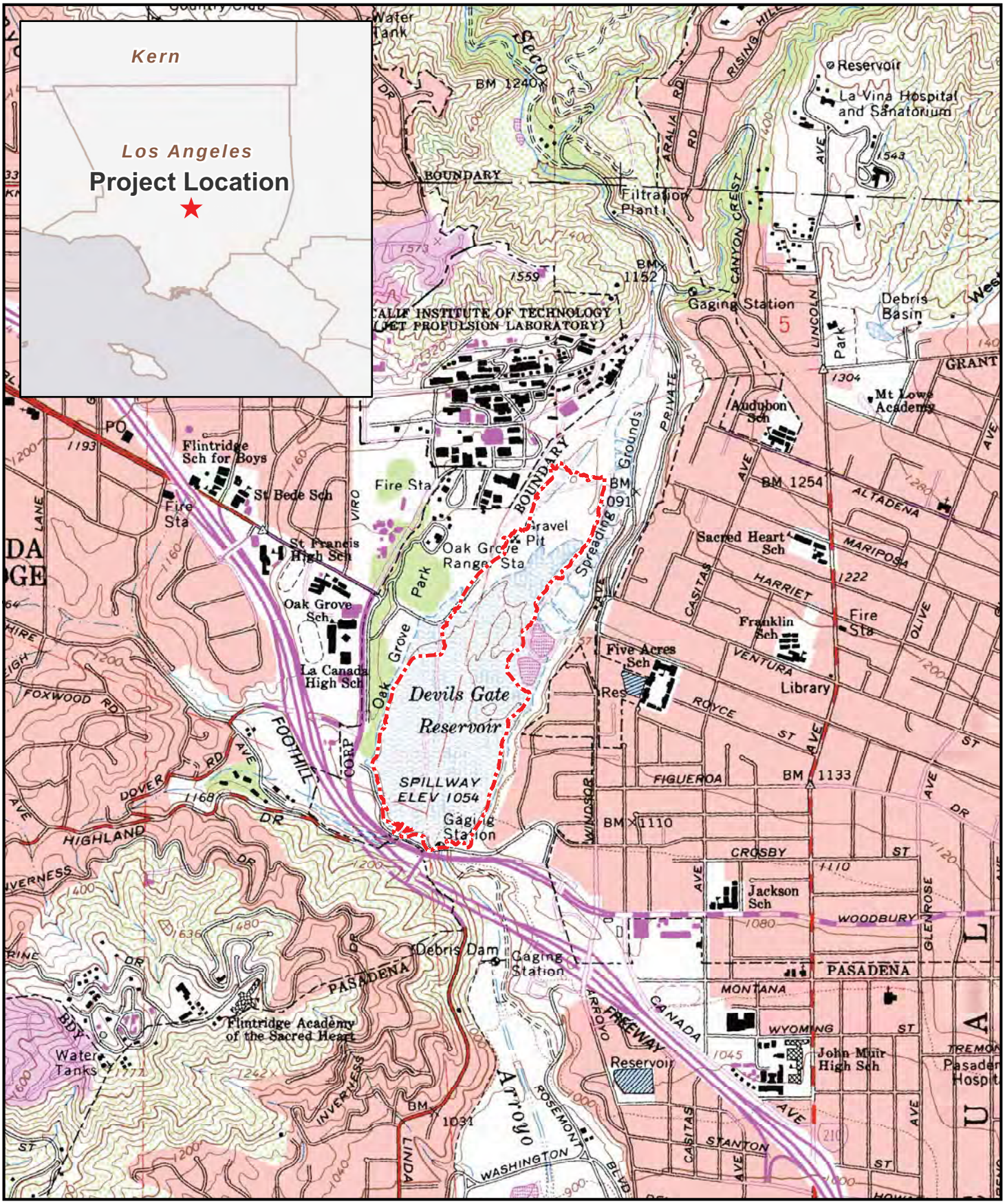
ATTACHMENT 1 – PROJECT VICINITY



Project Area

N

0 500 1,000 2,000

Feet

Attachment 1

Devil's Gate Reservoir Sediment Removal and Management Project

Project Vicinity Map

Name: 20592 Attachment 1 Project Vicinity Map.Mxd
Print Date: 10/3/2013, Author: phuls

CHAMBERS GROUP

ATTACHMENT 2 – PROJECT LOCATION

Project Area

Attachment 2

Devil's Gate Reservoir Sediment Removal and Management Project

Project Location Map

0 500 1,000 2,000

Feet

Name: 20592 Attachment 2 Project Location Map.Mxd
Print Date: 10/3/2013, Author: stondre

CHAMBERS GROUP

ATTACHMENT 3 – LBVI SURVEY AREA

LBVI Survey Area

Proposed Project Boundary

N

0 250 500 1,000

Feet

Attachment 3

Devil's Gate Reservoir Sediment Removal and Management Project

LBVI Survey Area Map

Name: 20592 Attachment 3 Project Survey Area Map.Mxd
Print Date: 10/10/2013, Author: stondre

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ATTACHMENT 4 – LBVI SURVEY RESULTS MAP

Project Area
Survey Area
Least Bell's Vireo Territory
Least Bell's Vireo
Yellow-breasted Chat
Yellow Warbler
Brown-headed Cowbird

N

0 250 500 1,000
Feet

Attachment 4

Devil's Gate Sediment Removal Project

LBVI Survey Results Map

Name: 20592 Attachment 4 Survey Results Map.Mxd
Print Date: 8/27/2013, Author: phuls

CHAMBERS GROUP

ATTACHMENT 5 – CNDDB FORMS

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@wildlife.ca.gov

Date of Field Work (mm/dd/yyyy): 07/09/2013

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Vireo bellii pusillus*

Common Name: Least Bell's Vireo

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 1 Subsequent Visit? ☑ yes ☐ no

Is this an existing NDDB occurrence? 348 Yes, Occ. # ☐ no ☐ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Linette Lina
Address: 5 Hutton Centre Dr. Suite 750
Santa Ana, CA 92707
E-mail Address: llina@chambersgroupinc.com
Phone: (949) 261-5414

Plant Information

Phenology: 50 % vegetative 25 % flowering 25 % fruiting

Animal Information

1 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ wintering ☑ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Devil's Gate Reservoir/Hahamongna Watershed Park, in the city of Pasadena between Altadena and La Canada Flintridge, north of I-210.

County: Los Angeles Landowner / Mgr.: County of Los Angeles
Quad Name: Pasadena Elevation: 320 m
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): ArcGIS
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____
DATUM: NAD27 ☐ NAD83 ☑ WGS84 ☐ Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☑ *OR* Geographic (Latitude & Longitude) ☐
Coordinates: 0391551 E 3783645 N

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*

Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Riparian Woodland dominated by Salix goodingii, Baccharis salicifolia, Conium maculatum, Hirshfeldia incana.

One territorial male observed singing continuously in same area during several survey visits. No female, nest, or young observed. No leg bands observed.

Please fill out separate form for other rare taxa seen at this site.

Site Information

Overall site/occurrence quality/viability (site + population): ☐ Excellent ☐ Good ☑ Fair ☐ Poor

Immediate AND surrounding land use: Flood control basin, recreational park, residential area, business area

Visible disturbances: Scouring from flood events, recreation

Threats: Flood control activities including sediment removal, park maintenence, recreational activities, brown-headed cowbirds

Comments: Individual was observed during focused Least Bell's Vireo surveys on 4/29, 5/23, 6/5, and 6/17 surveys.

Determination *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: Known vocalizations and visual characteristics

Photographs *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☑
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@wildlife.ca.gov

Date of Field Work (mm/dd/yyyy): 07/09/2013

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Icteria virens*

Common Name: Yellow-breasted Chat

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 1 Subsequent Visit? ☑ yes ☐ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Linette Lina
Address: 5 Hutton Centre Dr. Suite 750
Santa Ana, CA 92707
E-mail Address: llina@chambersgroupinc.com
Phone: (949) 261-5414

Plant Information

Phenology: 50 % vegetative 25 % flowering 25 % fruiting

Animal Information

1 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ wintering ☑ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ other

***Location Description* (please attach map AND/OR fill out your choice of coordinates, below)**

Devil's Gate Reservoir/Hahamongna Watershed Park, in the city of Pasadena between Altadena and La Canada Flintridge, north of I-210.

County: Los Angeles Landowner / Mgr.: County of Los Angeles
Quad Name: Pasadena Elevation: 320 m
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): ArcGIS
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____
DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ ***OR*** Geographic (Latitude & Longitude) ☑
Coordinates: Latitude: 34.187331 Longitude: -118.176290

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*
Riparian Woodland dominated by Salix goodingii, Baccharis salicifolia, Conium maculatum, Hirshfeldia incana.

One territorial male observed singing in same area over two site visits in June and July.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☐ Good ☑ Fair ☐ Poor

Immediate AND surrounding land use: Flood control basin, recreational park, residential area, business area

Visible disturbances: Scouring from flood events, recreation

Threats: Flood control activities including sediment removal, park maintenence, recreational activities

Comments: Incidental observations during biological surveys for other species, on 6/27 and 7/09 site visits. Because of the late season dates of observation, this individual is presumed to be territorial.

Determination: *(check one or more, and fill in blanks)*
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: Known vocalizations and visual characteristics

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☑
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@wildlife.ca.gov

Date of Field Work (mm/dd/yyyy): 07/09/2013

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Setophaga petechia*

Common Name: Yellow Warbler

Species Found? ☑ Yes ☐ No _____ If not, why?

Total No. Individuals 12 Subsequent Visit? ☐ yes ☐ no

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ no ☑ unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Linette Lina
Address: 5 Hutton Centre Dr. Suite 750
Santa Ana, CA 92707
E-mail Address: llina@chambersgroupinc.com
Phone: (949) 261-5414

Plant Information

Phenology: 50 % vegetative 25 % flowering 25 % fruiting

Animal Information

12 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ wintering ☑ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ other

***Location Description* (please attach map AND/OR fill out your choice of coordinates, below)**

Devil's Gate Reservoir/Hahamongna Watershed Park, in the city of Pasadena between Altadena and La Canada Flintridge, north of I-210.

County: Los Angeles Landowner / Mgr.: County of Los Angeles
Quad Name: Pasadena Elevation: 320 m
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ Source of Coordinates (GPS, topo. map & type): ArcGIS
T____ R____ Sec ____, ____ ¼ of _____¼, Meridian: H☐ M☐ S☐ GPS Make & Model _____
DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☐ Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ ***OR*** Geographic (Latitude & Longitude) ☐
Coordinates: See attached map.

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*
Riparian Woodland dominated by Salix goodingii, Baccharis salicifolia, Conium maculatum, Hirshfeldia incana.

Territorial males observed singing and perching in roughly the same areas over several survey visits. Occasional female observed.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☐ Good ☑ Fair ☐ Poor
Immediate AND surrounding land use: Flood control basin, recreational park, residential area, business area
Visible disturbances: Scouring from flood events, recreation
Threats: Flood control activities including sediment removal, park maintenence, recreational activities
Comments: Incidental observations during biological surveys for other species, from 4/15 through 7/09/13. No nests observed, but the species is presumed to breed in the area because of territorial behavior and residence from Spring through early Summer.

