# APPENDIX C

# BIOLOGICAL CONSTRAINTS ANALYSIS, BURROWING OWL BREEDING SEASON SURVEY REPORT, AND JURISDICTIONAL DELINEATION

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January 27, 2005

Ms. Angela Reynolds
Environmental and Advance Planning Officer
City of Long Beach
Department of Planning and Building, 7th Floor
333 West Ocean Boulevard
Long Beach, CA 90802

Subject: Biological Constraints Analysis of Proposed Home Depot Site, Long Beach, Los Angeles County, California.

Dear Ms. Reynolds:

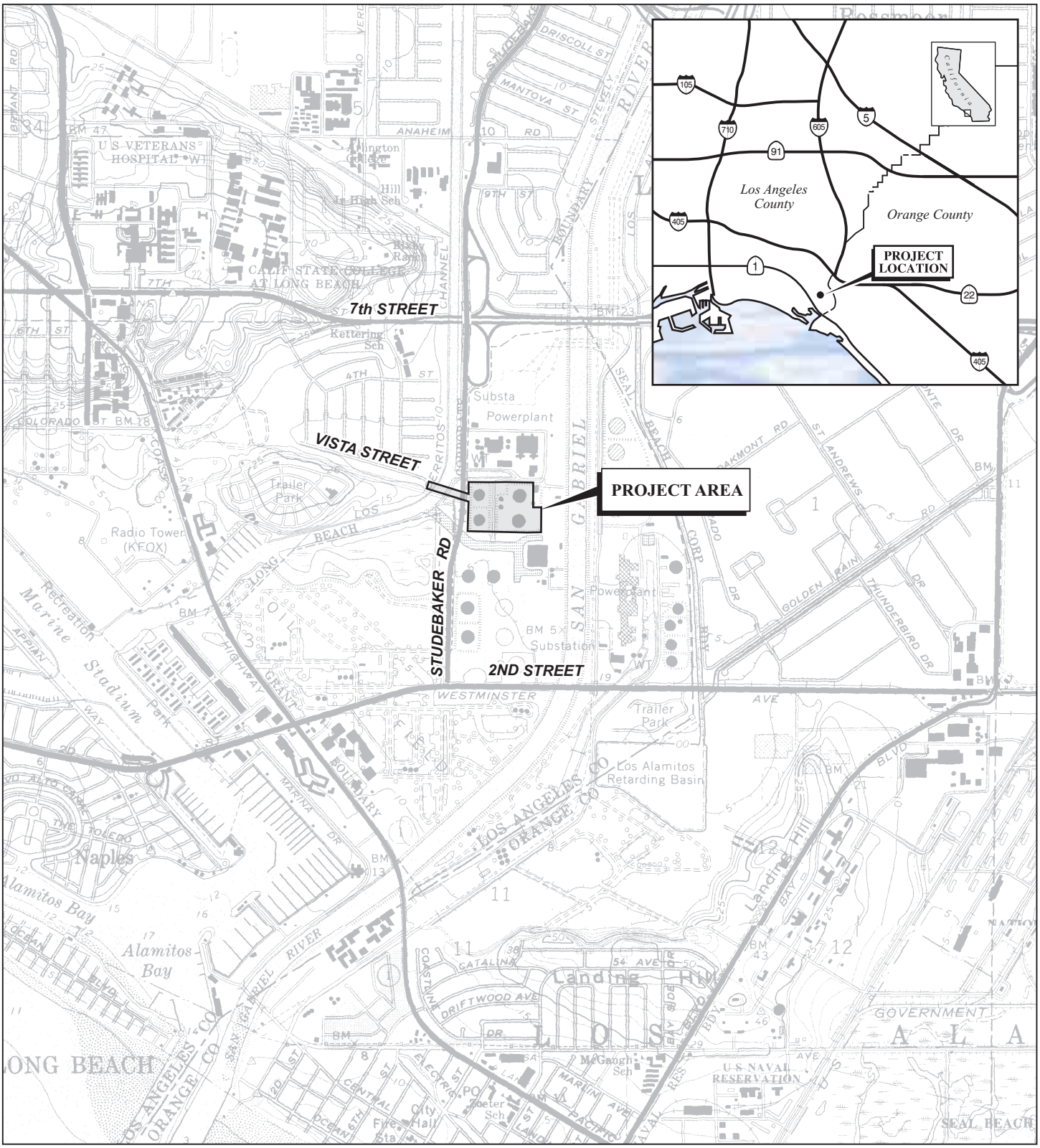
This letter report addresses potential biological constraints with respect to the proposed 16.7-acre project site at the AES Alamitos Electrical Generating Station on a former fuel oil tank farm in Long Beach, Los Angeles County, California (Figure 1). The City of Long Beach (City) is considering an application to develop a new commercial retail center (i.e., a Home Depot store) in the City. The proposed project would include the demolition of existing structures and construction of new facilities and related infrastructure, including a sewer force main. The sewer force main would be constructed underground from the project site to the Loynes Drive bridge, be mounted on the bridge across the Los Cerritos Channel, and then continue underground west of the channel to a connection point on Vista Street.

The project area, located at 400 Studebaker Road, is approximately five feet above mean sea level and is located approximately one mile southwest of Interstate 405 and approximately one-half mile northeast of Marine Stadium and Alamitos Bay. The project area is located on the USGS 7.5-minute series *Los Alamitos* quadrangle in the central portion of Section 2, Township 5 South, Range 12 West. The project area is generally between the Los Cerritos Channel to the west and the San Gabriel River to the east and is located at the eastern end of Loynes Drive where it terminates at Studebaker Road. Existing AES Alamitos electrical generating facilities and associated equipment are immediately adjoining the site to the north, south, and east. Residential communities are located west of the Los Cerritos Channel, and the Los Cerritos Wetlands are located southwest of the project area. The project area contains above ground storage tanks surrounded by earthen containment berms. Paved roads surround the periphery of the site. Two unnamed manmade water supply channels located to the north and south of the project area provide water to the adjacent power generation facilities.

## METHODS

### Records Search

A records search was conducted by LSA Associates, Inc. (LSA) to assist in determining the existence or potential occurrence of any sensitive plant and animal species or sensitive natural communities on




LSA

FIGURE 1

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0 1000 2000

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*Home Depot East Long Beach*

Project Location

SOURCE: USGS 7.5' Quads - Seal Beach & Los Alamitos, Ca.

I:\CLB430\G\Location_owl.cdr (7/12/04)

site or in the project vicinity. Database records for the *Los Alamitos* USGS 7.5-minute series quadrangle were examined using the California Department of Fish and Game's (CDFG) RareFind 3, and the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (6th ed., electronic version 1.5.2). A summary of sensitive plant and animal species potentially occurring on site or in the vicinity is included in Attachment A.

### Field Surveys

LSA biologist Jim Harrison conducted a reconnaissance-level survey of the project site on February 20, 2004, between approximately 9:00 a.m. and 12:00 p.m. The entire site was surveyed on foot. Recorded information included the overall character of the site, plant and animal species present, and potential jurisdictional areas.

A burrowing owl *(Athene cunicularia)* was observed within the project site during the reconnaissance-level survey on February 20, 2004. A subsequent burrowing owl breeding season survey was conducted by LSA biologists between March 24 and March 29, 2004, in accordance with Burrowing Owl Survey Protocol and Mitigation Guidelines prepared by The California Burrowing Owl Consortium (1993). The Burrowing Owl Breeding Season Survey Report is attached to this letter (Attachment B).

LSA biologists Jim Harrison and Nicole Carlier conducted a routine jurisdictional delineation of a small portion of the Los Cerritos Channel immediately north of the Loynes Drive bridge on July 2, 2004, between approximately 9:00 a.m. and 11:00 a.m. The delineation was completed according to the 1987 U.S. Army Corps of Engineers (Corps) *Wetlands Delineation Manual*. Concurrently, LSA determined the extent of streambed resources that may be subject to CDFG jurisdiction through provisions of the Fish and Game Code of California (Sections 1602). The jurisdictional delineation is attached to this letter (Attachment C).

## FINDINGS

### Vegetation

The project site is an abandoned tank farm that is graded and heavily disturbed. The tanks are constructed on flat pads with containment berms around the perimeter of each tank. The berms are constructed of soil and the surfaces are mostly covered with a surface stabilization material to maintain the structural integrity of the berms. Vegetation within the project area is primarily located on the slopes of the berms in areas where the stabilization material has cracked, thus exposing the soil below. Some scattered vegetation is present in the flat areas surrounding the tanks. Vegetation in the project area is sparse, low growing, and very ruderal. This vegetation consists primarily of common horseweed *(Conyza canadensis)*, dense-flowered sprangletop *(Leptochloa uninervia)*, Russian-thistle *(Salsola tragus)*, alkali weed *(Cressa truxillensis*), alkali-mallow (*Malvella leprosa*), five-hook bassia *(Bassia hyssopifolia)*, red-stemmed filaree *(Erodium cicutarium)*, common groundsel *(Senecio vulgaris)*, and scattered patches of mulefat *(Baccharis salicifolia)*. Other ruderal species observed within the project area include weedy cudweed *(Gnaphalium luteo-album)*, slender aster *(Aster subulatus* ssp. *ligulatus)*, perennial sow-thistle *(Sonchus arvensis)*, and a small amount of saltgrass (*Distichlis spicata*). Common nonnative species typically found in disturbed areas were observed near the perimeter of the site and include Mexican fan palm (*Washingtonia robusta*), myoporum (*Myoporum laetum*), and pampas grass (*Cortaderia selloana*). Evidence of previous herbicide application and manual weeding was observed within the project site.

A row of approximately 20 mature ornamental pine trees (*Pinus* sp.) along Studebaker Road were cut down some time between November 1, 2003, and January 27, 2004. Branches and other vegetative material from the removal of the trees were observed during the field survey conducted on February 20, 2004.

The Los Cerritos Channel contains open water year round and does not appear to support any wetland habitat. Vegetation on the channel banks and adjacent access roads is sparse, low growing, and very ruderal. This vegetation consists primarily of scattered patches of common woody pickleweed *(Salicornia virginica)* near the water line in exposed soil between the riprap, five-hook bassia *(Bassia hyssopifolia)*, Russian-thistle *(Salsola tragus)*, and common horseweed *(Conyza canadensis)*. Vegetation in a vacant lot located near the corner of Studebaker Road and Loynes Drive consists primarily of upland nonnative grasses and forbs. The dominant vegetation in this area consists of ripgut grass *(Bromus diandrus)*, red brome *(Bromus madritensis* ssp. *rubens)*, wild oat (*Avena* sp.), Russian thistle, and tocalote *(Centaurea melitensis)*. Other plant species scattered about the vacant lot included five-hook bassia, common groundsel *(Senecio vulgaris)*, common horseweed, and perennial sow-thistle *(Sonchus arvensis)*. Ornamental landscaping west of the channel consists of two eucalyptus trees (*Eucalyptus* sp.) and a groundcover of hottentot fig *(Carpobrotus edulis)*.

The records search identified a total of nine sensitive plant species as potentially present in the study area, including two species currently listed as federal or State threatened or endangered. The two listed species are salt marsh bird's-beak *(Cordylanthus maritimus* ssp. *maritimus)* and California orcutt grass *(Orcuttia californica)*, which are not expected to occur on site due to lack of suitable habitat. Of the nine sensitive plant species identified in the records search, only the southern tarplant *(Centromadia parryi* ssp. *australis)* had a reasonable probability of being present in the project area. No sensitive plant species or natural communities were observed within the project area during the field surveys, and no sensitive plant species or natural communities are expected to occur due to lack of suitable habitat. For more detail, see Attachment A.

The project area has been heavily disturbed and contains sparse ruderal vegetation. Impacts to vegetation are considered less than significant due to the generally disturbed condition of the project area. No mitigation is required.

## Wildlife

Wildlife species identified in the project area consist of species commonly associated with disturbed areas in the coastal zone. In addition to the 1 burrowing owl observed on the site on February 20, 2004, 1 butterfly, 1 amphibian, 2 reptile, 21 bird, and 3 mammal species were observed or otherwise detected in the project area. A complete list of animal species observed or otherwise detected on site is included in the attached Burrowing Owl Breeding Season Survey Report (Attachment B).

The records search identified 17 sensitive animal species potentially present in the project area, including four species currently listed as federal or State threatened or endangered. The California brown pelican *(Pelecanus occidentalis californicus)*, listed as both a State and federal endangered species is likely to fly over, but not forage on site. The California least tern *(Sterna antillarum browni)*, listed as both a State and federal endangered species, historically nested in the vicinity, but was not observed on site and is not expected to occur in the project area because of the site's disturbed nature. The American peregrine falcon *(Falco peregrinus anatum)*, listed as a State endangered species, may occasionally forage in the area, but was not observed on site and is not

expected to occur in the project area. The Belding's savannah sparrow *(Passerculus sandwichensis beldingi)*, State listed as endangered, is known to nest in the nearby Los Cerritos Wetlands, but was not observed on site and is not expected to occur in the project area because of the lack of suitable habitat. The remaining sensitive animal species identified in the records search were not observed within the project area during the field surveys, and are not expected to occur due to the disturbed nature of the site and lack of suitable habitat.

The burrowing owl is listed as a State species of special concern according to CDFG. Recommendations were recently made to list the species under the State Endangered Species Act, but the State determined that listing the species was not warranted at this time. A solitary burrowing owl was observed within the project area by an LSA biologist on February 20, 2004 (for location of observed owl, see Figure 2 of attached report). This observation prompted the need for focused Burrowing Owl Breeding Season Surveys of the project site. No burrowing owls were observed or detected within the project area during these focused surveys conducted between March 24 and March 29, 2004. (See attached report.) The burrowing owl initially observed on site may have been using the area as a migration stop or brief dispersal refuge. Given the results of the focused burrowing owl surveys, not only are burrowing owls not expected to be year-round residents within the project area, but they are expected to be absent as a breeding bird within the project area. Therefore, no significant adverse impacts to wildlife species, including the burrowing owl, would result from implementation of the proposed project, and no mitigation is required.

## POTENTIAL JURISDICTIONAL AREAS

### Project Site

Many of the ruderal plants scattered about the berms and containment basins on site are hydrophytes. The Corps defines hydrophytes as plants that are typically associated with wetlands 50 percent of the time or more. These hydrophytic plants (e.g., *Conyza canadensis*, *Cressa Truxillensis*, *Distichlis spicata*, *Leptochloa uninervia*, *Baccharis salicifolia*, *Malvella leprosa*, *Aster subulatus* ssp. *ligulatus*) are not prevalent throughout the site, but are prevalent in various patches and other discrete groupings scattered about the site. However, while these plants are hydrophytes, they are also halophytes, or plants adapted to surviving soils with increased salinity levels. These plants did not appear to be generally associated with wetland hydrology on site, but are more likely present because of the saline soil conditions rather than the moisture regime. Therefore, although a jurisdictional delineation of the principal project area was not conducted, these hydrophyte-dominated areas would not be considered jurisdictional.

A two-foot-wide earthen drainage ditch extends along the western berm of the northeast tank containment area. This small ditch terminates at a 12-inch diameter concrete pipe that extends through the northern berm, under a dirt road, and into the unnamed water intake channel north of the project area. The pipe had a sliding metal flap over the opening that could be used to regulate flows into the pipe. The ditch and pipe are artificial, manmade structures constructed specifically for the purpose of draining the tank containment area as needed. While an ordinary high water mark (OHWM) was evident in the ditch, the ditch did not appear to function as a natural stream course. Therefore, although a jurisdictional delineation of the principal project site was not conducted, this drainage ditch would also not be considered jurisdictional.

Construction of the proposed Home Depot site may come very close to the channel banks of the two artificial water intake channels located off-site to the north and south of the project area. To avoid any

incidental discharge of fill, debris, or other material into these jurisdictional channels, LSA recommends that the construction contractor install some type of protective barrier (e.g., snow or silt fencing) between the project area and these water intake channels. The barrier should be a bright color (e.g., fluorescent orange) to ensure clear visibility.

**Los Cerritos Channel**

The jurisdictional delineation conducted by LSA and attached to this report (Attachment C) identified the limits of both potential Corps and CDFG jurisdictions associated with a small portion of the Los Cerritos Channel just north of the Loynes Drive bridge. According to preliminary engineering plans, it appears that the point where the sewer line would cross the Los Cerritos Channel would be above and outside potential jurisdictional limits. According to the project engineer, the installation of the sewer line will not include any work within the channel itself. Therefore, the construction of the sewer line would not impact jurisdictional areas and would not be subject to agency jurisdiction. However, any changes in the alignment, installation method, or final design of the sewer line should be reviewed for consistency with this finding. Any impacts within the channel or potential jurisdictional limits would be subject to regulations of the various agencies (i.e., Corps, Regional Water Quality Control Board, CDFG, California Coastal Commission, County of Los Angeles). As a precaution, protective measures should be implemented during installation of the sewer force main to prevent any incidental discharge of fill, debris, or other material into the Los Cerritos Channel. Also, since the Corps and CDFG make the final determination with regard to their respective jurisdictions, LSA recommends getting concurrence of our findings from these agencies before beginning work in the area. (See Attachment C)

If you have any questions or comments regarding this letter report, please contact me at (949) 553-0666.

Sincerely,

**LSA ASSOCIATES, INC.**

Jim Harrison, Senior Biologist
Associate

cc: Lisa Williams

Attachments: Attachment A: Sensitive Species Summary
Attachment B: Burrowing Owl Breeding Season Survey Report
Attachment C: Jurisdictional Delineation Report

# ATTACHMENT A

# SENSITIVE SPECIES SUMMARY

# ATTACHMENT A: SENSITIVE SPECIES SUMMARY

Sensitive species are those plants and animals occurring or potentially occurring on site that are endangered or rare, as those terms are used by CEQA and its Guidelines, or are of current local, regional, or State concern. Plant communities are considered to be sensitive biological resources based on: (1) federal, State, or local laws regulating their development, (2) limited distributions, and/or (3) the habitat requirements of sensitive plants or animals occurring on site.

Legal protection for sensitive species varies widely, from the relatively comprehensive protection extended to listed threatened/endangered species to no legal status at present. The California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), local agencies, and special interest groups such as the California Native Plant Society (CNPS) publish watch lists of declining species; these lists often describe the general nature and perceived severity of the decline. In addition, recently published findings and preliminary results of ongoing research provide a basis for consideration of species that are candidates for State and/or federal listing. Finally, species that are clearly not rare or threatened Statewide or regionally, but whose local populations are sparse, rapidly dwindling, or otherwise unstable, may be considered to be of "local interest."

Attachment A lists the sensitive species identified in the database search, along with short summaries of habitat requirements, legal protection status, and potential for occurrence in the project area.

| SPECIES | HABITAT AND DISTRIBUTION | ACTIVITY/ BLOOMING PERIOD | STATUS DESIGNATION | OCCURRENCE PROBABILITY |
|---|---|---|---|---|
| **PLANTS** | | | | |
| **Davidson's saltscale**<br><br>*Atriplex serenana* var. *davidsonii* | Typically associated with alkaline soils in coastal bluff scrub or coastal scrub; below 850 feet elevation. Southern California Coastal from Santa Barbara County to Baja California and Channel Islands. | April–October | US: --<br>CA: SP<br>CNPS: 1B | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |
| **southern tarplant**<br><br>*Centromadia parryi* ssp. *australis* | Margins of marshes and swamps, valley and foothill grassland, vernal pools from Southern California and Baja California. Often in disturbed sites near the coast, also in alkaline soils with saltgrass; below 1,500 feet elevation. | May–November | US: --<br>CA: SP<br>CNPS: 1B | **Moderate.** Not observed during surveys but suitable habitat and conditions are present in the project area. |

| SPECIES | HABITAT AND DISTRIBUTION | ACTIVITY/ BLOOMING PERIOD | STATUS DESIGNATION | OCCURRENCE PROBABILITY |
|---|---|---|---|---|
| **Salt marsh bird's beak**<br><br>*Cordylanthus maritimus* ssp. *maritimus* | Limited to the higher zones of coastal salt marsh habitat. Sea level to 30 feet elevation. Central and Southern California Coast to Baja California. | May–October | US: END<br>CA: END<br>CNPS: 1B | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |
| **Coulter's goldfields**<br><br>*Lasthenia glabrata* ssp. *coulteri* | Marshes, playas, vernal pools, grassland; sea level to 3,000 feet elevation. Inland Southern California and along coast from San Luis Obispo County to Baja California. | March–June | US: --<br>CA: SP<br>CNPS: 1B | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |
| **mud nama**<br><br>*Nama stenocarpum* | Marshes and swamps. Muddy places (lake margins and shores, river banks), intermittently wet areas below 1,000 feet elevation, throughout southwestern California. | January–July | US: --<br>CA: SP<br>CNPS: 2 | **Moderate.** Suitable habitat is present. However, species not observed during surveys. |
| **coast woolly heads**<br><br>*Nemacaulis denudata* var. *denudate* | Sandy places such as coastal dunes, beaches, etc., below 300 feet elevation along Southern California coast from Santa Barbara County to Baja California. | April–September | US: --<br>CA: SP<br>CNPS: 1B | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |
| **California Orcutt grass**<br><br>*Orcuttia californica* | Vernal pools in Ventura, Riverside, and San Diego counties, Baja California; known from fewer than 20 locations; below 2,000 feet elevation. | April–June | US: END<br>CA: END<br>CNPS: 1B | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |
| **salt spring checkerbloom**<br><br>*Sidalcea neomexicana* | Alkaline springs and marshes, in areas of coastal sage scrub, chaparral, coniferous forest, desert scrub; typically below 4,500 feet elevation; southwestern U.S. | March–June | US: --<br>CA: SP<br>CNPS: 2 | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |
| **estuary seablite**<br><br>*Suaeda esteroa* | Coastal salt marshes along Southern California coast from Santa Barbara County to Baja California from sea level to 15 feet elevation. | Year-round | US: --<br>CA: SP<br>CNPS: 1B | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |

| SPECIES | HABITAT AND DISTRIBUTION | ACTIVITY/ BLOOMING PERIOD | STATUS DESIGNATION | OCCURRENCE PROBABILITY |
|---|---|---|---|---|
| **INVERTEBRATES** | | | | |
| **monarch**<br><br>*Danaus plexippus* | Wide range of habitats throughout much of North and South America. Larval food plants are milkweeds *(Asclepias)* and dogbane *(Apocynum)*. | Year-round | US: --<br>CA: SA (wintering sites) | **Low.** Although the species is known to occur on site, wintering concentrations are not. |
| **sandy beach tiger beetle**<br><br>*Cicindela hirticollis gravida* | Areas adjacent to nonbrackish water along the coast of California from San Francisco Bay to Northern Mexico. Clean dry light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action. | Year-round | US: --<br>CA: SA | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |
| **tiger beetle**<br><br>*Cicindela senilis frosti* | Inhabits the marine shoreline from the Central California Coast south to the salt marshes of San Diego. Dark-colored mud in the lower zone and dried salt pans in the upper zone. | Year-round | US: --<br>CA: SA | **Low.** Lack of suitable habitat in the project area. Not observed during surveys. |
| **REPTILES** | | | | |
| **southwestern pond turtle**<br><br>*Clemmys marmorata pallida* | Permanent or nearly permanent water in a wide variety of habitat types; marshes, sloughs, ponds, slow-moving streams; requires basking sites such as partially submerged logs, rocks, or open mud banks. Ranges from the San Francisco Bay area to northwest Baja California. | Year-round with reduced activity in November–March | US: --<br>CA: CSC | **Low.** Probably not present in the project area. |
| **San Diego horned lizard**<br><br>*Phrynosoma coronatum blainvillei* | Wide variety of habitats, including coastal sage scrub, grassland, riparian woodland; typically on or near loose sandy soils; coastal and inland areas from Ventura County to Baja California. | April–July with reduced activity in August–October | US: --<br>CA: CSC | **Low.** Probably not present in the project area. |
| **BIRDS** | | | | |
| **California brown pelican**<br><br>*Pelecanus occidentalis californicus* | Primarily marine habitats, Pacific Coast of North America | Year-round | US: END<br>CA: END | **Moderate.** Likely to overfly, but not forage on the site. |

| SPECIES | HABITAT AND DISTRIBUTION | ACTIVITY/ BLOOMING PERIOD | STATUS DESIGNATION | OCCURRENCE PROBABILITY |
|---|---|---|---|---|
| **California least tern**<br>*Sterna antillarum browni* | Nests along the coast from San Francisco Bay to Baja California, including Upper Newport Bay. Colonial breeder on bare or sparsely vegetated, flat substrates; sand beaches, alkali flats, landfills, or paved areas. Winters on the Pacific coast of the American tropics. | April through August | US: END<br>CA: END | **Low.** Birds may occasionally overfly the site, but are unlikely to forage. |
| **Northern harrier**<br>*Circus cyaneus* | Temperate Zone worldwide. | Year-round | US: --<br>CA: CSC | **Low.** Birds nesting in the vicinity may forage on site. |
| **merlin**<br>*Falco columbarius* | Open country; breeds in the Holarctic and winters south to the tropics. | Fall, winter, and spring | US: --<br>CA: CSC | **Low.** Occasional foraging on site may occur. |
| **American peregrine falcon**<br>*Falco peregrinus anatum* | Widespread, but scarce and local throughout North America. | Year-round | US: --<br>CA: END | **Low.** Birds nesting in the vicinity may forage on site. |
| **burrowing owl**<br>*Athene cunicularia* | Open country throughout much of North and South America. | Year-round | US: --<br>CA: CSC | **Observed.** One bird seen on February 20, 2004. |
| **Allen's hummingbird**<br>*Selasphorus sasin* | Various shrubby and wooded habitats; breeds primarily in California, winters primarily in Mexico. | Spring–Summer | US: --<br>CA: SA | **Moderate.** Fairly common in developed areas. |
| **loggerhead shrike**<br>*Lanius ludovicianus* | Open country in much of North America. | Year-round | US: --<br>CA: CSC | **Moderate.** Formerly widespread in the area but increasingly rare. |
| **California horned lark**<br>*Eremophila alpestris actia* | Open grasslands and fields, agricultural areas from northern coastal California to northwestern Baja California. | Year-round interior (inland areas) | US: --<br>CA: CSC | **Low.** May occasionally forage on site. |
| **Belding's Savannah sparrow**<br>*Passerculus sandwichensis beldingi* | Coastal salt marshes from Santa Barbara County to central Baja California. | Year-round | US: --<br>CA: END | **Low.** Although present in the marsh across Studebaker Road, suitable habitat is lacking in the project area. |

| SPECIES | HABITAT AND DISTRIBUTION | ACTIVITY/ BLOOMING PERIOD | STATUS DESIGNATION | OCCURRENCE PROBABILITY |
|---|---|---|---|---|
| **tricolored blackbird**<br>*Agelaius tricolor* | Open country in western Oregon, California, and northwestern Baja California. | Year-round | US: --<br>CA: CSC | **Low.** Lack of suitable habitat in the project area. |
| **MAMMALS** | | | | |
| **San Diego black-tailed jackrabbit**<br>*Lepus californicus bennettii* | Open country of coastal Southern California and northern Baja California. | Year-round | US: --<br>CA: CSC | **Low.** May no longer occur in the immediate vicinity. |