Determination: *(check one or more, and fill in blanks)*
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☑ Other: Known vocalizations and visual characteristics

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☑
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☑ no ☐

ATTACHMENT 6 – WILDLIFE SPECIES OBSERVED

Attachment 6:
Wildlife Species Observed

Scientific Name	Common Name
CLASS AMPHIBIA	**AMPHIBIANS**
BUFONIDAE	**TRUE TOADS**
Anaxyrus boreas halophilus	California toad
CLASS REPTILIA	**REPTILES**
PHRYNOSOMATIDAE	**ZEBRA-TAILED, EARLESS, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNY LIZARDS**
Sceloporus occidentalis	western fence lizard
Uta stansburiana	side-blotched lizard
TEIIDAE	**WHIPTAIL LIZARDS**
Aspidoscelis tigris stejnegeri	coastal whiptail
COLUBRIDAE	**COLUBRID SNAKES**
Salvadora hexalepis virgultea	coast patchnose snake
CLASS AVES	**BIRDS**
ANATIDAE	**DUCKS, GEESE, SWANS**
Anas platyrhynchos	Mallard
Branta canadensis	Canada goose
ACCIPITRIDAE	**HAWKS, KITES, EAGLES**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
ODONTOPHORIDAE	**NEW WORLD QUAIL**
Callipepla californica	California quail
CHARADRIIDAE	**PLOVERS**
Charadrius vociferus	killdeer
COLUMBIDAE	**PIGEONS & DOVES**
Columba livia	rock pigeon*
Zenaida macroura	mourning dove
APODIDAE	**SWIFTS**
Aeronautes saxatalis	white-throated swift
TROCHILIDAE	**HUMMINGBIRDS**
Calypte anna	Anna's hummingbird
Selasphorus sasin	Allen's hummingbird
ALCEDINIDAE	**KINGFISHERS**
Megaceryle alcyon	belted kingfisher
PICIDAE	**WOODPECKERS**
Melanerpes formicivorus	acorn woodpecker
Picoides nuttallii	Nuttall's woodpecker
Picoides pubescens	downy woodpecker
TYRANNIDAE	**TYRANT FLYCATCHERS**

Attachment 6:
Wildlife Species Observed

Scientific Name	Common Name
Contopus sordidulus	western wood-pewee
Empidonax difficilis	Pacific-slope flycatcher
Myiarchus cinerascens	ash-throated flycatcher
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus vociferans	Cassin's kingbird
HIRUNDINIDAE	**SWALLOWS**
Petrochelidon pyrrhonota	cliff swallow
Stelgidopteryx serripennis	northern rough-winged swallow
CORVIDAE	**JAYS & CROWS**
Aphelocoma californica	Western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
PARIDAE	**CHICKADEES, TITMICE**
Baeolophus inornatus	oak titmouse
AEGITHALIDAE	**BUSHTITS**
Psaltriparus minimus	bushtit
TROGLODYTIDAE	**WRENS**
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
SYLVIIDAE	**OLD WORLD WARBLERS**
Chamaea fasciata	wrentit
POLIOPTILIDAE	**GNATCATCHERS**
Polioptila caerulea	blue-gray gnatcatcher
MIMIDAE	**MOCKINGBIRDS, THRASHERS**
Mimus polyglottos	northern mockingbird
Toxostoma redivivum	California thrasher
STURNIDAE	**STARLINGS**
Sturnus vulgaris	European starling*
VIREONIDAE	**VIREOS**
Vireo bellii pusillus	least bell's vireo
Vireo gilvus	warbling vireo
Vireo huttoni	Hutton's vireo
PARULIDAE	**WOOD WARBLERS**
Oreothlypis celata	orange-crowned warbler
Setophaga coronata	yellow-rumped warbler
Setophaga nigrescens	black-throated gray warbler
Setophaga petechia	yellow warbler
Cardellina pusilla	Wilson's warbler

Attachment 6:
Wildlife Species Observed

Scientific Name	Common Name
Geothlypis trichas	common yellowthroat
Icteria virens	yellow-breasted chat
ICTERIDAE	**BLACKBIRDS**
Agelaius phoeniceus	red-winged blackbird
Euphagus cyanocephalus	Brewer's blackbird
Icterus bullockii	Bullock's oriole
Molothrus ater	brown-headed cowbird
EMBERIZIDAE	**EMBERIZIDS**
Melospiza melodia	song sparrow
Passerculus sandwichensis	savannah sparrow
Melozone crissalis	California towhee
Pipilo maculatus	spotted towhee
Zonotrichia leucophrys	white-crowned sparrow
CARDINALIDAE	**CARDINALS**
Piranga ludoviciana	western tanager
Pheucticus melanocephalus	black-headed grosbeak
Passerina caerulea	blue grosbeak
Passerina amoena	lazuli bunting
PSITTACIDAE	**PARROTS**
Amazona sp.	Parrot*
FRINGILLIDAE	**FINCHES**
Spinus psaltria	lesser goldfinch
Spinus tristis	American goldfinch
Carpodacus mexicanus	house finch
Carpodacus purpureus	purple finch
TURDIDAE	**THRUSHES**
Turdus migratorius	American robin
ESTRILDIDAE	**ESTRILDID FINCHES**
Lonchura punctulata	nutmeg manikin*
PTILOGONATIDAE	**SILKY-FLYCATCHERS**
Phainopepla nitens	phainopepla
CLASS MAMMALIA	**MAMMALS**
CANIDAE	**WOLVES & FOXES**
Canis latrans	coyote
LEPORIDAE	**HARES & RABBITS**
Sylvilagus audubonii	desert cottontail
SCIURIDAE	**SQUIRRELS**
Sciurus griseus	western gray squirrel
Sciurus niger	eastern fox squirrel*

Attachment 6:
Wildlife Species Observed

Scientific Name	Common Name
Spermophilus beecheyi	California ground squirrel
FELIDAE	**CATS**
Lynx rufus	bobcat

*Non-native species

APPENDIX D4– Jurisdictional Delineation Report

JURISDICTIONAL DELINEATION REPORT
DEVIL'S GATE RESERVOIR SEDIMENT REMOVAL AND MANAGEMENT PROJECT
IN THE CITY OF PASADENA, LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
Water Resources Division
900 South Fremont Avenue
Alhambra, California 91803

Prepared by:

CHAMBERS GROUP, INC.
5 Hutton Centre Drive, Suite 750
Santa Ana, California 92707
(949) 261-5414

October 2013

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SECTION 1.0 – INTRODUCTION

1.1 PROJECT LOCATION

The Devil's Gate Reservoir Sediment Removal and Management Project (proposed project) is located in the City of Pasadena, in Los Angeles County approximately 14 miles north of downtown Los Angeles (see Figure 1, Project Vicinity Map). The City of La Cañada Flintridge and the community of Altadena are located near the proposed project site to the west and east, respectively. Lying south of the San Gabriel Mountains, the proposed project site is located in the middle portion of the Arroyo Seco watershed. The Arroyo Seco extends approximately 11 miles from the border of the Angeles National Forest to its confluence with the Los Angeles River. Approximately 20,416 acres (39.1 square miles) of both residential and undeveloped land drain into Devil's Gate Reservoir.

The proposed project site (see Figure 1) includes the Devil's Gate Dam and Reservoir and covers approximately 120 acres. The Devil's Gate Reservoir captures stormwater, sediment, and debris during storm events and retains stormwater to prevent high flow rates from overwhelming the downstream flood control channel.

The topography in the vicinity of the proposed project site is generally flat with a slight incline to the north. The San Gabriel Mountains are located to the north of the proposed project site, and are characterized by both the foothills and steep slopes associated with mountainous terrain.

1.2 PROJECT DESCRIPTION

The proposed project would remove approximately 2.9 million cubic yards of sediment from the Devil's Gate Reservoir. Sediment would be removed from the 120-acre excavation area within the reservoir. The excavation area is a combination of bare ground, with some native and non-native vegetation. This area behind the Devil's Gate Dam is inundated seasonally, and some of the vegetation is regularly washed out by storm flows. The accumulated sediment will be removed with construction equipment and will be trucked off-site to the existing facilities in Irwindale or Azusa or trucked to the west and placed in one of the existing facilities in Sun Valley.

Historically, as storm events have deposited sediment in the reservoir, native and non-native vegetation have become established in the sediment. During subsequent storm events some of the vegetation and trees have been washed out by storm flows or submerged when the reservoir level rises, or buried under sedimentation. Despite the dynamic changes to water elevation and flows in the reservoir, mature black willow trees, Riversidean alluvial fan sage scrub, mule fat scrub, and riparian vegetation have thrived in the reservoir. During storm events following the 2009 Station Fire, a large portion of the reservoir vegetation was buried in sediment; however, significant amounts of vegetation, including numerous mature willow trees, remain intact.

In order to remove the sediment from the reservoir, trees and vegetation growing within the excavation areas will need to be removed. The accumulated sediment will be excavated with construction equipment including but not limited to approximately four front loaders with 4-cubic-yard buckets, two bulldozers, one excavator, one grader, one water truck, and two tender trucks (for fuel and maintenance). Vegetation and organic debris will be separated from the sediment. Coarse material may need to be processed through sorters and crushers to be hauled offsite. Depending on the moisture

content of the sediment removed, the sediment may need to be stockpiled to allow the sediment to dry. Stockpiling of the sediment will occur onsite within Devil's Gate Reservoir.

Proposed Project Boundary

SCALE=1:100,000

0 1.25 2.5

Miles

Figure 1

Devil's Gate Reservoir Sediment Removal and Management Project

Project Vicinity and Location Map

Version Date: 10/11/2013

CHAMBERS GROUP

\\Cgi-gisdata01\gis_data\Projects\20000s\20201 - 20400\20346 Devil's Gate EIR\20346 JD Figure 1 - Site Vicinity and Location Map.mxd

SECTION 2.0 – JURISDICTIONAL CRITERIA

2.1 UNITED STATES ARMY CORPS OF ENGINEERS

Pursuant to Section 404 of the CWA, the United States Army Corps of Engineers (USACE) regulates the discharge of dredged and/or fill material into waters of the United States. The term "waters of the United States" is defined by 33 Code of Federal Regulations (CFR) Part 328 and currently includes: (1) all navigable waters (including all waters subject to the ebb and flow of the tide), (2) all interstate waters and wetlands, (3) all other waters (e.g., lakes, rivers, intermittent streams) that could affect interstate or foreign commerce, (4) all impoundments of waters mentioned above, (5) all tributaries to waters mentioned above, (6) the territorial seas, and (7) all wetlands adjacent to waters mentioned above. Waters of the United States do not include (1) waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act (CWA), and (2) prior converted cropland. Waters of the United States typically are separated into two types: (1) wetlands and (2) "other waters" (non-wetlands) of the United States.

Wetlands are defined by 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support … a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987, the USACE published a manual (1987 Wetland Manual) to guide its field personnel in determining jurisdictional wetland boundaries. This manual was amended in 2008 to the USACE 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (2008 Arid West Supplement). Currently, the 1987 Wetland Manual and the 2008 Arid West Supplement provide the legally accepted methodology for identification and delineation of USACE-jurisdictional wetlands in southern California.

In the absence of wetlands, the limits of USACE jurisdiction in nontidal waters, including intermittent Relatively Permanent Water (RPW) streams, extend to the Ordinary High Water Mark (OHWM), which is defined by 33 CFR 328.3(e) as:

> *… that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

On January 9, 2001, the U.S. Supreme Court ruled (in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*) (SWANCC) that USACE jurisdiction does not extend to previously regulated isolated waters, including but not limited to isolated ponds, reservoirs, and wetlands. Examples of isolated waters that are affected by this ruling include vernal pools, stock ponds, lakes (without outlets), playa lakes, and desert washes that are not tributary to navigable or interstate waters or to other jurisdictional waters.

A joint guidance by EPA and USACE was issued on June 5, 2007, to clarify circumstances where a CWA Section 404 permit would be required before conducting activities in wetlands, tributaries, and other waters. This guidance is consistent with the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208 [2006]) (*Rapanos*), which address the jurisdiction over waters of the United States under the CWA (33 U.S.C. §1251 et seq.). This guidance was revised on December 2, 2008, based on consideration of public comments on the 2007 guidance and the agencies' experience in implementing the *Rapanos* decision. Draft guidance was circulated in April 2011

to supersede both the 2003 SWANCC guidance and 2008 Rapanos decision; however, this guidance is not finalized and lacks the force of law.

USACE will continue to assert jurisdiction over Traditionally Navigable Waters (TNWs), wetlands adjacent to TNW, non-navigable tributaries of TNW that are Relatively Permanent Waters (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries.

USACE generally will not assert jurisdiction over swales or erosional features (e.g., gullies or small washes characterized by low volume, infrequent, or short duration flow) or non-tidal drainage ditches (including roadside ditches) that are (1) excavated wholly in and draining only uplands and (2) that do not carry a relatively permanent flow of water. USACE defines a drainage ditch as:

> *A linear excavation or depression constructed for the purpose of conveying surface runoff or groundwater from one area to another. An "upland drainage ditch" is a drainage ditch constructed entirely in uplands* (*i.e., not in waters of the United States*) *and is not a water of the United States, unless it becomes tidal or otherwise extends the ordinary high water line of existing waters of the United States.*

Furthermore, USACE generally does not consider "[a]rtificially irrigated areas which would revert to upland if the irrigation ceased" to be subject to their jurisdiction. Such irrigation ditches are linear excavations constructed for the purpose of conveying agricultural water from the adjacent fields. Therefore, such agricultural ditches are not considered to be subject to USACE jurisdiction.

USACE will use fact-specific analysis to determine whether waters have a significant nexus with (1) TNW for non-navigable tributaries that are not relatively permanent (non-RPW); (2) wetlands adjacent to non-navigable tributaries that are not relatively permanent; and (3) wetlands adjacent to, but that do not directly abut, a relatively permanent non-navigable tributary. According to USACE, *"a significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters,"* including consideration of hydrologic and ecologic factors. A primary component of this determination lies in establishing the connectivity or lack of connectivity of the subject drainages to a TNW.

In May 2007, USACE and EPA jointly published and authorized the use of the *Jurisdictional Determination Form Instructional Guidebook* (USACE 2007). The form and guidebook define how to determine if an area is USACE jurisdictional and if a significant nexus exists per the Rapanos decision. A nexus must have more than insubstantial and speculative effects on the downstream TNW to be considered a significant nexus. This guidebook is updated by the 2008 Arid West Supplement and the 2010 *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*.

2.2 REGIONAL WATER QUALITY CONTROL BOARD

Under Porter-Cologne, the State Water Resources Control Board (SWRCB) and the local Regional Water Quality Control Boards (RWQCB) regulate the discharge of waste into waters of the State. Waters of the State are defined by Porter-Cologne as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code Section 13050(e)). Waters of the State broadly includes

all waters within the State's boundaries (public or private), including waters in both natural and artificial channels.

Discharges of waste include "fill, any material resulting from human activity, or any other 'discharge' that may directly or indirectly impact 'waters of the state'". Porter-Cologne reserves the right for the State to regulate activities that could affect the quantity and/or quality of surface and/or groundwaters, including isolated wetlands, within the State.

The SWRCB and RWQCBs define a wetland area (under normal circumstances) as: (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area either lacks vegetation or the vegetation is dominated by hydrophytes. Places lacking vegetation but otherwise meeting the hydrology and substrate criteria for wetlands are defined as wetlands.

Under Section 401 of the CWA, the RWQCB is responsible for regulating, through state water quality certification, any proposed federally permitted activity which may result in a discharge to water bodies, including wetlands. Section 401 gives the RWQCB the authority to regulate waters of the United States and waters of the State, which can expand beyond the waters of the United States. Therefore, when an activity results in fill or discharge directly below the OHWM of jurisdictional Waters of the United States (federal jurisdiction), a CWA Section 401 Water Quality Certification is required from the RWQCB.

If a proposed project is not subject to CWA Section 401 certification, but involves activities that may result in a discharge to waters of the State, the proposed project may still be regulated under Porter-Cologne and may be subject to waste discharge requirements. In cases where waters apply to both CWA and Porter-Cologne, RWQCB may consolidate permitting requirements to one permit.

2.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Game Code, the California Department of Fish and Wildlife (CDFW) regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife. CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes "watercourses having surface or subsurface flow that supports or has supported riparian vegetation" (California Code of Regulations, Title 14, Section 1.72). The jurisdiction of CDFW may include areas in or near intermittent streams, ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams that are indicated on USGS maps, watercourses that may contain subsurface flows, or within the flood plain of a water body. CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW limits of jurisdiction typically include the maximum extents of the uppermost bank-to-bank distance and/or the outermost extent of riparian vegetation dripline, whichever measurement is greater.

In a CDFW guidance of stream processes and forms in dryland watersheds (Vyverberg 2010), streams are identified as having one or more channels that may all be active or receive water only during some high flow event. Subordinate features, such as low flow channels, active channels, banks associated with secondary channels, floodplains, and stream-associated vegetation, may occur within the bounds of a single, larger channel. The water course is defined by the topography or elevations of land that confine a

stream to a definite course when its waters rise to their highest level. A water course is also defined as a stream with boundaries defined by the maximal extent or expression on the landscape even though flow may otherwise be intermittent or ephemeral.

Artificial waterways such as ditches (including roadside ditches), canals, aqueducts, irrigation ditches, and other artificially created water conveyance systems also may be under the jurisdiction of CDFW. CDFW may claim jurisdiction over these features based on the presence of habitat characteristics suitable to support aquatic life, riparian vegetation, and/or stream-dependent terrestrial wildlife. As with natural waterways, the limit of CDFW jurisdiction of artificial waterways includes the uppermost bank-to-bank distance and/or the outermost extent of riparian vegetation dripline, whichever measurement is greater.

CDFW has the responsibility to protect against a net loss of the State's wetlands. CDFW supports the wetland criteria recognized by US Fish and Wildlife Service (USFWS); one indicator of wetland conditions must exist for wetlands conditions to be considered present. The following is the USFWS-accepted definition of a wetland:

> *Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the lands supports hydrophytes, (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year (Cowardin et al. 1979).*

When considering whether an action would result in a net loss of wetlands, CDFW will extend jurisdiction to one-parameter wetland conditions where such conditions exist within the riparian vegetation that is associated with a stream or lake and does not depend on whether those features meet the three-parameter USACE methodology of wetland determination. If impacts to wetlands under the jurisdiction of CDFW are unavoidable, a mitigation plan will be implemented in coordination with CDFW to support the CDFW policy of "no net loss" of wetland habitat.

SECTION 3.0 – METHODS

3.1 JURISDICTIONAL DETERMINATION AND WETLAND DELINEATION

3.1.1 Literature Review

Prior to beginning the field delineation, high-resolution aerial photographs, USFWS National Wetlands Inventory (NWI) maps, USGS topographic maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) maps, and Google Earth images were examined to determine the potential areas of USACE/RWQCB/CDFW jurisdiction on the proposed project.

As prescribed by the 1987 Wetland Manual and Arid West Supplement, all available lists of hydric soils were referenced to identify any occurrence of hydric soils listed within the proposed project. The national, state, and local hydric soils lists were used along with local soil survey maps.

3.1.2 Field Survey

Field surveys in the lower two thirds of the proposed project site were conducted on November 24, 2010 by Chambers Group biologists Paul Morrissey and Saraiah Skidmore. Additional field surveys for the upstream area of the reservoir and confirmation of the lower two thirds of the reservoir were conducted by Paul Morrissey and Carley Jennings on May 23, 2013. USACE and RWQCB potential wetland areas were evaluated based upon the presence of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology, in accordance with USACE guidelines (USACE 2008). Vegetation communities were identified to be of CDFW interest if at least one of the three wetland parameters were present.

The RWQCB jurisdiction includes all USACE jurisdictional areas, Ordinary High Water Marks (OHWMs) or High Water Marks (HWMs) in non-Relatively Permanent Waters (RPWs), isolated wetlands, and any other feature that have an effect on surface or subsurface water quality within California. The CDFW takes jurisdiction to the top of the bank on either side of the drainage or to the outer edge of all riparian vegetation, whichever measurement is greater. Vegetation communities were mapped within the survey area (proposed project boundary) and are displayed on the Vegetation Communities Map (Figure 2). Typically, for reservoir projects, the limit of jurisdiction is determined by the total capacity of the infrastructure (removal area within the reservoir), or HWM. However, Devil's Gate Reservoir does not capture and retain water to total capacity of the reservoir. For Devil's Gate Reservoir, water is typically retained up to 1020 elevation line (contour). Therefore, the 1020 contour is considered the OHWM for this study. The proposed project footprint is located up to the 1070 contour. Therefore, 1070 contour line is considered the HWM for this study. Reference photographs were taken during this survey and are included as Appendix A. Photo points were reproduced using Geographic Information System (GIS) software and displayed on the Delineation Map (Figure 3).

Regardless of whether the drainages exhibited the potential to be three-parameter wetlands (i.e., vegetation, soils, and hydrology); representative drainages were investigated and recorded onto standardized Wetland Determination Data Forms – Arid West Region data sheets (Appendix B). Features with no evidence of wetland hydrology, and which supported only upland vegetation, were evaluated for the upward limits of jurisdiction and not exclusively for wetland parameters. Recorded data included plant species with percent covers, soil profiles in dug soil pits, and evidence of hydrology. Data points and soil pits were recorded and used to delineate the wetland boundaries (Figure 3 and Figure 4).

Additional test pits were dug throughout the reservoir to identify hydric soil characteristics. All determinations and delineations were digitized for the precise mapping of jurisdictional areas. All data on jurisdictional determinations and wetland delineations were reproduced using GIS software and displayed on aerial maps for this report (Figure 3 and Figure 4).

3.1.3 Vegetation

During the wetland delineation, sample plots were established to a 30-foot radius, where feasible, that represented potential wetland areas. Plant species were identified within the sample plot, and the percent cover for each species was recorded on standard USACE wetland determination forms. The 2012 National Wetland Plant List, the California 2012 Final State Wetland Plant List (Lichvar 2012a), and the National Wetland Plant List Indicator Rating Definitions (Lichvar 2012b) were referenced to classify the plant species based on their probability to occur within a wetland.