## Legend

### US: Federal Classifications

| | |
|---|---|
| END | Taxa listed as Endangered. |
| THR | Taxa listed as Threatened. |
| P END | Taxa proposed to be listed as Endangered. |
| P THR | Taxa proposed to be listed as Threatened. |
| C | Candidate for listing. Refers to taxa for which the USFWS has sufficient information to support a proposal to list as Endangered or Threatened, issuance of the proposal(s) is anticipated but, precluded at this time. |

### CA: State Classifications

| | |
|---|---|
| END | Taxa State-listed as Endangered. |
| THR | Taxa State-listed as Threatened. |
| RARE | Taxa State-listed as Rare. |
| C END | State candidate (Endangered). |
| C THR | State candidate (Threatened). |
| CSC | California Species of Special Concern. Refers to taxa with populations declining seriously or that are otherwise highly vulnerable to human developments. |
| SA | Special Animal. Refers to taxa of concern to the Natural Diversity Data Base regardless of their legal or protection status. |
| SP | Special Plant. Refers to taxa of concern to the Natural Diversity Data Base regardless of their legal or protection status. |
| FP | Fully Protected Animal |

### CNPS: California Native Plant Society Classifications

| | |
|---|---|
| 1A | Plants presumed by CNPS to be extinct in California. |
| 1B | Plants considered by CNPS to be rare, threatened or endangered in California and elsewhere. |
| 2 | Plants considered by CNPS to be rare, threatened or endangered in California, but more common elsewhere. |
| 3 | Plants suggested by CNPS for consideration as endangered but about which more information is needed. |
| 4 | Plants of limited distribution whose status is monitored by CNPS. |

# ATTACHMENT B

# BURROWING OWL BREEDING SEASON SURVEY REPORT

LSA

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January 27, 2005

Ms. Angela Reynolds, Environmental Planning Officer
City of Long Beach
Department of Planning and Building, 7th Floor
333 West Ocean Blvd.
Long Beach, CA 90802

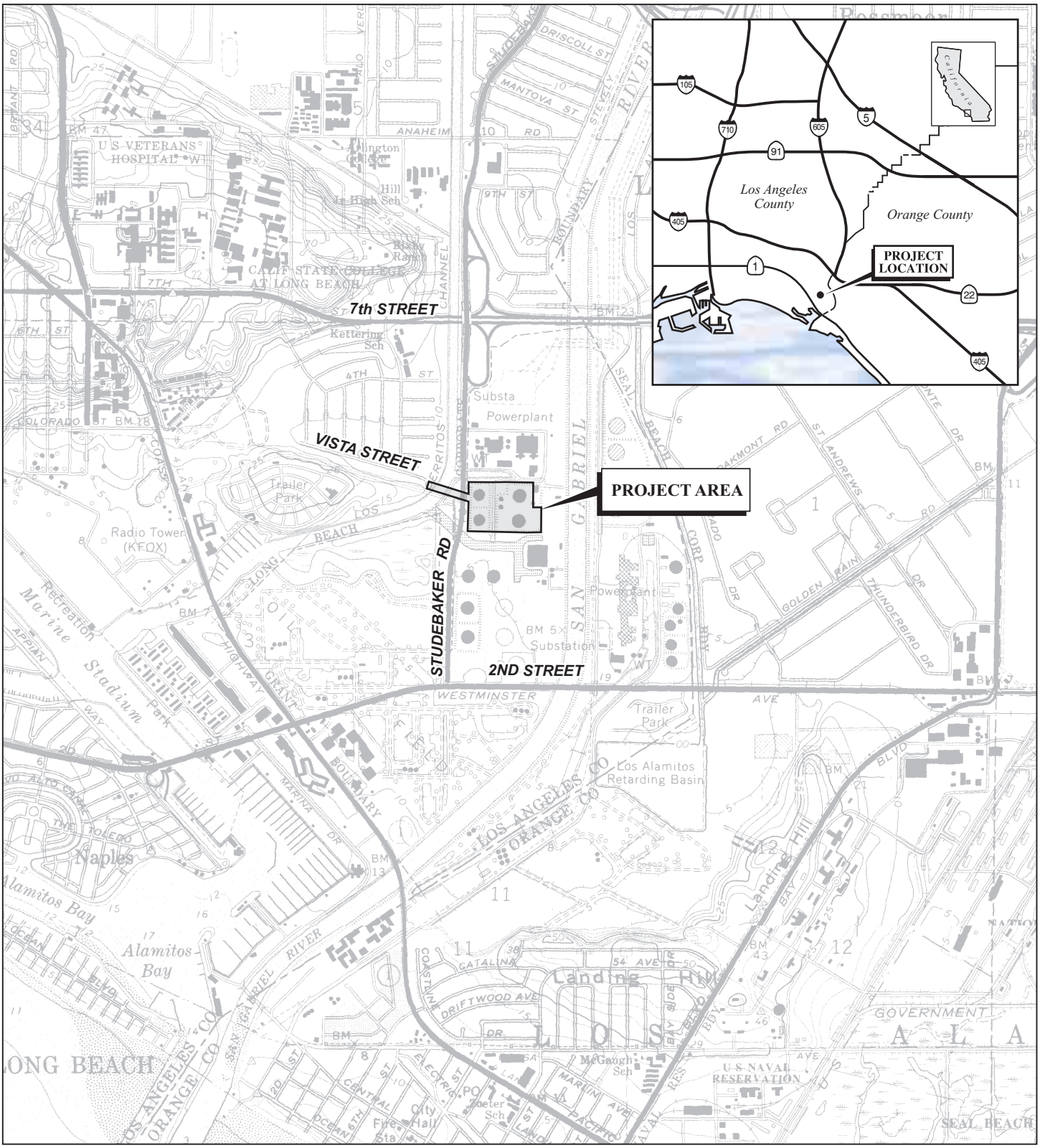
Subject: Burrowing Owl Breeding Season Survey Results, Long Beach Home Depot Site, 400 Studebaker Road, Long Beach, Los Angeles County, California

Dear Ms. Reynolds:

This letter and figures present the results of four burrowing owl *(Athene cunicularia)* breeding season surveys conducted by LSA Associates, Inc. (LSA) at the proposed Home Depot retail site at the Alamitos Electrical Generating Station fuel oil tank farm in Long Beach, Los Angeles County, California (Figure 1). Focused burrowing owl breeding season surveys were initiated because an LSA biologist observed a burrowing owl on site on February 20, 2004. Potential burrows were also observed on the same day on nearby berms. Breeding season surveys were conducted pursuant to the Burrowing Owl Survey Protocol and Mitigation Guidelines prepared by The California Burrowing Owl Consortium (1993).

## STUDY AREA

The study area is a 16.7-acre site located at 400 Studebaker Road in the City of Long Beach, Los Angeles County, California. The study area is approximately five feet above mean sea level and is located one mile southwest of Interstate 405 and one-half mile northeast of Marine Stadium and Alamitos Bay. The study area is located on the USGS 7.5 minute *Los Alamitos* quadrangle in the central portion of Section 2, Township 5 South, Range 12 West. The study area is generally between the Los Cerritos Channel to the west and the San Gabriel River to the east and is located at the eastern end of Loynes Drive where it terminates at Studebaker Road. Existing electrical generating facilities and associated storage tanks are immediately adjoining the site to the north and south, and east. Residential communities are located near the study area west of the Los Cerritos Channel. The Los Cerritos Wetlands are located southwest of the study area. The study area consists of above ground storage tanks and associated equipment surrounded by containment berms. Paved roads surround the periphery of the site. Two unnamed manmade water supply channels located to the north and south of the study area provide water supply to the adjacent power generation facilities.




LSA

FIGURE 1

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*Home Depot East Long Beach*

Project Location

SOURCE: USGS 7.5' Quads - Seal Beach & Los Alamitos, Ca.

I:\CLB430\G\Location_owl.cdr (7/12/04)

The study area is within the coastal zone and is subject to the City of Long Beach Local Coastal Program.

A row of mature ornamental pine trees (*Pinus* sp.) along the western edge of the study area was removed prior to commencement of the surveys. Low growing ruderal vegetation at the site was sparse, since the berm slopes are, at least partially, covered with a lining and concrete. Ruderal vegetation was observed growing through the cracked lining. Plant species observed within the study area include, saltgrass *(Distichlis spicata)*, alkali weed *(Cressa truxillensis)*, common horseweed *(Conyza canadensis)*, alkali-mallow *(Malvella leprosa)*, red-stemmed filaree *(Eriodium cicutarium)*, Russian thistle *(Salsola tragus)*, common groundsel *(Senecio vulgaris)*, and sparse mulefat *(Baccharis salicifolia)*, and exotic grasses. Flat, unvegetated dirt in the bottom of the basins surrounds each abandoned tank.

Wildlife observed within, or birds flying over, the study area during the surveys included Pacific treefrog *(Hyla regilla)*, western fence lizard *(Sceloporus occidentalis)*, black-crowned night-heron *(Nycticorax nycticorax)*, osprey *(Pandion haliaetus)*, red-tailed hawk *(Buteo jamaicensis)*, feral pigeon *(Columbia livia)*, black phoebe *(Sayornis nigra)*, white-crowned sparrow *(Zonotrichia leucophrys)*, house finch *(Carpodacus mexicanus)*, and Audubon cottontail *(Sylvilagus audubonii)*. A complete list of detected animal species, including those detected during the February 20, 2004, site visit, is attached.

## METHODOLOGY

LSA biologist Jim Harrison observed one burrowing owl within the study area at the base of some vegetation on February 20, 2004. The location of the burrowing owl sighting is shown on Figure 2. Potential burrows were also observed within the manmade berms surrounding the storage tanks. LSA biologists recommended that breeding season burrowing owl surveys be conducted to determine if burrowing owls were using the study area on a regular basis or for breeding.

LSA biologists Richard Erickson and Ingri Quon completed four focused breeding owl surveys of the study area from March 24 to 29, 2004. Breeding season burrowing owl surveys were conducted on the evenings of March 24, 28, and 29, and the morning of March 27, 2004. The visits, which included one dawn and three dusk surveys, followed the recommended Burrowing Owl Survey Protocol. The dawn survey was conducted from one hour prior to sunrise to two hours following sunrise (5:00 a.m. to 8:00 a.m.), and the dusk surveys were conducted from two hours before sunset to one hour after sunset (4:00 p.m. to 7:00 p.m.).

The first breeding season survey for burrowing owls and burrows was conducted on March 24, 2004, and visually covered the entire study area. The first evening survey was conducted by two biologists walking parallel transects at approximately 30 meter (100 foot) spacing, allowing for 100 percent visual coverage of the ground. During this first survey, potential burrows and refuges were noted and mapped to ensure investigation on subsequent surveys. Two biologists conducted the first survey, since visibility of burrowing owl(s) in the area around the tanks could have been difficult, particularly when the birds occasionally fly, often low to the ground, when disturbed. All subsequent

LSA

FIGURE 2

STUDY AREA

PRIMARY POTENTIAL BURROWING OWL BURROW LOCATIONS

BURROWING OWL SIGHTING ON 2/20/04

N

0 150 300 FEET

0 45.7 91.5 METERS

SOURCE: City of Long Beach, Public Works

*Long Beach Home Depot*

Study Area and Primary Potential Burrowing Owl Burrow Locations

I:\ CLB430\G\Aerial_owl.cdr (4/6/04)

surveys were conducted by one biologist on foot, as this was deemed suitable for complete and proper visual coverage of the site. Previously located potential burrows were checked for activity during each survey visit.

## RESULTS

Burrowing owl habitat is considered to be occupied by either observing a burrowing owl at a burrow entrance or finding molted feathers, cast pellets, prey remains, or excrement at or near the burrow entrance (1993). During the first survey, areas of high burrowing owl potential were mapped and are shown in Figure 2. High potential detection areas were based on the presence of burrows of suitable size for occupation or potential refuges. While several potential burrows were located within the project limits, no burrowing owls or their sign were observed or detected within the study area during the four focused burrowing owl surveys (Table 1). All burrows were therefore believed to be occupied by mammals such as Beechey ground squirrels *(Spermophilus beecheyi)* and Audubon cottontail *(Sylvilagus audubonii)*.

**Table 1: Survey Descriptions**

| Date 2004 | Time | Conditions | Owl Locations | Surveyor |
|---|---|---|---|---|
| **Site Visit** | | | | |
| Feb 20 | 1000-1100 | Mild, overcast, calm | One burrowing owl observed | JH |
| **Breeding Surveys** | | | | |
| March 24 | 1600-1900 | Cool, mostly clear, moderate wind | No owls or owl sign detected | RE, IQ |
| March 27 | 0500-0800 | Cool-mild, clear, light wind | No owls or owl sign detected | RE |
| March 28 | 1600-1900 | Warm, clear, light-moderate wind | No owls or owl sign detected | RE |
| March 29 | 1600-1900 | Warm, clear, calm | No owls or owl sign detected | IQ |
| Biologists: JH: Jim Harrison; RE: Richard Erickson; IQ: Ingri Quon | | | | |

Freshwater is noted in the Burrowing Owl Survey Protocol and Mitigation Guidelines as a necessity. The closest freshwater source is located in a pond approximately three quarters of a mile to the southwest of the site near The Market Place shopping center. Additionally, raised retention ponds associated with the electric generating plants are located adjacent to and east of the study area, but the quality of the water was undetermined.