Plant species and absolute percent covers were recorded by stratum (i.e., tree, sapling/shrub, herb, woody vine) and evaluated for dominance and prevalence according to guidelines in the 1987 Wetland Manual and Arid West Supplement. Naming conventions follow the Jepson Manual (Hickman 1993). Plants were categorized according to their probabilities to occur in wetlands versus non-wetlands in accordance with the categories in the *National List of Species that Occur in Wetlands* (Reed 1988). More specifically, the California Land Resource Region (Region 0) wetlands plant list was used, which is a regional adaptation of the *National List*. The wetland species categories are:

I. **Obligate Wetland (OBL)** – Occur almost always (estimated probability >99 %) under natural conditions in wetlands.

II. **Facultative Wetland (FACW) –** Usually occur in wetlands (estimated probability 67 % to 99 %), but occasionally found in non-wetlands.

III. **Facultative (FAC) –** Equally likely to occur in wetlands or non-wetlands (estimated probability 34 % to 66 %).

IV. **Facultative Upland (FACU) –** Usually occur in non-wetlands (estimated probability 67 % to 99 %), but occasionally found in wetlands.

V. **Obligate Upland (UPL) –** May occur in wetlands in another region, but occur almost always (estimated probability >99 %) under natural conditions in non-wetlands in southern California. All species not listed on the *National List of Species that Occur in Wetlands* (Reed 1988) are considered to be UPL.

VI. **No Indicator (NI)** – NI is recorded for those species for which insufficient information was available to determine an indicator status.

3.1.4 Soils

Before conducting the surveys, soil maps for Los Angeles County were referenced online (http://soils.usda.gov/technical/classification/osd/index.html) to determine the types of soil found on the site. Soils were determined in accordance with categories set forth by the USDA Soil Conservation

Service and by referencing the USDA NRCS Web Soil Survey (USDA 2013), and the Los Angeles County GIS (eGIS) Data Portal (Los Angeles County, 2011).

In addition to assessing the plant species, the soils present in the sample plot were also investigated. Using a spade, a soil pit was dug to a depth of 18 inches, where feasible, as prescribed by the 1987 Wetland Manual and Arid West Supplement (USACE 2008). Data was collected within each soil pit, which included the soil matrix color, soil texture, presence or absence of indicators noted in the wetland delineation manuals (Environmental Laboratory 1987; USACE 2008), and depth of soil saturation. The colors of the soil matrix and redoximorphic features (if present) were determined using the Munsell Soil Color Charts (GretagMacbeth 2009). The Munsell Soil Color Charts used to determine chroma and hue are based on wetted soils.

3.1.5 Hydrology

Consideration of the climate and flow frequency was given when observing watermarks and drift lines. Signs of hydrology were also recorded. Typical indicators of hydrology include evidence of inundation, destruction of vegetation, saturation, surface water, watermarks, drift lines, sediment deposits, water-stained leaves, and the presence or oxidation/reduction features in the soil. Climate and flow frequency were considered in observing watermarks and drift lines. For the purpose of determining hydrologic connectivity to a TNW, aerial photos, National Wetland Inventory maps, and USGS quads were referenced and were inspected on and offsite for true connectivity.

3.1.6 Mapping

Field staff collected data to submeter accuracy, when available, via Trimble GPS equipment (Trimble unit) and aerial photography. Point data was recorded for the sample plots, photo locations, and culverts. Line features were collected for drainages by walking the features with the Trimble unit. Lines were recorded on the perimeter of the wetlands and transformed to polygons on a GIS software program. Trimble unit data was downloaded and transformed utilizing ArcGIS. In areas where access to the feature was not available, lines were drawn on aerial photographs in the field and digitized in the office utilizing ArcGIS.

Vegetation Communities (Impacted Acres)

1. Riversidean Alluvial Fan Sage Scrub (1.1 acres)
2. Coastal Sage Scrub (3.1 acres)
3. Scoured (26.5 acres)
4. Ornamental Landscaping (0.4 acre)
5. Riparian Woodland (51.4 acres)
6. Ruderal (22.8 acres)
7. Mule Fat Scrub (9.3 acres)
8. Disturbed (Barren/Trails) (1.9 acres)
9. Riparian Herbaceous (1.8 acres)

SCALE= 1 inch equals 375 feet

0 187.5 375 750 Feet

Proposed Project Boundary

Sediment Removal Excavation Limit

Coast Live Oak

Figure 2
Devil's Gate Reservoir Sediment Removal and Management Project
Vegetation Communities Map

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\\Cgi-gisdata01\gis_data\Projects\20000s\20201 - 20400\20346 Devil's Gate EIR\20346 JD Figure 2 - Vegetation Communities Map.mxd

SECTION 4.0 – FINDINGS

The interactions of three parameters were examined in the field for hydrophytic characteristics and used to determine the presence or absence of a wetland for USACE/RWQCB jurisdiction and at least one of the three parameters for CDFW jurisdiction. Details on the characteristics of the soils, hydrology, and vegetation observed within the proposed project boundaries are described below.

4.1 SOILS

Referencing the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2013), it was determined that data using this resource does not exist at this time. NRCS data for the site was found on the Los Angeles County GIS (eGIS) Data Portal (Los Angeles County 2011). The following soils were identified within the proposed project site:

I. Ramona Sandy Loam

The Ramona series is a well drained sandy loam and fine sandy loam and fine sandy loam soil formed from granitic rock. These soils are found in nearly level to moderately steep topography, on terraces and alluvial fans at elevations of 250 to 3,500 feet. Soils are generally well-drained, slow to rapid runoff, and moderately slow permeability.

II. Hanford Gravelly Sandy Loam

The Hanford series is a very deep, well drained soil that is formed in moderately coarse textured alluvium primarily from granite and other quartz bearing rock. These soils are typically found on stream bottoms, floodplains and alluvial fans and on slopes of 0 to 15 percent at elevations of 150 to 3,500 feet. Soils exhibit negligible to low runoff, and moderately rapid permeability.

Due to the inundation of soils and organic debris entering the reservoir after the Station Fire and natural flooding events, soil characteristics were also assessed in the field by digging pits, checking for soil indicators, and verifying or determining actual soil types present.

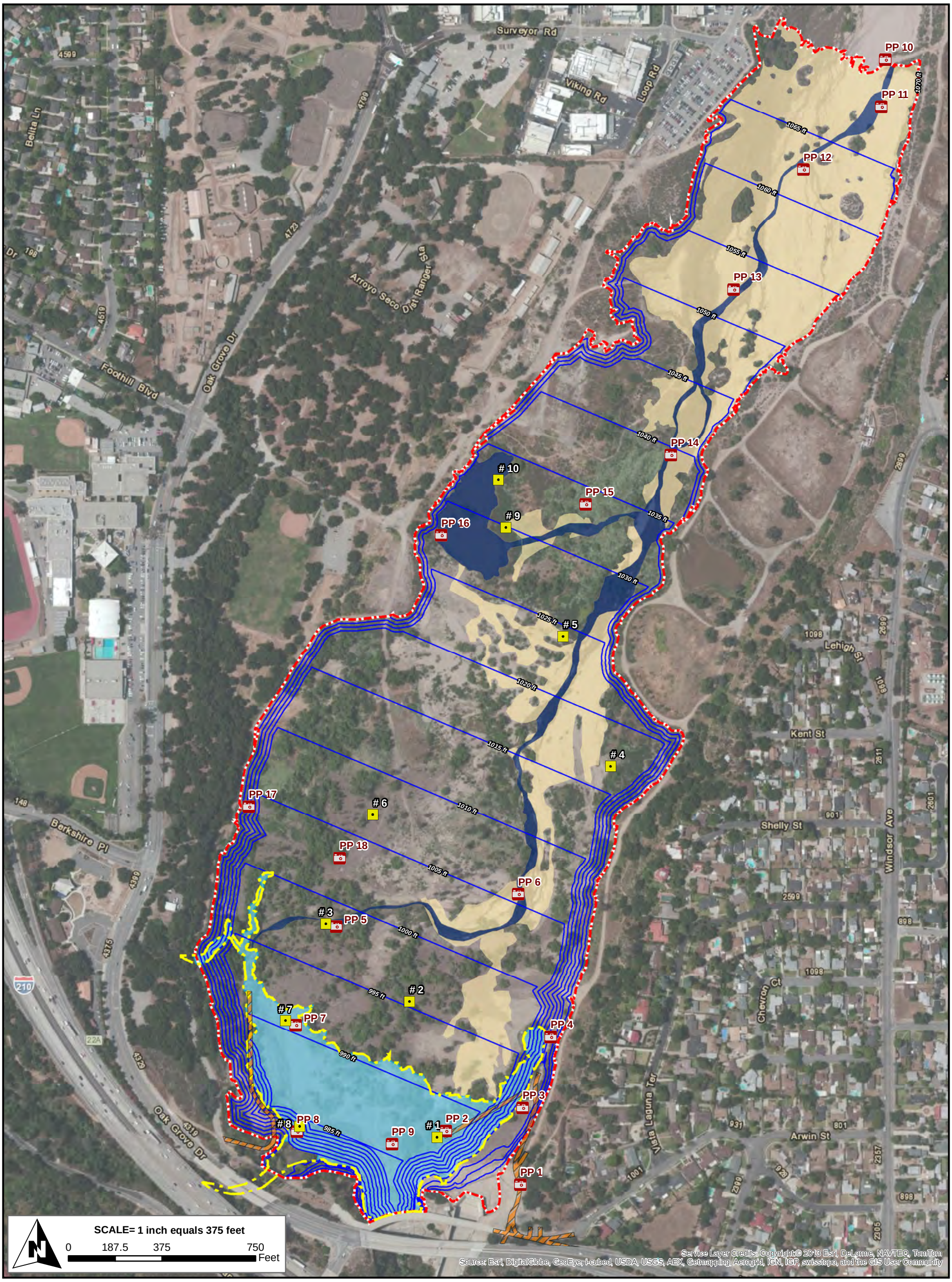
Problematic soils were found to occur within Devil's Gate Reservoir. Problematic soils include soil profiles that have angular gravel or fill (Wetland Delineation Manual, Arid West Region), such as the sediment load entering a reservoir after the fire and heavy rain events. The Devil's Gate Dam was built in 1920 and serves as a man-made structure altering natural hydrology in the area. Many human-induced wetlands do not contain hydric soils because of the relatively recent changes in soil and hydrology. Hydric soils may take several years to hundreds of years to mature under natural conditions. Fire and rainfall patterns cause debris and sediment to wash down and get trapped in the reservoir and as a result, the reservoir is continually loaded with debris and sediment build up. As a result of the 2009 Station Fire, Devil's Gate Reservoir received debris and sediment build-up at depths between 3 to 18.5 feet, depending on the area of the reservoir. Typically, sediment and debris is deposited in Devil's Gate Reservoir at a much lower rate. With new soils continuously moving into the reservoir, the upper layers of soil do not have the chance to mature. Although this system is not considered natural, the man-made changes have been left unchanged for a number of years and are considered normal circumstances.

Hydric soil indicators were observed at two formal Soil Test Pits, Pits 1 and 7, within the proposed project boundaries (Figures 3 and 4). Hydric soil indicators were faint or non-existent at the other eight

Soil Pit areas and numerous soil test pit areas. Due to the sediment build up adjacent to these pits, boundaries of these Wetland areas were undeterminable during the delineation process based on these problematic soils. Wetland boundaries were therefore identified by the OHWM (Section 4.4.3).

4.2 VEGETATION

Vegetation in the Devil's Gate Reservoir is typical of wetlands, with mature riparian trees, pockets of mule fat scrub, and emergent riparian herbaceous communities growing along scoured areas. The riparian areas consisted of Riparian Woodland, Mule Fat Scrub, Coast Live Oak Woodland, and Riparian Herbaceous. Upland vegetation communities also exist within the proposed project boundaries and include Riversidean Alluvial Fan Sage Scrub, Coastal Sage Scrub, Scoured, Ornamental Landscaping and Ruderal areas. The vegetation communities within the proposed project boundary are shown in detail in Figure 2.



Proposed Project Boundary

Access Road

Sediment Removal Excavation Limit

Inundation Line

Soil Test Pit

Photo Points

Waters

Wetland Area (11.2 acres)

Drainage (6.7 acres)

Braided Channel (28.9 acres)

Figure 3

Devil's Gate Reservoir Sediment Removal and Management Project

USACE/RWQCB Jurisdictional Areas Map

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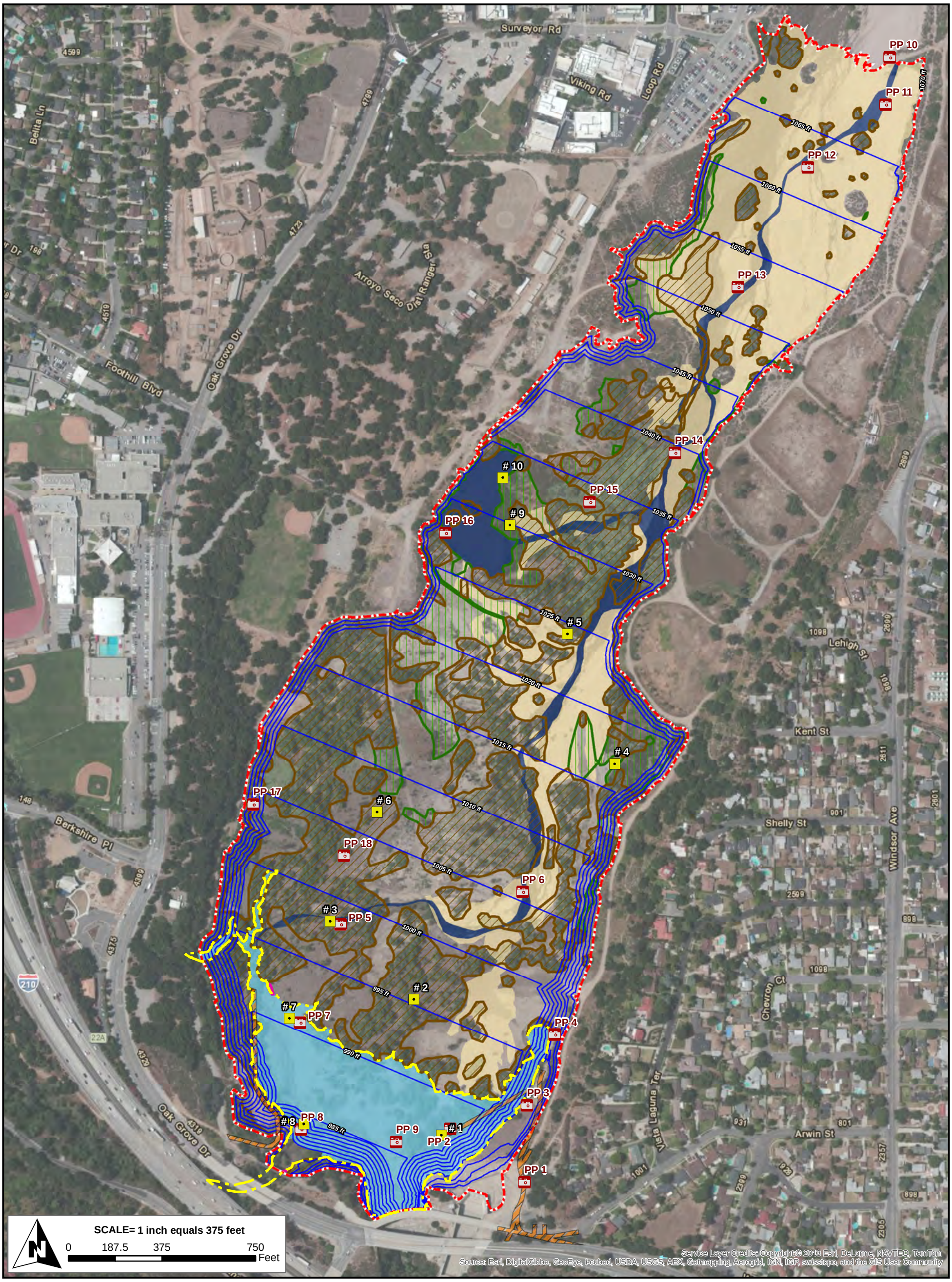
\\Cgi-gisdata01\gis_data\Projects\20000s\20201 - 20400\20346 Devil's Gate EIR\20346 JD Figure 3 - USACE_RWQCB Jurisdictional Areas Map.mxd



Proposed Project Boundary
Access Road
Sediment Removal Excavation Limit
Inundation Line
Soil Test Pit
Photo Points

Riparian Vegetation
- Riparian Woodland (45 acres)
- Mule Fat Scrub (9.3 acres)
- Riparian Herbaceous (0.03 acre)

Waters
- Wetland Area (11.2 acres)
- Drainage (6.7 acres)
- Braided Channel (28.9 acres)

Figure 4
Devil's Gate Reservoir Sediment Removal and Management Project
CDFW Jurisdictional Areas Map

Version Date: 10/18/2013

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\\Cgi-gisdata01\gis_data\Projects\20000s\20201 - 20400\20346 Devil's Gate EIR\20346 JD Figure 4 - CDFW Jurisdictional Areas Map.mxd

4.3 DRAINAGE FEATURES AND CONNECTIVITY

The dam and reservoir originally were developed to collect flood runoff from the drainage area upstream, store it temporarily, and release it so as not to exceed the downstream capacity. The Devil's Gate Reservoir is fed by the Arroyo Seco Watershed which begins in the San Gabriel Mountains north of Pasadena. Water flows from the watershed into the reservoir at the base of the mountains. According to the Hahamongna Watershed Master Plan (HWPMP), adopted in 2003, in addition the Arroyo Seco, 23 storm drains also enter the reservoir. Most of these storm drains divert run-off from neighborhoods and businesses into the watershed and two of these storm drains had flowing water at the time of the survey. Water entered the reservoir through a culvert on the southwest side of the site and a culvert on the southeast contained a pond with little water flow. Water from the Arroyo Seco and storm drains continues to flow to the southernmost point in the reservoir and leaves the reservoir from the outlet structures of the dam. Water flows south of the dam for approximately 8.5 river miles to the Los Angeles (LA) River in Los Angeles near the State Route (SR) 110 and Interstate 5 (I-5) freeway interchange. The LA River continues to flow south for approximately 23.5 river miles when it reaches the Pacific Ocean in Long Beach.

The total distance to the nearest TNW from Devil's Gate is the LA River at a distance of approximately 8.5 river miles. The Arroyo Seco Watershed is seasonal, flowing during the wet season after rain events. The headwaters are located at in the San Gabriel Mountains and waters terminate at LA River.

4.4 WETLAND INDICATORS

The proposed project site contained at least one of three wetland parameters within the 1020 contour. However, the proposed project site contains characteristics of hydric soil indicators at Soil Pits 1 and 7, vegetation, and hydrology that indicate the area is a wetland feature (Figures 3 and 4). Due to problematic soils in the remaining eight soil pits and numerous test pits (test pits are dug by the delineator to quickly examine soil profiles without filling out data sheets for all three parameters), the presence of wetland boundaries were undeterminable during the field delineation based on the three parameters. Therefore, the 1020 contour (OHWM) was used as the boundary of the wetland area for all three agencies (Section 4.4.3).

4.4.1 Vegetation

The vegetation present on the proposed project site is dominated by black willow (*Salix gooddingii*), in addition to cottonwood (*Populus fremontii*), western sycamore (*Platanus racemosa*), mule fat (*Baccharis salicifolia*), and slender cattail (*Typha domingensis*). Non-native species observed within soil pit study areas included: tree tobacco (*Nicotiana glauca*), eupatory (*Ageratina adenophora*), and castor bean (*Ricinus communis*).

Vegetation is considered hydrophytic if the dominance test is greater than 50 percent, if the prevalence test is less than or equal to 3.0, and/or if there are morphological adaptations in the present plant species. The dominance test was greater than 50 percent and the prevalence test was less than three for wetland vegetation at the study areas at Soil Pits 1 through 9. Hydrophytic vegetation in these areas consisted of *Baccharis salicifolia* (mulefat, FAC), *Lepidium latifolium* (peppergrass, FAC), *Rumex crispus* (curly doc, FAC), *Conium maculatum* (poison hemlock, FACW), *Cyperus eragrostis* (tall cyperus, FACW), *Typha domingensis* (slender cattail, OBL), *Plantanus racemosa* (western sycamore, FAC), *Alnus*

rhombifolia (white alder, FACW), *Salix gooddingii* (black willow, FACW), *Salix laevigata* (red willow, FACW), *Salix lasiolepis* (yellow willow, FACW), and *Juncus xiphioides* (iris-leaved rush, OBL).

The vegetation at Soil Pit 10 was dominated by exotic upland species of plants including *Hirschfeldia incana* (short-pod mustard, UPL) and *Bromus madritensis* ssp. *rubens* (foxtail chess, UPL). Although this area appears to be a man-made water retention area with constructed berms, the vegetation did not meet the dominance criteria for wetland characterization.

4.4.2 Soils

Problematic soils exist on the site as indicated in 8 of the 10 formal Soil Pits and numerous soil test pits. Sediment build up of sandy to sandy loam soils during rain events cover potentially hydric soils in the reservoir area. As a result of the 2009 Station Fire and the subsequent storm events, large amounts of sediment have entered the reservoir depositing between 3 and 18.5 feet of new sediment. During rain events, these sandy soils are transported down the Arroyo Seco and settle within the reservoir area. Scouring of vegetation was also evident, indicating that high volumes of water flow through the reservoir during natural flood events and transport the sandy soils.

However, redoximorphic features and gley soils were identified in at two formal soil pit locations (Soil Pit 1 and 7). A gleyed matrix is formed when the soils are saturated for a significant period of time. A gleyed matrix occurs when a soil layer has multiple colors and a gley mixture containing gley colors. Hydric soil indicators were present at Soil Pits 1 and 7 and included a loamy gleyed matrix beginning at a depth of three inches for Soil Pit 1 and on the surface of Soil Pit 7. For Soil Pit 1, the (wetted) soils in the upper 0 to 2 and 2 to 3 inches did not exhibit redoximorphic features with a matrix color of 10 YR 5/2 and 10 YR 3/2, respectively (GretagMacbeth 2009). The (wetted) soils in the upper 3 to 6 inches had a matrix color of Gley 3/10 Y with approximately 40 percent prominent redoximorphic features that had a color of 5 YR 4/6 (GretagMacbeth 2009). The (wetted) soils in the lower 6 to 15 inches had a matrix color of Gley 2.5/10Y. For Soil Pit 7, the (wetted) soils in the upper 0 to 18 inches had a matrix color of Gley 3/10 Y with approximately 5 percent prominent redoximorphic features that had a color of 5 YR 4/4 (GretagMacbeth 2009). Due to problematic soils in the remaining eight soil pits and numerous test pits, the presence of wetland boundaries were undeterminable during the field delineation based on the three parameters for USACE/RWQCB defined wetlands.