## CONCLUSIONS

Occupied burrowing owl habitat is considered lacking on site. Thus, the burrowing owl observed in late February at the site may have been using the area as a migration stop or brief dispersal refuge. Burrowing owls are not expected to be year-round residents since neither sign nor owls were observed during the focused breeding season surveys. It is concluded that the burrowing owl is absent as a breeding bird within the study area.

Please contact Lisa Williams at (949) 553-0666 if you have any questions about this report.

Sincerely,

**LSA ASSOCIATES, INC.**

Ingri Quon
Biologist

cc: Bill Tippets, California Department of Fish and Game

Attachment: Animal Species Observed

References:

The California Burrowing Owl Consortium. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. April 1993.

# ATTACHMENT

# ANIMAL SPECIES OBSERVED

# ANIMAL SPECIES OBSERVED

This is a list of the butterflies, amphibians, reptiles, birds and mammals noted in the study area by LSA biologists. Presence may be noted if a species is seen or heard, or identified by the presence of tracks, scat, or other signs.

* Introduced species

| | |
|---|---|
| **LEPIDOPTERA** | **BUTTERFLIES** |
| **Nymphalidae** | **Brush-Footed Butterflies** |
| *Vanessa cardui* | Painted lady |
| **AMPHIBIA** | **AMPHIBIANS** |
| **Hylidae** | **Treefrogs** |
| *Hyla regilla* | Pacific treefrog |
| **REPTILIA** | **REPTILES** |
| **Iguanidae** | **Iguanid Lizards** |
| *Sceloporus occidentalis* | Western fence lizard |
| *Uta stansburiana* | Side-blotched lizard |
| **AVES** | **BIRDS** |
| **Phalacrocoracidae** | **Cormorants and Shags** |
| *Phalacrocorax auritus* | Double-crested cormorant |
| **Ardeidae** | **Herons** |
| *Ardea herodias* | Great blue heron |
| *Ardea alba* | Great egret |
| *Egretta thula* | Snowy egret |
| *Nycticorax nycticorax* | Black-crowned night-heron |
| **Accipitridae** | **Kites, Hawks, Eagles, and Ospreys** |
| *Pandion haliaetus* | Osprey |
| *Buteo jamaicensis* | Red-tailed hawk |
| **Laridae** | **Jaegers, Gulls, and Terns** |
| *Larus californicus* | California gull |

| | | |
|---|---|---|
| **Columbidae** | | **Pigeons and Doves** |
| * | *Columba livia* | Feral pigeon |
| | *Zenaida macroura* | Mourning dove |
| **Strigidae** | | **Typical Owls** |
| | *Athene cunicularia* | Burrowing owl |
| **Trochilidae** | | **Hummingbirds** |
| | *Calypte anna* | Anna's hummingbird |
| **Tyrannidae** | | **Tyrant Flycatchers** |
| | *Sayornis nigricans* | Black phoebe |
| **Corvidae** | | **Jays, Magpies, and Crows** |
| | *Corvus brachyrhynchos* | American crow |
| **Hirundinidae** | | **Swallows** |
| | *Stelgidopteryx serripennis* | N. rough-winged swallow |
| | *Hirundo rustica* | Barn swallow |
| **Sturnidae** | | **Starlings** |
| * | *Sturnus vulgaris* | European starling |
| **Motacillidae** | | **Pipits** |
| | *Anthus rubescens* | American pipit |
| **Emberizidae** | | **New World Sparrows** |
| | *Zonotrichia leucophrys* | White-crowned sparrow |
| **Icteridae** | | **American Orioles** |
| | *Agelaius phoeniceus* | Red-winged blackbird |
| **Fringillidae** | | **Fringillid Finches** |
| | *Carpodacus mexicanus* | House finch |
| | *Carduelis tristis* | American goldfinch |
| **MAMMALIA** | | **MAMMALS** |
| **Leporidae** | | **Rabbits and Hares** |
| | *Sylvilagus audubonii* | Audubon cottontail |
| **Sciuridae** | | **Squirrels** |
| | *Spermophilus beecheyi* | Beechey ground squirrel |

| | |
|---|---|
| **Procyonidae** | **Raccoons** |
| *Procyon lotor* | Raccoon |

Taxonomy and nomenclature follow Mattoni (1990. Butterflies of Greater Los Angeles. Center for Conservation of Biodiversity/Lepidoptera Research Foundation, Los Angeles), Laudenslayer et al. (1991. A Checklist of the Amphibians, Reptiles, Birds, and Mammals of California. California Fish and Game 77:109-141), and the American Ornithologists' Union (1998. The A.O.U. Checklist of North American Birds, 7th ed. American Ornithologists' Union, Washington D.C. and supplements).

# ATTACHMENT C

# JURISDICTIONAL DELINEATION REPORT

LSA

LSA ASSOCIATES, INC.
20 EXECUTIVE PARK, SUITE 200
IRVINE, CALIFORNIA 92614

949.553.0666 TEL
949.553.8076 FAX

BERKELEY
COLMA
FORT COLLINS
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

December 29, 2004

Ms. Angela Reynolds
Environmental and Advance Planning Officer
City of Long Beach
Department of Planning and Building, 7th Floor
333 West Ocean Boulevard
Long Beach, CA 90802

Subject: Results of Jurisdictional Delineation, Los Cerritos Channel North of the Loynes Drive Bridge, Long Beach, Los Angeles County, California

Dear Ms. Reynolds:

This letter report presents the results of a routine jurisdictional delineation conducted by LSA Associates, Inc. (LSA) biologists on July 2, 2004. The area examined consists of the portion of the Los Cerritos Channel that may be subject to both U.S. Army Corps of Engineers (Corps) and California Department of Fish and Game (CDFG) jurisdictions. The study area includes an approximately 150 foot segment of the Los Cerritos Channel north of the Loynes Drive Bridge in the City of Long Beach (Figure 1). The study area extends from the bridge west to Vista Street and east to Studebaker Road. The study area is approximately five feet above mean sea level and is located approximately one mile southwest of Interstate 405 and approximately two miles northeast of Marine Stadium and Alamitos Bay.

## METHODS

LSA biologists Jim Harrison and Nicole Carlier conducted a routine jurisdictional delineation in the study area on July 2, 2004, between approximately 9:00 a.m. and 11:00 a.m. A wetlands delineation was completed according to the 1987 Corps Wetlands Delineation Manual. Concurrently, LSA determined the extent of streambed resources that may be subject to CDFG jurisdiction through provisions of the Fish and Game Code of California (Sections 1601–1603).

## RESULTS

The Los Cerritos Channel is a concrete-lined, trapezoidal, flood control channel with ungrouted riprap banks. The Loynes Drive bridge is a concrete bridge supported by two bridge piers. The Los Cerritos Channel conveys urban runoff and storm flows from the upstream watershed to the Pacific Ocean. The portion of the Los Cerritos Channel within the study area is tidally influenced by the Pacific Ocean. The channel has an interstate commerce nexus by virtue of being tributary to a navigable body of water, the Pacific Ocean. Water stains on the bridge piers indicate a visible high tide line and an ordinary high water mark (OHWM) (Figures 2a and 2b). The OHWM is clearly visible below the crest of the channel banks and above the high tide mark. Therefore, the portion of the channel below

the OHWM is potentially subject to Corps jurisdiction. The width of potential Corps jurisdictional area between OHWMs is approximately 214 feet (Figure 1).

The channel contains open water year round and does not appear to support any wetland habitat. Vegetation on the channel banks and adjacent access roads is sparse, low growing, and very ruderal. This vegetation consists primarily of scattered patches of common woody pickleweed (*Salicornia virginica*) near the water line in exposed soil between the riprap, five-hook bassia *(Bassia hyssopifolia)*, Russian-thistle *(Salsola tragus)*, and common horseweed *(Conyza canadensis)*. Common woody pickleweed is an obligate wetland plant (OBL) and five-hook bassia is a facultative plant (FAC). Both species are hydrophytic, but neither are prevalent along the riprap banks. In fact, vegetation along the channel banks is so sparse that the banks would be considered essentially unvegetated. Because hydrophytic vegetation is not prevalent in the study area, no jurisdictional wetlands were identified.

Vegetation in a vacant lot located near the corner of Studebaker Road and Loynes Drive consists primarily of upland nonnative grasses and forbs. The dominant vegetation in this area consists of ripgut grass *(Bromus diandrus)*, red brome *(Bromus madritensis* ssp. *rubens)*, wild oat (*Avena* sp.), Russian thistle, and tocalote *(Centaurea melitensis)*. Other plant species scattered about the vacant lot included five-hook bassia, common groundsel *(Senecio vulgaris)*, common horseweed, and perennial sow-thistle *(Sonchus arvensis)*. Ornamental landscaping west of the channel consists of two eucalyptus trees (*Eucalyptus* sp.) and a groundcover of hottentot fig *(Carpobrotus edulis)*.

While CDFG jurisdiction sometimes coincides with Corps jurisdiction, CDFG jurisdiction frequently extends beyond the limits of Corps jurisdiction to include the channel banks and any additional riparian habitat. In this case, the area potentially subject to CDFG jurisdiction extends to the top of the channel banks, and is several feet above the potential Corps' jurisdictional limits on each side of the channel. The width of the area potentially subject to CDFG jurisdiction from bank to bank is approximately 242 feet (Figure 1). Areas beyond the channel banks are not subject to CDFG jurisdiction because of the lack of riparian habitat.

LSA recommends having the Corps and CDFG verify the accuracy of this delineation. The actual jurisdictional determination must come from the Corps and CDFG. LSA is available to contact the agencies regarding their concurrence of our delineation. If you have any questions or comments regarding this jurisdictional delineation, please contact me at (949) 553-0666.

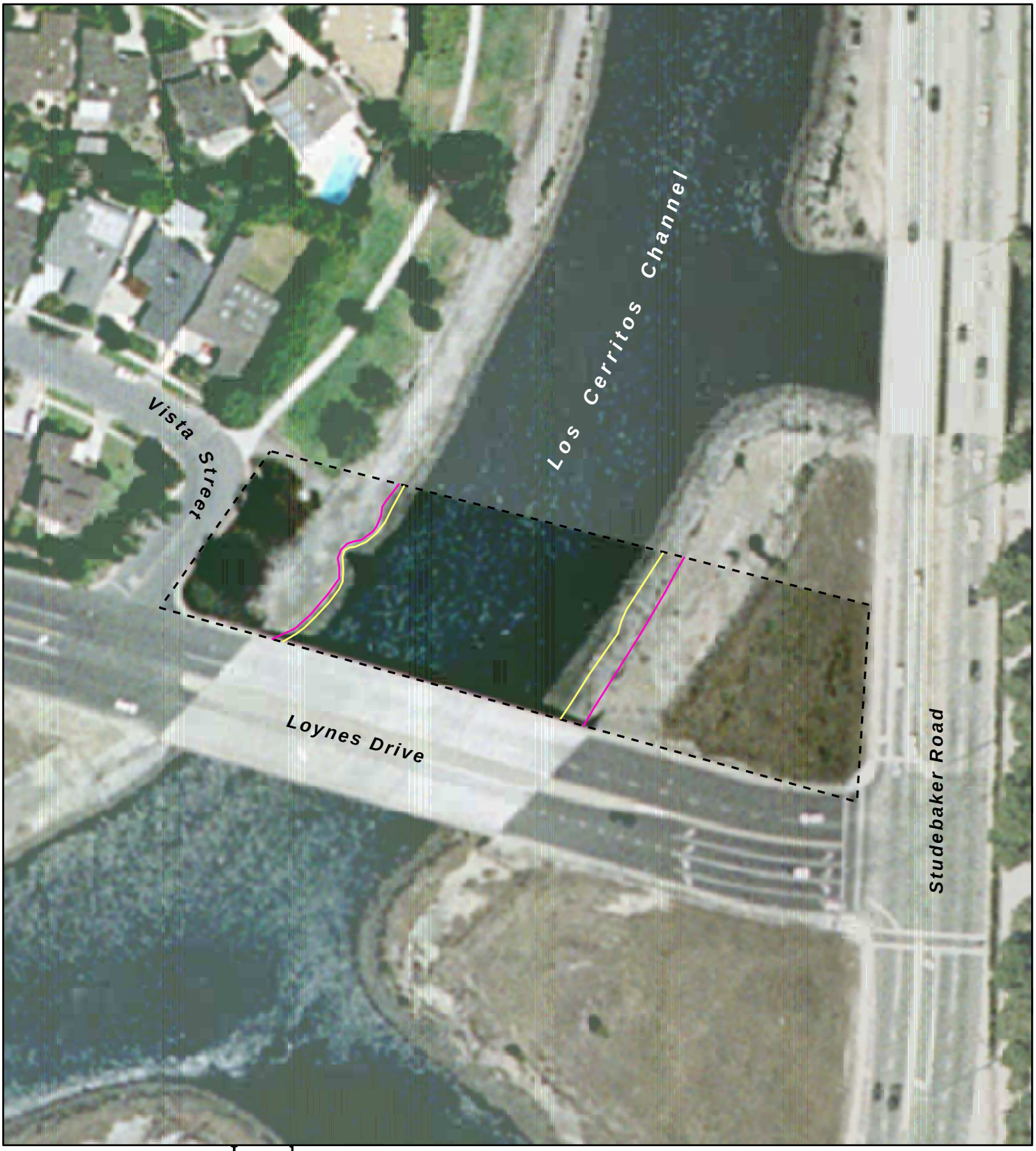
Sincerely,

**LSA ASSOCIATES, INC.**

Jim Harrison, Senior Biologist
Associate

cc: Lisa Williams

Attachments: Figure 1: Potential Jurisdictional Areas
Figures 2a and 2b: Photos of Potential Jurisdictional Areas