4.4.3 Hydrology

Several indicators of wetland hydrology were present at the time of the field delineation. Characteristics included evidence of inundation, saturation, surface water, watermarks, drift lines, sediment deposits, water-stained leaves, destruction of vegetation and the presence or oxidation/reduction features in the soil, among several others. The braided channels were highly variable within the reservoir area, in many instances flowing subsurface through the highly permeable soils and appear to lose visible connectivity. Much of the soils are sandy to sandy loam soils that do not exhibit a relatively permanent bed and bank. Instead, the flow is highly variable and many tributaries formed from single rain events were observed.

The wet season in southern California typically runs from October 15th to April 15th. Outside of the wet season, Devil's Gate Reservoir does not impound water. However, if enough water is available during the wet season, Devil's Gate Reservoir will impound water up to elevation 1020. When water within the reservoir reaches the 1020 contour, the dam's gates are opened to maintain the water level at elevation 1020. Based on this information, the OHWM for the reservoir is therefore located at the 1020 contour.

Due to the presence of problematic soils that inhibited determination of the three parameter wetland, the 1020 contour ("Inundation area" called out on Figures 3 and 4) was therefore used to delineate the boundaries of the Wetland area (Figures 3 and 4).

The quality of aquatic habitat within the reservoir is low for most wildlife species. Water is not present all year and therefore, the presence of aquatic species would only occur seasonally rather than year long. With the presence of a park nearby, hiking paths, horseback riding trails, and training rings, and domestic dogs, the aquatic areas are considered relatively disturbed. Because the site is frequently visited by the public and pets of the public, wildlife diversity is negatively impacted. Off leash dogs and outdoor cats in adjacent residential homes likely predate on native wildlife species also causing a decrease in variability. Disturbed communities also allow exotic plant species to establish and spread.

4.5 USACE JURISDICTION

The waters within the reservoir ultimately connect to the LA River and terminate in the Pacific Ocean and are therefore considered USACE jurisdictional. A significant nexus analysis was performed to determine potential USACE jurisdiction. A significant nexus was determined to exist for the proposed project based on the following facts:

- Wetlands directly abutting an ephemeral and intermittent non-RPW and is hydrologically connected approximately 8.5 river miles from the nearest TNW (LA River).
- It has the capacity to carry pollutants, nutrients, and organic carbon to the nearest TNW.
- The nutrients and organic carbon in turn support downstream foodwebs (i.e., aquatic plant and wildlife in the LA River). The nutrients and organic carbon also have the capacity to contribute to the ecology of all impoundments between the proposed project site and the Pacific Ocean.

For this reservoir, the water level is highly variable within the seasons and throughout the year. However, water is released at the 1020 contour (OHWM); therefore, the USACE identified Wetland boundary is located up to the OHWM at the 1020 contour. The total USACE jurisdiction is defined by the riparian habitat within the HWM that is indicative of the total water capacity within the proposed project.

4.6 RWQCB JURISDICTION

For this reservoir, is the water level is highly variable within the seasons and throughout the year. However, water is released at the 1020 contour (OHWM); therefore, the RWQCB identified Wetland boundary is located up to the OHWM at the 1020 contour. The total RWQCB jurisdiction is defined by the HWM that is indicative of the total water capacity within the proposed project. The reservoir has the capacity to affect surface and subsurface water quality within California and, therefore, the RWQCB has jurisdiction over riparian habitat within the reservoir up to the HWM line.

4.7 CDFW JURISDICTION

Though much of the reservoir is of low quality aquatic habitat, it does have the potential support riparian dependant birds, mammals, and aquatic species. Mature riparian vegetation [i.e., willows (*Salix* sp.) and mule-fat (*Baccharis salicifolia*)] was found present within the reservoir and within the proposed

work area, and characteristics of naturalized stream channels were present. CDFW jurisdiction applies to the top of the banks, or in this case the HWM of the proposed project. Wetland conditions were identified to be of CDFW interest since at least one of the three wetland parameters was present. Additionally, CDFW will have jurisdiction over riparian vegetation from the OHWM up to the HWM.

4.8 JURISDICTIONAL ANALYSIS

At Devil's Gate Reservoir, the OHWM of the reservoir exists up to the 1020 contour line. Sediment removal activities are proposed to the 1070 contour line. Approximately 120.4 acres are contained within the proposed work area (analyzed impact area). USACE, CDFW and RWQCB have jurisdiction of the Wetland to the OHWM, or 1020 contour. Wetland, as defined by USACE, exists within the impact area of Devil's Gate Reservoir (Figures 3 and 4). All three agencies have jurisdiction over this Wetland within the proposed work area where there will be permanent impacts. USACE, CDFW and RWQCB have jurisdiction of the riparian habitat within the proposed project boundary, up to the HWM. The wetland and riparian areas include riparian vegetation communities; Riparian Woodland, Mule Fat Scrub, and Riparian Herbaceous.

Waters were calculated using LACDPW water release data due to the fact that the amount of surface water within the reservoir is variable. The entire reservoir has the potential to contain surface waters during a high rain event year and can be completely dry during several months in years with average rainfall. The main channel was flowing at the time of the survey, bringing water into the reservoir from the Arroyo Seco watershed. Flint Wash, located on the southwest corner of the site, and a culvert on the southeast side of the site, also directed water into the reservoir at the time of the survey.

Jurisdictional acreages were calculated within the proposed project area boundary. Table 4-1 includes the jurisdictional acreages for the USACE, RWQCB, and the CDFW for waters and for vegetation impacts.

Table 1: Jurisdictional Acreage Matrix

Authority	Jurisdictional Area		Total Jurisdiction (acres)
USACE	Riparian Area outside Wetland Area	54. 33 (acres)	101.13 (acres)
	Wetland Area	11.2 (acres)	
	Drainage Impacts *Main channel* *Braided channel*	35.6 (acres) *6.7* *28.9*	
RWQCB	Riparian Area Outside Wetland Area *Mule Fat Scrub* *Riparian Herbaceous* *Riparian Woodland*	2,366,614.8 (sq. ft.) *405,108.0* *1,306.8* *1,960,200*	4,405,222.8 (sq. ft.)
	Wetland Area	487,872 (sq. ft.)	
	Drainage Impacts *Main channel* *Braided channel*	1,550,736 (sq. ft.) *291,852* *1,258,884*	
CDFW	Riparian Area Outside Wetland Area *Mule Fat Scrub* *Riparian Herbaceous* *Riparian Woodland*	54. 33 (acres) *9.3* *0.03* *45.0*	101.13 (acres)
	Wetland Area	11.2 (acres)	
	Drainage Impacts *Main channel* *Braided channel*	35.6 (acres) *6.7* *28.9*	

The USACE, RWQCB, and CDFW acreage, as defined by the HWMs and surface water within the proposed work area, amounts to approximately 11.2 acres (487,872 sq. ft.) of Wetland, 54.33 acres (2,366,614.8 sq. ft.) of riparian vegetation and 35.6 acres (1,550,736 sq. ft.) of jurisdictional drainage features (both the main channel and the braided tributaries); for a total of 101.13 acres (4,405,222.8 sq. ft.) within the proposed work area.

The proposed project area is comprised of approximately 120.4 acres. The total Wetland area (Mule Fat Scrub, Riparian Herbaceous, and Riparian Woodland) is approximately 11.2 acres. The total riparian area outside the Wetland area is 54.33 acres. The jurisdictional waters within the proposed project is 35.6 acres. The remaining acres within the proposed project boundary consist of vegetation communities not associated with wetland/riparian environments and include Disturbed (Baren/Trails), Ornamental, Coastal Sage Scrub, and scoured areas.

SECTION 5.0 – CONCLUSION

Construction activities for the proposed project will permanently impact wetland and jurisdictional waters within the proposed work area. A total of 101.13 acres (4,405,222.8 sq. ft.) of USACE/ RWQCB/CDFW jurisdiction will be impacted within the proposed work area.

5.1 FEDERAL PERMITS

The results of the jurisdictional delineation determined approximately 11.2 acres of Wetland, 54.33 acres of riparian vegetation, and 35.6 acres of jurisdictional drainage features (both the main channel and the braided tributaries) for a total of 101.13 acres of Waters of the US are anticipated to be impacted by construction activities. The USACE regulates any activity that impacts Waters of the US, including placement of fill material into or removal of fill material out of Waters of the US per Section 404 of the Clean Water Act (CWA). A Nationwide Permit (NWP) 31 (Maintenance of Existing Flood Control Facilities) may be applicable for this proposed project; the NWP program is an abbreviated permitting process compared to an Individual Permit (IP). The type of permit required (i.e., NWP versus IP) will be at the discretion of the USACE.

5.2 STATE PERMITS

As with the USACE, RWQCB has jurisdiction over Waters of the US. The results of the jurisdictional delineation determined approximately 11.2 acres (487,872 sq. ft.) of Wetland, 54.33 acres (2,366,614.8 sq. ft.) of riparian vegetation and 35.6 acres (1,550,736 sq. ft.) of jurisdictional drainage features (both the main channel and the braided tributaries); for a total of 101.13 acres (4,405,222.8 sq. ft.) within the proposed work area are anticipated to be impacted by construction activities. Under Section 401 of the CWA, the RWQCB regulates any activity that requires a federal permit for discharges to a water body. A 401 Water Quality Certification will be required from the RWQCB for this proposed project.

The results of the jurisdictional delineation determined that CDFW has jurisdiction of Wetland, riparian habitat, and surface water within the proposed project limits. The results of the jurisdictional delineation determined approximately 11.2 acres of Wetland, 54.33 acres of riparian vegetation and 35.6 acres of jurisdictional drainage features (both the main channel and the braided tributaries) for a total of 101.13 acres are anticipated to be impacted by construction activities. The CDFW regulates impacts or alterations to streambeds, including any obstruction or diversion to the natural flow of a stream, substantial change or use of material from a stream, or a deposit or disposal of any debris into a stream as part of Fish and Game Code Sections 1600-02. A Streambed Alteration Agreement (SAA) will be required from the CDFW for this proposed project.

SECTION 6.0 – REFERENCES

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APPENDIX A – SITE PHOTOGRAPHS

APPENDIX A – SITE PHOTOGRAPHS

Photo 1: Photo taken from Photo Point 1 looking west depicting the spillway of the reservoir with Black Willow Series on the right and Sage Scrub and Oak Woodland at the back. The orange blockage devices are used to prevent debris from building up behind the dam.

Photo 2: Photo taken from Photo Point 2 depicting the area where Soil Pit #1 was dug. Vegetation in the area included black willow, mule fat, and cattails.

Photo 3: Photo taken from Photo Point 2 looking at soils from Soil Pit # 1. Soils at Pit #1 contained hydric soil indicators including a loamy gleyed matrix with redoximorphic features.

Photo 4: Photo taken from Photo Point 3 depicting orange rusty redoximorphic features on the surface of soils along the banks of the road (on the right). This was typical in areas throughout the reservoir.