LSA

FIGURE 1

**Legend**

- Ordinary High Water Mark-Limit of Non-Wetland Waters of the U.S.
- Limit of California Department of Fish and Game Jurisdiction
- Study Area Boundary

N

0 100 200 Feet

Potential Jurisdictional Area

SOURCE: EAGLE AERIAL 2002

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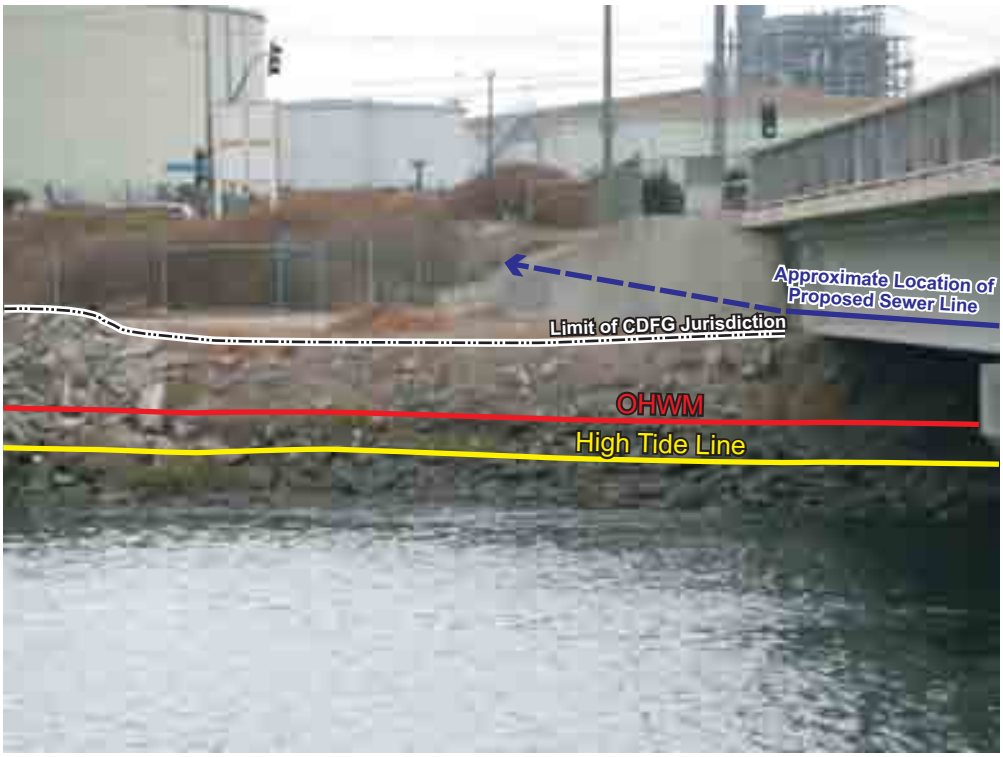


East channel bank.

East channel bank.

LSA

FIGURE 2A

*Home Depot East Long Beach*

Photos of Potential Jurisdictional Areas

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West channel bank.

Bridge Piers.

LSA

FIGURE 2B

*Home Depot East Long Beach*

Photos of Potential Jurisdictional Areas

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FINAL

# CULTURAL RESOURCE SURVEY of the ALAMITOS ELECTRICAL GENERATING STATION FUEL OIL TANK FARM

CITY OF LONG BEACH

LOS ANGELES COUNTY, CALIFORNIA

LSA

October 14, 2004

# CULTURAL RESOURCE SURVEY
# of the
# ALAMITOS ELECTRICAL GENERATING STATION FUEL OIL TANK FARM

CITY OF LONG BEACH

LOS ANGELES COUNTY, CALIFORNIA

Submitted to:

City of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802

Prepared by:

Ivan H. Strudwick
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

LSA Project No. CLB430

**National Archaeological Data Base (NADB)**
*Type of Study:* Record Search and Survey
*Sites Recorded:* P-19-186880—Alamitos Generating Station Fuel Oil Tank Farm
*Sites Updated:* None
*USGS Quadrangle: Los Alamitos 7.5′*
*Acreage:* 17.8 acres
*Level of Investigation:* CEQA
*Importance:* Not Important
*Key Words:* Alamitos Bay, Alamitos Electrical Generating Station, Fuel Oil Tank Farm, Los Cerritos Channel, San Gabriel River, Southern California Edison, Wetlands

LSA

October 14, 2004

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# MANAGEMENT SUMMARY

This report describes the results of the recent LSA Associates, Inc. (LSA) cultural resource survey of the Alamitos Electrical Generating Station Fuel Oil Tank Farm at 400 Studebaker Road at Loynes Drive in Long Beach, California. The purpose of this survey was to identify the presence of historical resources as defined by the California Environmental Quality Act (CEQA 1970), Title 14, Chapter 3 of the California Code of Regulations, Section 15064.5 (as amended December 1, 2003). Archaeological resource assessments are also conducted under the California Public Resources Code Section 21083.2, pursuant to CEQA, Section 21080.1, as part of the determination of whether a project will have a significant environmental impact. Sites determined to be important under CEQA are eligible for listing on the California Register of Historic Resources (California Register).

A cultural resource record search conducted at the South Central Coastal Archaeological Information Center showed that the project area was not previously surveyed and identified no previously recorded sites within the project area or within one half-mile of the project area. An intensive cultural resource surface survey of the 17.8-acre project area, conducted on February 20, 2004, resulted in the identification of no prehistoric cultural resources. However, it was determined that two of the fuel oil tanks, Tank Nos. 1 and 2, were constructed in 1955. A third tank, Tank No. 6, was constructed in 1956. Although the two oldest tanks are 49 years old, it is possible that they will be 50 years old prior to completion of the Environmental Impact Report. As such, the tanks and other elements of the Alamitos Tank Farm, including younger tanks and a fuel oil pumping station, have been recorded as site P-19-186880 to document their presence, relationship, and condition.

It is recommended that the tanks and tank farm are not important under CEQA and should not be listed on the California Register of Historic Resources. Since the project area was originally tidal marshland, there is little potential for buried prehistoric resources. As such, no additional cultural resource work is recommended for this project. Should the project design change to include areas outside of the current project area, the new area will require a cultural resource survey and evaluation.

If human remains are encountered during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the finding immediately If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), who will determine and notify a Most Likely Descendant (MLD). The MLD may inspect the site of the discovery with the permission of the land owner, or his/her authorized representative. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and analysis of human remains and items associated with Native American burials.

# INTRODUCTION

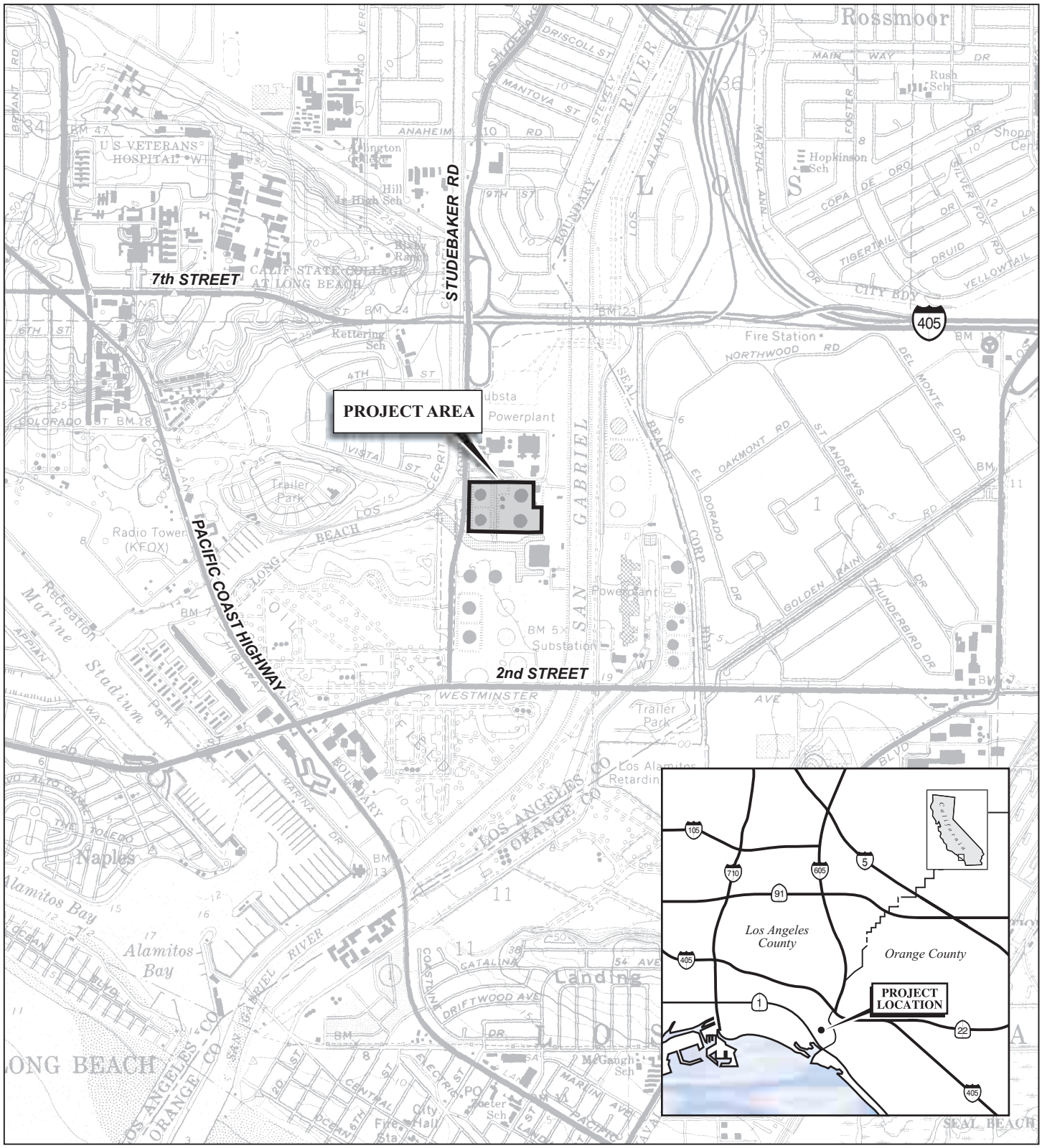
This document describes the results of a cultural resource survey conducted by LSA Associates, Inc. (LSA) within the Alamitos Electrical Generating Station Fuel Oil Tank Farm (Alamitos Tank Farm), a 17.8-acre parcel located at 400 N. Studebaker Road at Loynes Drive in the City of Long Beach, near Alamitos Bay (Figure 1). The project was conducted to assess the presence or absence of cultural resources and evaluate their importance under the California Environmental Quality Act (CEQA 1970), Title 14, Chapter 3 of the California Code of Regulations, Section 15064.5 (as amended December 1, 2003). Archaeological resource assessments were also conducted under the California Public Resources Code Section 21083.2, pursuant to CEQA, Section 21080.1, as part of the determination of whether a project will have a significant environmental impact. Sites determined to be important under CEQA are eligible for listing on the California Register.

## PROJECT LOCATION AND DESCRIPTION

The Alamitos Tank Farm project area lies within the City of Long Beach in southern Los Angeles County. The project area is adjacent to Studebaker Road, and is centrally located between 7th Street (SR 22) on the north and Westminster Avenue on the south, and between the San Gabriel River on the east and Studebaker Road on the west (Figure 1). An arm of the Los Cerritos Channel leading to Alamitos Bay allows bay water to be used for cooling by the electrical generating facility. The Los Cerritos Channel is located along the west side of Alamitos Bay. With the exception of a small area of the northeast corner of the parcel, the project area is nearly rectangular, measuring approximately 800 ft (245 m) north-south, by 1,100 ft (335 m) east-west.

The project area is located on the *Los Alamitos* 7.5′ topographic map (USGS 1964) in Township 5S, Range 12W. This location has an elevation of approximately 5 ft above sea level (asl). Historically, the project area was tidal marshland and was used for farming until the mid-1950s when Southern California Edison (SCE) constructed the Alamitos Fuel Oil Tank Farm on the parcel The Tank Farm was constructed in order to provide fuel oil for the Alamitos Electrical Generating Station, built on land to the north.

The current study is being conducted in order to construct a mixed-use retail-commercial development that will be anchored by a Home Depot. All structures currently within a 16.7-acre portion of the 17.8-acre Tank Farm will be demolished, and sediment contaminated with petroleum products will be removed. A cutter stock oil storage tank, natural gas-fired heaters, and associated equipment on an approximately 1.1-acre fuel oil pumping station portion of the Tank Farm will remain. The proposed project includes a 104,886-square-foot home improvement store with a 34,643-square-foot garden center, a 6,000-square-foot sitdown restaurant with a 2,050-square-foot outdoor eating area, 12,000 square feet of other retail uses, and 737 parking spaces.




LSA

FIGURE 1

N

0 1000 2000
FEET

SOURCE: USGS 7.5' Quads - Seal Beach & Los Alamitos, Ca.

*Home Depot East Long Beach*

Project Location

I:\CLB430\G\HD ELB\Location.cdr (1/6/05)

# SETTING

## Natural Setting

The project area is within a low-lying region that was originally tidal mudflat, or marshland, associated with Alamitos Bay. As such, the major sediment is recent Quaternary alluvial deposit from the nearby San Gabriel River. Today, the San Gabriel River is channelized and sediment is deposited further downstream or in the ocean, where it is periodically dredged from the river mouth at Seal Beach. The current elevation of the project area, 5 ft asl, may have even been lower prehistorically, prior to disturbances and landfill. Higher elevation exists 0.25 mile (0.4 km) west. Bixby Knoll and Landing Hill, both known to have been used for permanent aboriginal occupation, are located 0.75 mile (1.2 km) northwest and southwest, respectively, of the project area.

Biologically, the project area is located within the Coastal Salt Marsh biotic community, a narrow strip of tidal lagoon and salt marsh, including tidal marshland containing low herbs and shrubs and a few perennial grasses (Jaeger and Smith 1971:42). Plants characteristic of the Coastal Salt marsh biotic community include the Sea Blite or Inkweed *(Sueda californica)*, Pickleweed (*Salicornia* spp.), Sea Heath *(Frankenia grandiflora)*, Salt Grass *(Distichlis spicata)*, and Cord Grass *(Spartina foliosa)*. Mammals characteristic of this biotic community include the California Vole *(Microtus californicus)*, Norway Rat *(Rattus norvegicus)*, and House Mouse *(Mus musculus)*. Birds include the Clapper Rail *(Rallus longirostris)*, Common Egret *(Casmerodius albus)*, Snowy Egret *(Leucophoyx thula)*, Marsh Hawk *(Circus cyaneus)*, American Avocet (*Recurvirostra americana*), Willet *(Catoptrophorus semipalmatus)*, and others. Marine invertebrates gathered for food include those inhabiting both bay and exposed sandy beach environments (Morris 1966, Reish 1972; McLean 1978). Bay shellfish were primarily Venus Clam (*Chione* spp.), Scallop (*Argopecten* spp.), and Native California Oyster *(Ostrea lurida)*. Those found along the sandy coast include the Pismo Clam *(Tivela stultorum)* and Bean Clam *(Donax gouldii)*.

The project area is also close to several other biotic communities including coastal strand, riparian woodland, and the coastal sage scrub communities (Jaeger and Smith 1971), which were all utilized for plant and animals. However, acorns were the most important single food source for the local native population (Bean and Smith 1978:539; Bean and Shipek 1978:552), as well as the most characteristic feature of the California Indians as a whole (Gifford 1965:237). Acorn soup or "mush" was the daily food for over three-fourths of native Californians (Balls 1962:10).

## Cultural Setting

**Prehistoric Setting.** The description of an overall regional chronology demarcating the major stages of cultural evolution in Southern California has been attempted many times. Two principal chronologies, Wallace (1955, 1978) and Warren (1968), have been revised slightly for Orange County (Koerper 1981; Koerper and Drover 1983). However, as Southern California cultural developments occur gradually and have long-term stability, applying a specific chronology is often difficult. The cultural setting within this report has been adapted from Strudwick and Sturm (1995:2-11) and Strudwick et al. (1996:1-11).

Southern California researchers have divided regional prehistory into a four-stage chronology describing changing artifact assemblages and evolving ecological adaptations. The principal chronology proposed by Wallace (1955) divides the area prehistory by major cultural changes within

general prehistoric time periods. Wallace defined four chronologically-based cultural divisions for Southern California. These are discussed below (Figure 2).

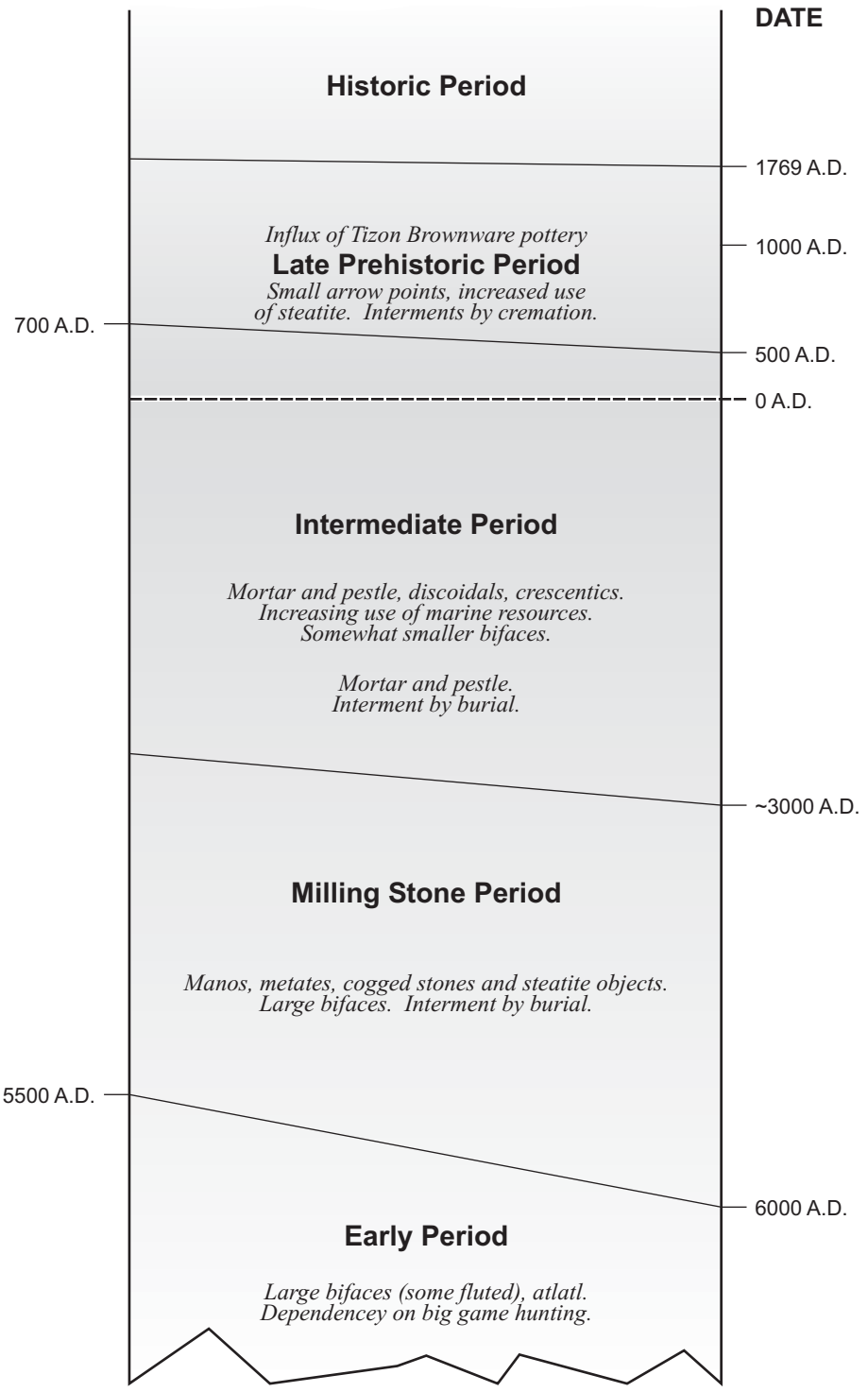
**Early Period (Pre-5750 BC).** The Early Period covers the period from the first presence of humans in Southern California until post-glacial times. Although it is not known exactly when the first humans existed in the region, it is generally believed that the terminal portion of the Early Period was approximately 6000-5500 BC; a date of 5750 BC is used here to mark the end of the Early Period.

Early Period artifacts and cultural activities suggest a predominantly hunting culture (Wallace 1955). The occurrence of extremely large and occasionally fluted bifaces marks this period (Moratto 1984:81). Large bifaces are associated with use of the spear and atlatl, also known as the spear thrower, and indicate a dependence on big game hunting.

Early Period artifacts have seldom been identified in the area; however, radiocarbon data suggest that two sites in the Upper Newport Bay region, ORA-64 and ORA-195, have Early Period components. In addition to ORA-64, other Early Period sites from the San Joaquin Hills area, including ORA-246, ORA-339, and ORA-386, contain quantities of California mussel shell *(Mytilus californianus)* (Erlandson 1994:218-221). It is likely that *Mytilus californianus* shells were collected from the open, rocky coast beginning at a very early time in prehistory.

Site ORA-64 contains Early Period bay inhabiting shellfish likely collected from Newport Bay. This leads Drover et al. (1983) to conclude that early occupation represents an economy with greater emphasis on fishing and shellfish collecting. Similarly, ORA-305, located along Laguna Canyon Road, contains small amounts of shell, primarily *Mytilus californianus* dated cal BC 5385-5215 and cal BC 5375-5205, dated near the terminal portion of the Early Period (Strudwick 1997:105; Figure 2). Site ORA-305 also contains small quantities of bay-inhabiting *Argopecten* spp. shell found in lower levels with the radiocarbon-dated mussel shell. Sites such as these suggest that Early Period collection of bay-inhabiting shell species may be more common than once believed.

**Milling Stone Period (5750–3000 BC).** The Early Period antedates the Milling Stone Period. Wallace suggests that cultures of the Milling Stone Period were generally hunter-gatherers who spent much time collecting and processing plants. When bifaces are found at Milling Stone Period sites, they are commonly large and associated with the use of the atlatl. Sites from this time period (post-5750 BC) typically contain ground stone artifacts such as manos and metates, as well as cogged stones and soapstone objects. Cogged stones are shaped much like discoidals (found later in time), but they have grooves or cogs, giving them an appearance similar to gears with teeth. Crescentics, or crescentically-shaped flaked stone artifacts that are shaped like curved knives, are commonly found on sites located along the shorelines of pluvial lake beds (Warren and Crabtree 1986:184), although they also occur on later period sites. Occasionally, crescentics




LSA

FIGURE 2

*Home Depot East Long Beach*

Generalized Cultural Chronology
of Southern California

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appear to be representations of animals. It is possible that cogged stones and crescentics are both, at least in part, material representations associated with spiritual beliefs. However, what these objects represent is unknown.

Several Milling Stone Period sites have been identified in the area. The best known is the Irvine Site (ORA-64) dating to about 6000 years BC. Drover et al. (1983) suggest that Milling Stone Period sites represent refuse from mobile hunters and gatherers who utilized coastal resources during the winter months and inland resources throughout the remainder of the year. By the late Milling Stone Period, faunal remains indicate relatively permanent settlement at Newport Bay. Subsistence strategies included intensive hunting of small mammals, large mammals, sea mammals, and birds; shellfish collecting; and nearshore fishing with bipointed bone pieces known as barbs or gorges (Reinman 1964). Elsewhere, small mammals were hunted, and grass seeds were processed, as suggested by numerous milling artifacts from Milling Stone Period sites throughout the region.

**Intermediate Period (3000 BC–AD 500).** In approximately 3000 BC, coastal populations began relying more on marine resources, and the remains of nearshore and deep sea fish are much more common in site refuse. Reflecting this emphasis toward increased fishing, circular shell fishhooks first appear at coastal sites. It is believed that extremely circular hooks fouled less frequently on rocks, since this artifact occurs in prehistoric contexts most abundantly in areas adjacent to rocky coastlines (Strudwick 1986:283-284). Further inland, populations centered around pluvial lakes created by runoff from melting glaciers.

The use of the mortar and pestle increased dramatically during the Intermediate Period, and this trait marks the beginning of the Intermediate Period according to Wallace (1955). The use of the mortar and pestle represents an important innovation in seed processing technology and may indicate a diversification in seed-collecting strategies. Unlike the metate, which has a relatively flat surface, the mortar has a bowl-like shape that acts to contain seeds during grinding. Another artifact unique to Intermediate Period sites is the discoidal. Discoidals are rounded stone discs that appear much like cogged stones, except that they lack grooved edges.

Archaeological researchers have had difficulty identifying Intermediate Period sites, since tool categories, even the mortar and pestle, appear in earlier and later periods. As a result, few sites in the area have been placed in this time period. The few sites known from the Intermediate Period have been dated by radiocarbon or obsidian hydration methods. At present, Intermediate Period site components have been identified at ORA-121 (Crownover et al. 1990; Clevenger 1986; Strudwick 1998a), ORA-196/H (Strudwick et al. 1996), ORA-221/222 (Rosenthal and Padon 1986), ORA-226 (Mason et al. 1987), and ORA-269 (Strudwick 2004).

In addition, a series of Intermediate Period *Mytilus californianus* radiocarbon dates have been identified from sites within Crystal Cove State Park (Barter 1983, 1991:114-116; Strudwick 1998b). Although Barter believes these dates are best considered relative rather than absolute, they suggest that sites ORA-130, ORA-280, ORA-281, ORA-323, and ORA-327 were all occupied, at least in part, during the period 2774-485 BC (4729-2440 BP; Barter 1991:116).

Site ORA-1482, a recently tested site in Crystal Cove State Park, also contains *Mytilus californianus* shell (Strudwick 1998b). The shell, found in only small quantities at ORA-1482,

has provided a calibrated radiocarbon date indicating that it was collected approximately 2465-2140 BC (Strudwick 1998b:54). This date is contemporaneous with other Crystal Cove State Park sites. The relatively early Crystal Cove area dates suggest that prehistoric sites located along the coastal San Joaquin Hills were inhabited during the Intermediate Period to a greater degree than sites in other areas of Southern California.