Photo 5: Photo taken from Photo Point 4 looking west depicting a culvert that enters the reservoir on the east side directing neighborhood runoff to the reservoir. A pond existed at the opening of the culvert at the time of the survey with little running water.

Photo 6: Photo from Photo Point 5 depicting Soil Pit #3. This eroded bank gave a soil profile of 3 feet. Sediment build up was very high at this location as well as with most other soil pit locations. Due to sediment build up following rain events, top soil does not have time to mature in a reservoir like it would under natural conditions (problematic soils).

Photo 7: Photo taken from Photo Point 6 looking northeast depicting a large scoured area near the center of the site. Water flows seasonally through this area and is surrounded by Riparian Woodland.

Photo 8: Photo taken from Photo Point 7 depicting the area where Soil Pit # 7 was dug. Vegetation was dominated by mule fat and also included black willow, white alder, California sycamore, and cattails.

Photo 9: Photo taken from Photo Point 8 looking west depicting water flowing from Flint Wash which empties into the reservoir on the west side.

Photo 10: Photo taken from Photo Point 8 looking southeast depicting water flowing from Flint Wash on the west side of the reservoir to the spillway. This area is near Soil Pit #8. Vegetation in this area was dominated by black willows, cattails, and mule fat.

Photo 11: Photo taken from Photo Point 9 looking south depicting the dam wall with emergent riparian vegetation in front of the wall.

Photo 12: Photo taken from Photo Point 9, south of Soil Pit # 8, depicting water continuing to flow to spillway.

Photo 13: Photo taken from Photo Point 10 looking south depicting the scattered vegetation growing along the channel at the northern extent of the project boundary outside the wetland boundary.

Photo 14: Photo taken from Photo Point 11 looking east depicting the mostly scoured channel with patches of mule fat and dense patches of willow.

Photo 15: Photo taken from Photo Point 12 looking southwest depicting the scoured plain with scattered willows. The channel meanders from rain event to rain event and year to year throughout the northern reaches of the project site.

Photo 16: Photo taken from Photo Point 13 looking northeast depicting the braided features throughout the northern section of the project site.

Photo 17: Photo taken from Photo Point 14 looking north depicting the drainage flowing through heavy sandy deposits bordered by dense willows.

Photo 18: Photo taken from Photo Point 15 looking east depicting the dense riparian vegetation growing along the main channel.

Photo 19: Photo taken from Photo Point 16 looking northeast towards Soil Pit 10 depicting non-native grasses and dominant exotic vegetation in the foreground and native mule fat scrub in the background.

Photo 20: Photo taken from Photo Point 17 facing east depicting willow woodland in the background. Photo taken from the disturbed area to the west of wetland boundary.

Photo 21: Photo taken from Photo Point 18 looking west depicting a test soil pit with poison hemlock and willows in the background.

APPENDIX B – WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devil's Gate City/County: Pasadena Sampling Date: 11/24/10
Applicant/Owner: LACDPW State: Ca Sampling Point: 1
Investigator(s): Paul Mirrissey & Sarajah Skidmore Section, Township, Range: 415 San gabriel - Eaton
Landform (hillslope, terrace, etc.): Reservoir Local relief (concave, convex, none): concave Slope (%): 1
Subregion (LRR): C Lat: 11S 0391763 Long: UTM 3783427 Datum: Nad 83
Soil Map Unit Name: Ramona Sandy Loam NWI classification: FF/SW
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ~~No~~ Yes, Soil ~~No~~ Yes, or Hydrology ~~No~~ Yes naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland?	Yes X No ____ FF/SW
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks: In a maintained reservoir.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii – black willow	45	Yes	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Baccharis salicifolia – mule fat	30	yes	FAC
2. Typha domingensis – slender cattail	25	yes	OBL
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 30')			
1. Gyratory – Ageratina adenophera	2	No	OBL
2. Cyperus sp.	1	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	28	x 1 =	28
FACW species	45	x 2 =	90
FAC species	30	x 3 =	90
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	103 (A)		208 (B)

Prevalence Index = B/A = 2.02

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 5/2	100					Silty clay	
1-3	10YR 3/2	100					Silty clay	
3-6	Gley 3/10Y	60	(10YR3/2 mixed)					
[illegible]			→ 5YR 4/6	15	C	M	Silty clay	rust layer
6-15	Gley 2.5/10Y	100					silty clay loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:
- in a reservoir with high silt content due to fires, which may alter soil colors
- continual influx of sediment moving into the area

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): >10"

Water Table Present? Yes X No ___ Depth (inches): >10"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 12"

Wetland Hydrology Present? Yes X No ___

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

Remarks:
pond exists 6ft. from pit

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devil's Gate City/County: Pasadena/LA Sampling Date: 11/24/10
Applicant/Owner: LACDPW State: Ca Sampling Point: 2
Investigator(s): Paul Morrissey Section, Township, Range: 415 San Pasqual-Grafton
Landform (hillslope, terrace, etc.): Reservoir Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR): C Lat: 11S 0391781 Long: Utm 3783593 Datum:
Soil Map Unit Name: Ramona Sandy Loam NWI classification: PFSW

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Problematic area for soils.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix goodingii – black willow	60	Yes	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Castor bean - Ricinus communis	2	No	UPL
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 30')			
1. Eupatory – Ageratina adenophora	1	No	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	60	x 2 =	120
FAC species		x 3 =	
FACU species		x 4 =	
UPL species	2	x 5 =	10
Column Totals:	64 (A)		131 (B)

Prevalence Index = B/A = 2.04

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

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

Hydrophytic Vegetation Present? Yes X 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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18							organic debris	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: - debris piled up & brought down from rains after fires, builds up here in reservoir & hasn't had time to mature organic material - problematic area - From this point to stream - organic debris

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): >18"

Water Table Present? Yes _____ No X Depth (inches): >18"

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >18"

Wetland Hydrology Present? Yes X No _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devil's Gate City/County: Pasadena/LA Sampling Date: 11/24/10
Applicant/Owner: LACDPW State: Ca Sampling Point: 3
Investigator(s): Paul Morrissey & Saraiah Skidmore Section, Township, Range: 414 La Canada
Landform (hillslope, terrace, etc.): Reservoir Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR): C Lat: 0391630 Long: 3783689 Datum:
Soil Map Unit Name: ~~Bomboa~~ Sandy loam NWI classification: FFSW
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Problematic soils –

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix goodingii – black willow	90	Yes	(FACW)
2.			
3.			
4.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30')			
1. Castor bean – Ricinus communis	3	No	FACU
2. Baccharis salicifolia – Mule fat	2	No	(FAC
3. tree tobacco – Nicotiana glauca	3	No	FAC.
4.			
5.			
	8	= Total Cover	
Herb Stratum (Plot size: 30')			
1. Mimulus sp.	1	No	~
2. rush – Juncus xiphioides	1	No	OBL
3. night shade – Solanum sp.	2	No	FAC
4. cupatory – Ageratina adenophora	1	No	UPL
5. cyperus sp.	1	No	OBL
6.			
7.			
8.			
	6	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust NO

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: 1 (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species	3	x 1 = 3
FACW species	90	x 2 = 180
FAC species	7	x 3 = 21
FACU species	3	x 4 = 12
UPL species		x 5 =
Column Totals:	103 (A)	112 (B)

Prevalence Index = B/A = 2.09

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	2.5Y 4/2	100					silty clay loam	
5-6	10YR 4/3	100					silty clay loam	
6-7	10YR 2/1	100					silty clay loam	
7-18	2.5Y 4/2	100					silty clay loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks: in a reservoir, have a soil profile of 3ft. no hydric indicators but there is a high sediment load after rain events
-problematic soils -lots of organic debris

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): >18"

Water Table Present? Yes ____ No X Depth (inches): >18"

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): >18"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devil's Gate City/County: Pasadena/LA Sampling Date: 11/24/10
Applicant/Owner: LACDPW State: CA Sampling Point: 4
Investigator(s): Paul Morrissey & Sarah Skidmore Section, Township, Range: San Pascual – Bra Rav
Landform (hillslope, terrace, etc.): Reservoir Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR): C Lat: 11 S 3911979 Long: UTM 378 3878 Datum:
Soil Map Unit Name: Ramona Sandy Loam NWI classification: Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
– Problematic soils –

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii – black willow	5	Yes	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Baccharis salicifolia	30	Yes	FAC
2. Poison hemlock – Conium maculatum	5	No	FACW
3. cocklebur – Xanthium strumarium	5	No	FAC
4. mustard	1	No	UPL
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Emergent herb			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust No

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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	0
FACW species	10	x 2 =	20
FAC species	35	x 3 =	105
FACU species		x 4 =	
UPL species	1	x 5 =	5
Column Totals:	46 (A)		130 (B)

Prevalence Index = B/A = 2.8

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1							Organic layer	
1-18							Fine silty sand	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks: CA Surrounded by a large wash area, heavy sediments formed from rain events

—problematic soils

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): >18"

Water Table Present? Yes ____ No X Depth (inches): >18"

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): >18"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devil's Gate City/County: Pasadena/LA Sampling Date: 11/24/10
Applicant/Owner: LACDPW State: Ca Sampling Point: 5
Investigator(s): Paul Morrissey & Sarah Skidmore Section, Township, Range:
Landform (hillslope, terrace, etc.): reservoir Local relief (concave, convex, none): concave Slope (%): 1
Subregion (LRR): C Lat: 11S 0391923 Long: UTM 3784037 Datum:
Soil Map Unit Name: ~~Tujunga~~ sandy loam NWI classification: ~~emergent wetland~~

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
– Problematic Soils –

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii – black willow	10	Yes	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Mulefat – Baccharis salicifolia	50	Yes	FAC
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 80 % 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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 60	x 2 =	120
FAC species 50	x 3 =	150
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 60 (A)		170 (B)

Prevalence Index = B/A = 2.8

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y4/2	100					~~Silty~~ Sandy loam	
1-18	2.5Y5/2	100						Silt & clay streaks imbedded in fine sand

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks: heavy sedimentation deposits from rain events
- problematic soils

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): >18"

Water Table Present? Yes ___ No X Depth (inches): >18"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >18"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devil's Gate City/County: Pasadena/LA Sampling Date: 11/24/10
Applicant/Owner: LACDPW State: Ca Sampling Point: 6
Investigator(s): Paul Morrissey & Sariah Skidmore Section, Township, Range: 415 San Pascual – Gratiot
Landform (hillslope, terrace, etc.): Reservoir Local relief (concave, convex, none): concave Slope (%): 1
Subregion (LRR): C Lat: 34 08'11.663 Long: 118 3'38.27 Datum: NAD83
Soil Map Unit Name: Altamont Sandy loam NWI classification: * emergent wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
– Problematic Soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Eucalyptus globulus – blue gum	10	Yes	UPL
2. Salix gooddingii – black willow	1	No	FACW
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Baccharis salicifolia – mule fat	80	yes	FAC
2. Eriodictyon crassifolium – thick leaved yerba santa	10	No	UPL
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 30')			
1. Eupatory – Agerating adenophora	1	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
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 1	x 1 =	1
FACW species 1	x 2 =	2
FAC species 80	x 3 =	240
FACU species ____	x 4 =	____
UPL species 10	x 5 =	50
Column Totals: 92 (A)		293 (B)