Closer to the project area, Van Bueren et al. (1989) have shown that the majority of prehistoric sites located around the periphery of Bolsa Bay date from the Intermediate Period. Recent Intermediate Period radiocarbon dates from ORA-294 and ORA-366, Locus B, located on the southeast side of Bolsa Bay at Huntington Mesa, support this contention (Strudwick and Sturm 1995). The reason for a majority of Intermediate Period prehistoric sites from Bolsa Bay was a productive estuarine habitat that supported marine shellfish during this period. Afterwards, in the Late Prehistoric Period, Bolsa Bay did not support the growth of marine invertebrates like marine shellfish, and native human populations went elsewhere to collect this valuable food resource. It is likely that the bay stopped becoming productive when a riverine source such as the nearby San Gabriel River altered its course and stopped the periodic scouring of Bolsa Bay. After some years, the bay silted in and was not a hospitable habitat for the growth of marine shell that require a saline environment. Alamitos Bay, however, still supports a marine shellfish population (Reish 1972). Interestingly, prior to its being channelized between 1925-1942, the San Gabriel River emptied into Alamitos Bay.

**Late Prehistoric Period (AD 500–1769).** The Late Prehistoric Period begins in approximately AD 500 (Bean and Smith 1978). During this time period, changes in tool types, representing artifact technology, reflect other changes in cultural patterns such as subsistence strategy and ceremonial practices. These cultural traits have been linked to a proposed Uto-Aztecan (Takic) immigration from the Great Basin to the Pacific Coast.

During the Late Period, projectile points are smaller, indicating use of the bow and arrow for hunting. Circular fishhooks are generally smaller, less circular, and made of bone as well as shell. Steatite effigies become more common during the Late Period, and burial practices include cremation, as well as interment. By AD 1000, ceramic smoking pipes and pottery begin to appear. However, ceramic vessels occur only sporadically in Gabrielino sites, and ceramic vessel technology appears to have remained in a vestigial stage in this area. When ceramics are recovered, they offer a relative method for dating sites. Site dating also depends on other factors, such as the increased frequency of Salton Sea (Obsidian Butte) obsidian, used sporadically in the Orange County area until after ca. AD 1000. Obsidian Butte obsidian is thought to have been made available prehistorically by the receding shore of Lake Cahuilla, its last two stands occurring between approximately AD 900-1500 (Wilke 1978:57). Late Period sites within the Orange County region are also denoted by the presence of Grimes Canyon fused shale, which originates in Ventura County (Demcak 1981; Hall 1988).

## Ethnographic Setting (ca. 1800)

The Late Prehistoric Period ended abruptly when Franciscan friars and Spanish soldiers began establishing mission outposts along the California coast beginning in 1769. The western San Joaquin Hills and adjacent Tustin Plain were then occupied by the Gabrielino Indians. The name *Gabrielino*

refers to the Uto-Aztecan (Takic) speaking Native Americans who lived throughout the present Los Angeles and Orange County areas and who were historically affiliated with Mission San Gabriel Archangel. Today, some of the Gabrielino prefer to call themselves *Tong-va* (McCawley 1996). Gabrielino territory included the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers, several smaller intermittent streams in the Santa Monica and Santa Ana Mountains, all of the Los Angeles Basin, the coast from Aliso Creek north to a point between Topanga and Malibu Creeks, and the islands of San Clemente, San Nicolas, and Santa Catalina (Kroeber 1925:620-621; Bean and Smith 1978:538; McCawley 1996:3). The current project area is located within Gabrielino territory (Kroeber 1925; Johnson 1962; Bean and Smith 1978; McCawley 1996).

**The Gabrielino Indians.** The Gabrielino were hunters and gatherers who used both inland and coastal food resources. They hunted and collected seasonally available food resources, and led a semi-sedentary lifestyle, often living in permanent communities along inland watercourses and coastal estuaries. Commonly chosen habitation sites included rivers, streams, and inland watercourses, sheltered coastal bays and estuaries, and the transition zone marking the interface between prairies and foothills (McCawley 1996). The most important factors in choosing a habitation site were the presence of water, a stable food supply, and some measure of protection from flooding. Gabrielino communities located in the interior regions maintained permanent geographical territories or use areas that may have averaged 30 square miles; however, it is unclear whether this pattern also held for the coastal settlements where food resources may have been more plentiful (White 1963:117; Oxendine 1983:44).

In addition to permanent settlements, the Gabrielino occupied temporary campsites used seasonally for hunting, fishing, and gathering plant foods and shellfish (McCawley 1996:25). Hunting was primarily for rabbit and deer, while collecting included plant foods such as acorns, buckwheat, chía, berries, and fruits. They also established seasonal camps along the coast and near bays and estuaries to gather shellfish and hunt waterfowl (Hudson 1971).

Gabrielino villages generally contained populations with 50-100 inhabitants, although larger communities may have existed. These communities were the focus of family life. Each Gabrielino community included one or more patrilineal extended families or lineal kinship groups, known as clans (Kroeber 1925; Johnson 1962; Bean and Smith 1978; McCawley 1996). Both clans and villages were apparently exogamous, marrying individuals from outside the clan or village (Reid 1852).

Villages were united under the leadership of a *tomyaar*, or chief, who inherited his position from his father. Each lineage comprised several related nuclear families; membership in a lineage was traced through the father and allowed an individual to claim use rights over the territory owned by that group. The *tomyaar* was the leader of the religious and secular life of the community and served as chief administrator, fiscal officer, war leader, legal arbitrator, and religious leader (Bean and Smith 1978; Harrington 1942:32). The *tomyaar* was aided in his duties by a Council of Elders, which consisted of the leaders of the lineages residing in the community, as well as other wealthy and influential individuals. Council positions were hereditary and descended from father to son. Shamans also played an important role in Gabrielino society, serving as the principal doctors, therapists, philosophers, and intellectuals; often, the *tomyaar* himself was an important and influential shaman (Bean 1974:25-26).

Gabrielino culture was characterized by an active and elaborate system of rituals and ceremonies. Rituals included individual rites of passage, village rites, seasonal ceremonies, and participation in the widespread *Chinigchinich* cult (variant spellings Kroeber 1925; McCawley 1996). The cult of the culture hero and creator-god and spiritual being, *Chinigchinich*, was observed and recorded by Franciscan Friar Gerónimo Boscana during his residences at missions San Juan Capistrano and San Luis Rey (Harrington 1933; Boscana 1933). It is thought that the first tomyaar and *Chinigchinich* came from the Gabrielino village of *Puvunga* (*Povuu'nga*), located on what later became Rancho Los Alamitos (Boscana 1933:32-33; McCawley 1966:9, 69).

## Historic Setting

**Spanish Mission Period (1769–1821).** The first recorded contact between the Gabrielino and Europeans occurred in 1542, when the Cabrillo expedition arrived at Santa Catalina Island (Wagner 1941). In the Orange County area, the first recorded contact occurred when Gaspar de Portolá's expedition crossed the region in 1769. The period between 1769 and 1821, when Mexico gained independence from Spain (McGroarty 1911:117, 148; Avina 1932:29; Robinson 1979:13), is often referred to as the Spanish Mission Period (Robinson 1979:51-52). In 1771, Father Junipero Serra established a Franciscan mission at San Gabriel. In 1776, another mission was established in San Juan Capistrano. Although Mission San Juan Capistrano lay outside Gabrielino territory, many of its converts came from the Gabrielino community of *Puvunga*, located 0.75 mile (1.2 km) northwest of the project area.

The Franciscans' goal was to convert the Indians to Christianity and incorporate them into Spanish society. The Gabrielino and other Indian groups learned metallurgy, plant and animal domestication, and European building construction methods. Europeans learned how and where indigenous people lived, and gathered information about native lifeways as well as ceremonial and ritual practices. Occasionally this information was recorded. Father Gerónimo Boscana prepared an account of Gabrielino and neighboring Juaneño lifeways and beliefs (Harrington 1933; Hanna 1978). Boscana's account, *Chinigchinich*, was written during his residency at both San Juan Capistrano (1814-1826) and San Luis Rey (1811-1814) missions, and describes the native cosmology and ritual practiced at the time of Spanish contact (Bean and Smith 1978:548). By the early 1800s, Spanish army officers and veterans living in California began receiving grants of land and establishing large, private grazing areas.

Ultimately, Spanish colonization resulted in the destruction of Gabrielino society and culture. Two important factors that contributed to this decline were the removal of the youngest, healthiest, and most productive Gabrielino from their traditional communities and their incorporation into the Mission System; and the introduction of highly infectious diseases, eventually leading to epidemics and reduced birth rates. As a result, the traditional Gabrielino communities were depopulated and the survivors integrated into local Mexican-American communities. When anthropologist A. L. Kroeber sought Gabrielino descendants during the 1920s, he was unable to locate a group claiming Gabrielino heritage. Today, the federal government does not recognize a local tribe or band, although there are individual spokespeople who have Gabrielino ancestors (Rosenthal et al. 1991).

In addition to the missions, the Spanish also established a town within the Gabrielino territory, *El Pueblo de la Reina de Los Angeles De Porciúncula*, and a number of private ranchos; these included *San Pedro*, *San Rafael*, *Portezuelo*, and *Los Coyotes*. *Rancho Los Coyotes* was granted in 1790 to

Manuel Pérez Nieto and originally encompassed 300,000 acres (including the entire project area), although the grant was later reduced to approximately one-half that size. The headquarters for the rancho was located at "Los Nietos," approximately 13 miles (21 km) north of the current project area near present-day Downey. Nieto cultivated only about 160 acres of this land, probably as a vineyard; the remainder he used as grazing land for his herds of horses and cattle, which reportedly numbered 15,000 to 20,000 head (Cleland 1941:8, 283, note 16; Seager 1996).

**Mexican Rancho Period (1821–1848).** In 1821, Mexico gained independence from Spain, and in 1848 the United States formally obtained California in the Treaty of Guadalupe Hidalgo (Cleland 1962:xiii). The period from 1821-1848 is here referred to as the Mexican Rancho Period. It was during this period that large tracts of land termed *ranchos* were granted by the various Mexican Governors of *alta* California, usually to individuals who had worked in the service of the Mexican Government. In 1833, 12 years after gaining independence from Spain, the Mexican government's Secularization Act changed missions into civil parishes, and those natives who had inhabited regions adjacent to a Spanish Period mission were to obtain half of all mission possessions, including land. However, in most instances this did not occur, and the Secularization Act resulted in the transfer of large mission tracts to politically prominent individuals.

Manuel Perez Nieto died in 1804; however, the *Los Coyotes* grant (which at that time included 167,000 acres) was not formally divided among his heirs until 1833. In that year the rancho was divided into six smaller grants; the following year (1834) one of these, *Los Alamitos*, was sold to Governor Figueroa (Cleland 1941:190). Following Figueroa's death (in 1835) his brother and heir, Francisco, took over as administrator of the estate and manager of *Los Alamitos* (Cleland 1941:190-193). Mounting debts eventually forced Figueroa to sell *Los Alamitos*, and in 1842 the rancho was acquired by Abel Stearns. A few years later, cattle prices soared when the massive influx of American immigrants during the Gold Rush led to an increased demand for beef.

**American Period (Post-1848).** Following the end of hostilities between Mexico and the United States in January of 1847, the United States officially obtained California from Mexico through the Treaty of Guadalupe Hidalgo on February 2, 1848 (Cleland 1962:xiii). Thus, the American Period begins in 1848. In 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849. By 1860, a stagecoach line ran through Riverside County, and the railroad opened between Los Angeles and Indio in 1876 (Gunther 1984:250).

The cattle industry in California reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large pastoral estates in California, and a high demand for beef during the Gold Rush led to a cattle boom that lasted from 1849 to 1855. Cattle ranching remained a profitable business until the mid-1850s, when declining prices and a series of disastrous droughts destroyed the cattle barons of southern California (Cleland 1941:134-135). In addition to cattle raising, agriculture was also pursued at *Rancho Los Alamitos* on a very limited basis; historical records indicate that barley, potatoes, and corn were cultivated near present Seal Beach (Stearns MS) in the vicinity of the current project area.

In 1855, however, the demand for California beef began to decline as a result of sheep imports from New Mexico, cattle imports from the Mississippi and Missouri valleys, and the development of stock

breeding farms. When the beef market collapsed, the California ranchers were unprepared. Many had borrowed heavily during the boom, mortgaging their land at interest rates as high as ten percent per month. The collapse of the cattle market meant that many of these ranchos were lost through foreclosure, while others were sold to pay debts and taxes (Cleland 1941:108-114).

During the winter of 1861–1862, a disastrous series of floods struck California. According to rainfall statistics, more than 45 inches of rain fell in parts of California between November 1861 and February 1862 (Brewer 1930:253). It has been estimated that the 1862 flood was the largest in the recorded history of the Santa Ana River. At Agua Mansa, the high water line marked on the front steps of the church was used to estimate a flow rate of 320,000 cubic feet per second, more than three times the estimated high water maximum recorded in 1938 (Sidler 1973:19 in URS 1988:VIII-81). Lesser flooding episodes along the Santa Ana River also occurred in 1867 and 1891.

This unprecedented deluge was then followed by two years of drought (Cleland 1941:130-131). The drought of the 1860s was a turning point in the economic history of Southern California. The era of the great cattle ranchos ended and many of the landowners who survived the collapse of the cattle industry were forced to sell their property due to the drought. Southern California's economic transition continued through the 1870s. During this period, many of the large landholdings were subdivided, and a diversified agriculture centered on citrus fruits, grapes, and grains appeared. Interest rates declined to a modest 10 percent per year, helping spur continued growth and development. However, drought continued to plague ranchers. The years 1870-1871 and 1876 are reported as particularly dry years in Southern California (Cleland 1941:208-218).

The decline of the cattle industry in the late 1850s caused enormous financial problems for Stearns, and in 1866 he lost *Rancho Los Alamitos* through foreclosure. For the following 15 years, the rancho was leased out to various individuals who used it for grazing cattle, horses, and sheep; the buildings were apparently allowed to deteriorate (Smith 1931:59-60). In 1878, John Bixby began leasing the rancho; when the lease expired three years later, a partnership comprising John Bixby, I. W. Hellman (a Los Angeles banker), and Jotham Bixby and Company purchased the land. John Bixby maintained *Los Alamitos* as a sheep and cattle ranch until his death in 1887, after which the rancho was subdivided equally among the original partners. The portion of the rancho inherited by John Bixby's family was further subdivided among his widow Susan (50 percent), his daughter Susanna (25 percent) and his son Fred (25 percent; Harrington 1933:149; Smith 1931:59,60; Seager 1996).

John's son, Fred Bixby, began managing *Rancho Los Alamitos* in 1898. Following Susan Bixby's death in 1906, Fred and his sister Susanna inherited *Los Alamitos* jointly. For a time, they shared management responsibilities for *Rancho Los Alamitos* and *Rancho Santa Ana* (another Bixby landholding); the combined operation was known as Dos Ranchos. However, the arrangement was short-lived. In 1911, Fred and Susanna partitioned the family land holdings; Fred took most of *Rancho Los Alamitos*, while Susanna took *Rancho Santa Ana* and a small portion of *Los Alamitos* (Seager 1996).

Fred Bixby continued to run *Rancho Los Alamitos* as a cattle ranch until his death in 1952. Recognizing the historical importance of Rancho Los Alamitos, in 1968 the heirs of Fred and Florence Bixby deeded the hilltop site (including the ranch house, barns, and other surviving buildings) to the City of Long Beach as a public historic place. Since 1986, the *Rancho Los Alamitos* Foundation has operated the site on behalf of the city as a public/private cooperative effort (Seager 1996).

Disastrous floods had periodically impacted the area over the years, but it was not until after the floods of 1934 and 1938 (Turhollow 1975:155-165) that a comprehensive flood control plan was authorized by Congress. Three of the dams, Fullerton, Brea, and Prado, were constructed by 1941-1942 (Turhollow 1975:194). Construction of Prado Dam began on November 1, 1928, and was completed on April 29, 1941 (Hatheway 1989:55). Since then, major rivers, such as the Santa Ana River and the San Gabriel River adjacent to the current project area, have been channelized. This was done to control flooding in the urban southern California area.

For purposes of evaluation, historic site context is further discussed in a following section describing the results of archival research. This additional discussion is based on historic maps and aerial photographs obtained at the Archaeological Information Center at California State University, Fullerton (CSUF) and elsewhere.

# RESEARCH METHODOLOGY

## ARCHIVAL RESEARCH

A cultural resource record search was conducted at the Archaeological Information Center at CSUF. This archival search was conducted in order to identify previous surveys and recorded cultural resource sites within the project area, and within a 0.5-mile (0.8 km) radius of the project area. The archival research was also conducted to find historic maps and aerial photographs showing the project area. This was done so an assessment of previous land uses could be made for the current project area.

## SURVEY

An intensive reconnaissance survey was conducted to identify cultural resources within the approximately 18-acre project area. The survey was conducted in all portions of the project area by a surveyor walking a series of parallel transects. Transects were separated by less than 8 m (26 ft). Photographs and notes recording the general layout of the parcel were taken during the survey.

## REPORT PREPARATION

Upon completion of the field survey, a comprehensive draft report was prepared. This report contains all data necessary to assess the importance of cultural resources within the project area. This report includes maps, illustrations, and graphics showing the surveyed area, as well as existing surface and subsurface conditions at the site. Copies of the final document will be provided to the Archaeological Information Center at CSUF.

# RESULTS

## ARCHIVAL RESEARCH

A cultural resource record search at the Archaeological Information Center at CSUF was conducted by Jay Michalsky on February 5, 2004. The results of this archival research are presented in Appendix A. Information indicates that only two previous cultural resource surveys have been conducted within 0.5 mile (0.8 km) of the current project area. These surveys include a survey of the 204-acre Bixby Ranch Parcel located just west of the current project area (Strudwick et al. 1996), and a linear survey along Studebaker Road north and south of the project area and along Loynes Drive west of the project area (McKenna 2001).

Archival research also indicates that there are no previously recorded cultural resource sites within 0.5 mile of the current project area. The reason for this is due more to the fact that the area was originally tidal marshland than due to the absence of cultural resource surveys. Sites are often recorded by interested avocationalists and professionals not conducting "official" professional cultural resource surveys.

Historic maps of the project area were also obtained from the CSUF Archaeological Information Center. The *Downey* 15' topographic map (USGS 1896) shows Alamitos Bay and low-lying swamp and marsh where the project area is located. No structures are located within almost 1.0 mile (1.6 km) of the project area. What eventually becomes Westminster Boulevard is an undulating dirt road ending more than 2.0 miles (3.6 km) east of the parcel.

The 1925 *Long Beach* 6' topographic map (USGS 1925) is at a larger scale and shows that there are a series of what appear to be ponds of pooled water adjacent to marshland where the current project area is located. A dirt road, located approximately where Studebaker Road is today, is shown on the map north of the current project area. The road angles to the northeast, through what is now the project area, in order to miss marshland to the west The road leads from a structure located approximately 0.25 mile (0.4 km) southwest of the current project area to another structure located 0.25-0.5 mile (0.4-0.8 km) northeast of the current project area. It is unknown what these structures were. The map shows that the majority of the area inland of Bolsa Bay was uninhabited marshland.

By 1942, the *Downey* 15' topographic map (USGS 1942) shows that there are still no structures or roads within the current project area. Westminster Blvd. is now a straight road coming to within 0.75 mile (1.2 km) of the project area. The San Gabriel River has been channelized to control the flow of water and flooding during periods of heavy rain. Seventh Street (SR 22) is now a straight, paved thoroughfare.

Three aerial photographs showing the project area were obtained from GeoSearch of Austin, Texas. The first, dated October 19, 1953, clearly shows the project area to be open farmland. Agriculture rows running north-south between the Los Cerritos Channel and the San Gabriel River are clearly depicted in the photograph, which also shows that no structures exist within the current project area.

A second aerial photograph dated July 14, 1956, shows that three oil storage tanks, Tank Nos. 1, 2, and 6, had been constructed within the project area. Initial construction of the SCE Alamitos Electrical Generating Station, located north of the project area, had also begun. Additionally, a small inlet to the Los Cerritos Channel had been dredged in order to provide water for cooling the electrical generating facility.

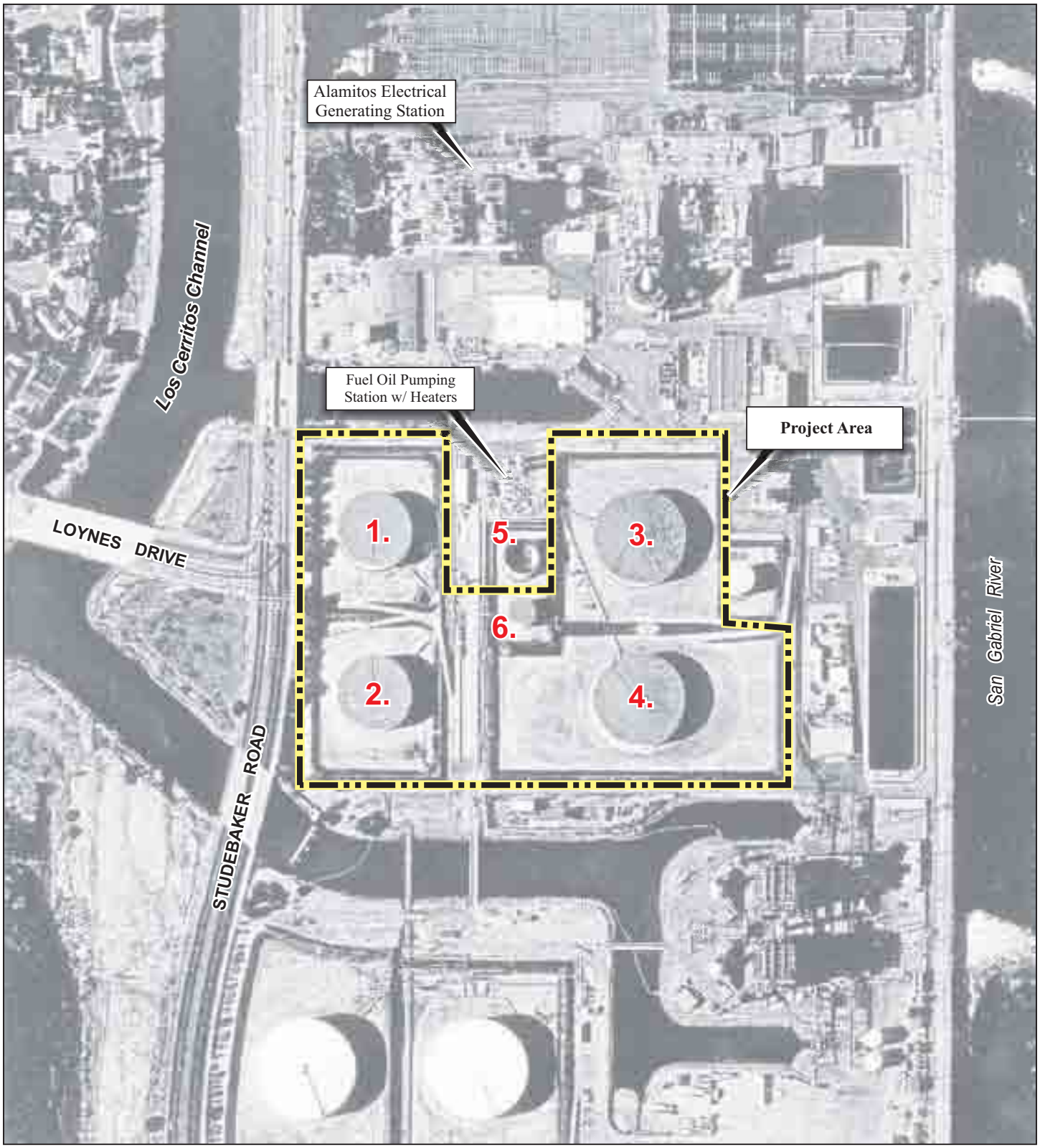
A third and final aerial photograph showing the project area dated May 27, 1960 shows that two additional tanks, Tank Nos. 3 and 4, have been constructed. The generating facility appears to be in approximately the same stage of construction as in 1956, although it is difficult to see.

## SURVEY

An intensive cultural resource survey of the Alamitos Tank Farm project area was conducted on February 20, 2004, by LSA Archaeologist Ivan H. Strudwick. The survey resulted in identifying a 1955 date of construction for two oil storage tanks, Tank Nos. 1 and 2, on the property (Figure 3). A third tank, Tank No. 6, was found to have been constructed in 1956. Although the tanks are currently less than 50 years old, the Environmental Impact Report (EIR) for which this cultural resource survey is being constructed may not be finalized prior to 2005, at which time two of the tanks will be 50 years old and therefore historic. As such, the Alamitos Tank Farm has been recorded as site P-19-186880 on Primary and Building, Structure, and Object record forms (Appendix B). Although the Alamitos Electrical Generating Station encompasses the Tank Farm and other areas, such as the electrical generating facility, which is north and outside the current project area, only that portion of the generating station within the current project area (Alamitos Tank Farm) was surveyed and recorded (Figure 3). Details of the Alamitos Tank Farm are presented after the following discussion of the survey results.

Sediment within the project area is largely a mixture of sandy loam and gravel road rock. It is likely that the sandy loam is alluvial deposit from the San Gabriel River or other tributaries that flowed into Alamitos Bay. It is also possible that the sandy loam is partially fill, since the project area would be marshland if the elevation was not increased slightly with imported sediment. Road rock was probably mixed with the deposits in order to improve vehicle traction during wet periods. Road rock has also been used to create a base on which the oil tanks are placed. Sediment has been bermed into spill-containment, or catchment, basins around each of the tanks. Impervious gunite or asphalt covers the earthen berms. This was done in order to contain any spills or leaks.

On the northern side of the project area, along a small arm of the Los Cerritos Channel leading eastward from the main channel, marine shell exists. This shell exists in an area where granitic rip-rap boulders line the channel arm (Figure 4). The shell includes those species that grow naturally in the brackish backwater of the bay and are the result of dredging to create access to water in order to cool SCE's electrical generation unit north of the current project area. Aerial photographs of the project area (Appendix A) show that this small arm off the east side of the Los Cerritos Channel was created between October 19, 1953, and July 14, 1956. It is also possible that dredging activity after this time deposited the marine shell.




LSA

PROJECT AREA

1. FUEL TANK

N

0 150 300 FEET

0 45.7 91.5 METERS

SOURCE: City of Long Beach, Public Works

FIGURE 3

*Home Depot East Long Beach*

Recent Aerial Photo Showing the Alamitos Electrical Generating Station Fuel Oil Tank Farm

I:\ CLB430\G\Aerial_1.cdr (