Prevalence Index = B/A = 3.18

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					silty clay loam	
2-15	2.5Y 5/2	100					sandy loam	
15-18							gravel	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

heavy sediment deposits from rains

-Problematic soils

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): <18"

Water Table Present? Yes ____ No X Depth (inches): <18"

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): <18"

Wetland Hydrology Present? Yes X No ____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devil's Gate City/County: Pasadena/LA Sampling Date: 11/24/10
Applicant/Owner: LACDPW State: Ca Sampling Point: 7
Investigator(s): Paul Morrissey & Saraiah Skidmore Section, Township, Range: 414 La Canada
Landform (hillslope, terrace, etc.): Reservoir Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR): C Lat: 11S 0391584 Long: UTM 3783585 Datum:
Soil Map Unit Name: Pacoima Sandy loam NWI classification: PFSW
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: Problematic soils

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix goodingii - black willow	2	Yes	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Mule Fat - Bacharis salicifolia	90	yes	FAC
2. Typha domingensis - Slender cattail	15	Yes No	OBL
3. Alnus rhombifolia - White Alder	10	No	FACW
4. Sycamore - Platanus racemosa	2	No	FAC
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species 15	x 1 =	15
FACW species 12	x 2 =	24
FAC species 94	x 3 =	282
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: 121 (A)		321 (B)

Prevalence Index = B/A = 2.65

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: NWI considers this PFSW but pond area has been extended to PWEW

SOIL

Sampling Point: 7

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	3/10Y Grey	95	5YR4/4	5	C	PL	Silty loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soil Present? Yes X No ___

Remarks: Problematic soils, darkness in color could be from sediment from fire settling in the pond, but considered Gley.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (Inches): >18"

Water Table Present? Yes ___ No X Depth (Inches): >18"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (Inches): @ 14"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devils Gate City/County: Pasadena Sampling Date: 11/24/10

Applicant/Owner: LACDPW State: Ca Sampling Point: 8

Investigator(s): Paul Morrissey & Sarciah Skidmore Section, Township, Range: 4 2 3 San Rafael

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

Subregion (LRR): C Lat: 11 S 0391605 Long: UTM 3783437 Datum:

Soil Map Unit Name: Bahamonde Sandy Loam NWI classification: PFSW

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation Yes, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: –Problematic soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii – black willow	40	Yes	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Typha domingensis – slender cattail	25	Yes	OBL
2. Baccharis salicifolia – mule fat	10	Yes	FACW
3. Platanus racemosa – sycamore	1	No	FACW
4. Cottonwood – Populus fremontii	1	No	FACW
5.			
	= Total Cover		
Herb Stratum (Plot size: 30')			
1. Eleocharis Carex spp.	@1	No	OBL
2. Rorippa nasturtium-aquaticum	1	No	OBL
3. Eupatory – Ageratina adenophora	1	No	OBL
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
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: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	128	x 1 =	128
FACW species	40	x 2 =	80
FAC species	12	x 3 =	36
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	80 (A)		144 (B)

Prevalence Index = B/A = 1.8

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6		100					Sand	
6-18	Gley 3/10Y	~100					Silt Loam	– high organic content

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

– Problematic

– High sediment deposits from culvert & rain events

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): >18"

Water Table Present? Yes X No ___ Depth (inches): >18"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): @ 7"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devil's Gate Reservoir City/County: LA County/Pasadena Sampling Date: 5/23/13
Applicant/Owner: LACDPW State: CA Sampling Point: 9
Investigator(s): Paul Morrissey, Carley Jennings Section, Township, Range: 5/15 San Pascual – Grafton
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): _____ Slope (%): 0
Subregion (LRR): C Lat: 34.193 Long: -118.173 Datum: NAD 83
Soil Map Unit Name: Ramona Sandy Loam NWI classification: freshwater emergent
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation NO, Soil yes, or Hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes X No _____	

Remarks: Problematic soils – soils showed hydric characteristics but did not meet the requirements for hydric soil. Not enough time to monitor.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 30')			
1. Mulefat	35%	yes	FAC
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 30')			
1. Bromus sp.	15%	UNO	UPL
2. Hordeum murinum	15%	yes	UPL
3. Centaurea melitensis	15%	yes	FACU
4. Lepidium latifolium	2%	NO	FAC
5. Rumex crispus	2%	NO	FAC
6.			
7.			
8.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % 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: 2/3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	39	x 3 =	117
FACU species	—	x 4 =	
UPL species	20	x 5 =	100
Column Totals:	84 (A)		267 (B)

Prevalence Index = B/A = 3.17

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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5 4/2	95	10YR 5/6	5-7%	C	M	silty clay loam	
12+								

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks:

Hydric characteristics but falls slightly short of a 3/2 requirement. However, this is a reservoir area that has an influx of sediment from inflow on a regular basis.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (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 area was developed to hold water - dug out lower w/ berms.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Devils Gate City/County: LA county Sampling Date: 5/23/13
Applicant/Owner: LACDPW State: CA Sampling Point: 10
Investigator(s): Pimentel, Corley, Jennings Section, Township, Range: 4 LA Canada
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 6
Subregion (LRR): C Lat: 34°18'45.43" Long: 118°4'28.65" Datum:
Soil Map Unit Name: Ramona Sandy 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 No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Man-made basin area with dominance of UPL vegetation and little hydric conditions in soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Mulefat	10.	____	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Mustard (Hirschfeldia incana)	2 %	NO	UPL
2. Low lying mustard (Lepidium sp)	12 %	NO	UPL
3. umbrella sedge (Cyperus eragrostis)	2 %	NO	FACW
4. rumex crispus	5 %	NO	FAC
5. Bromus sp	45 %	YES	UPL
6.			
7.			
8.			
	104 % = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	15	x 3 =	45
FACU species	0	x 4 =	
UPL species	59	x 5 =	295
Column Totals:	76 (A)		344 (B)

Prevalence Index = B/A = 4.52

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

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

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:
primarily non-native grasses with few scattered hydrophytic plants, not enough hydrophytic plants to meet the vegetation requirements for a wetland.

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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5 Y 4/1	99	10 YR 4/6	1	C	M	Silty clay loam	
6-18	10 YR 3/2	98	5 YR 4/6	2	C	M	Silty clay loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks: Minimal hydric characteristics. Soils not mature; this is a man-made basin with an influx of soil during rain events.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (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 C – JURISDICTIONAL DETERMINATION FORMS

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: California County/parish/borough: Los Angeles City: Pasadena
Center coordinates of site (lat/long in degree decimal format): Lat. 34.187727° **N**, Long. -118.175949° **W**.
Universal Transverse Mercator: NAD 83 Decimal Degrees
Name of nearest waterbody: Arroyo Seco Wash
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Los Angeles River
Name of watershed or Hydrologic Unit Code (HUC): Arroyo Seco HUC 18070105
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Appear to be no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet: width (ft) and/or 45 acres.
      Wetlands: 124 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 47 **square miles**
Drainage area: **Pick List**
Average annual rainfall: 22.5 inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☒ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **5-10** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: Once water leaves the Devil's Gate reservoir, water flows south for approximately 8.5 river miles where it reaches the LA River in LA near the 110 and I-5 freeway interchange. The LA River continues to flow south for approximately 23.5 river miles when it reaches the Pacific Ocean in Long Beach .
Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: Excavation will occur within a man made reservoir. Arroyo Seco Wash is a natural stream course that has been modified (portions downstream are concrete lined) for public safety due to the development in the immediate adjacent areas.

Tributary properties with respect to top of bank (estimate):
Average width: many braided sandy channels - from 1 - 60 feet
Average depth: 0.5 to 4 feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☒ Other. Explain: organic debris such as fallen and shredded trees from recent fires.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: highly eroding.
Presence of run/riffle/pool complexes. Explain: slow moving wash: mainly run with little or no side pools with the exception of the ponds outside the excavation area..
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): 1-2 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **6-10**
Describe flow regime: Flow would occur mainly after rain events, moving south.
Other information on duration and volume: Volume would depend on heaviness and duration of rain events.

Surface flow is: **Discrete.** Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank ☒ the presence of litter and debris
☒ changes in the character of soil ☒ destruction of terrestrial vegetation
☒ shelving ☐ the presence of wrack line
☒ vegetation matted down, bent, or absent ☐ sediment sorting
☒ leaf litter disturbed or washed away ☒ scour
☒ sediment deposition ☒ multiple observed or predicted flow events
☒ water staining ☐ abrupt change in plant community
☐ other (list):
☒ Discontinuous OHWM.[7] Explain:Some areas fan out in braided patterns with shallow waters making OHWM difficult to discern in some areas. Sandy and silty soils with heavy organic debris flow make identification difficult in some areas.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Water color is turbid due to silty contents in flow during the survey effort.

Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): Black Willow Series (up to 1200 feet), mule fat scrub (up to 400 feet).

☒ Wetland fringe. Characteristics: freshwater emergent wetland, freshwater forested/shrub wetland.

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: mainly common amphibian and avian species. Least Bell's vireo surveys were conducted with no presence durning surveys.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size:78.86 acres

Wetland type. Explain:The Wetland encompasses most of the reservoir and within the Excavation and Work including Mule Fat Scrub, Oak Woodland, Riparian Herbaceous, and Riparian Woodland for a total of 78.86 acres within the proposed excavation and work area and within the HWM countour (1040.5) of the reservoir. This is excluding 44.57 acres of Scoured, Coast Live Oak Woodland, Sage Scrub, Ruderal, Developed and Landscaped Communities.

Wetland quality. Explain:Although a large portion of the reservoir contains a Wetland, the quality of habitat is low for most wildlife species. Water is not present all year and therefore, the presence of aquatic species would only occur seasonally rather than year long. With the presence of a park nearby, hiking paths, and horse back riding trails and training rings, the site is disturbed. Disturbed communities allow exotic plant species to establish and spread..

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: Flow after rain events.

Surface flow is**: Discrete**

Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain: .

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **5-10** river miles from TNW.

Project waters are **5-10** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: turbid (due to silt and debris content in the southern area) at the time of survey with the exception of flow from the southwest inlet by bridge structure into the wetland which was clear (includes residential nuissance water).

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):up to 1200 feet for riparian scrub, up to 400 feet for mule fat scrub communities.

☐ Vegetation type/percent cover. Explain: .

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings:sommonly occuring riparian species only.

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **1**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
yes			

Summarize overall biological, chemical and physical functions being performed: Although a large portion of the reservoir contains a Wetland, the quality of habitat is low for most wildlife species. Water is not present all year and therefore, the presence of aquatic species would only occur seasonally rather than year long. With the presence of a park nearby, hiking paths, and horse back riding trails and training rings, the site is disturbed. Disturbed communities allow exotic plant species to establish and spread..

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows

seasonally: Based on information for the Arroyo Seco drainage (HUC 18070105) identified on http://waterdata.usgs.gov/, between 2006 and 2009, seven months out of the year on average have greater than 1 cfs, with four of those months discharging greater than 5 cfs.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. Non-RPWs[8] that flow directly or indirectly into TNWs.
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☒ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: As identified in the figure from the 2010 Chambers Group Jurisdictional Delineation Report, wetland areas directly abut the surface waters identified within the Devil's Gate Reservoir.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: 2010 Chambers Group Jurisdictional Delineation, field survey conducted November 24, 2010.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: .
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☐ Aerial (Name & Date): .
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .

☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .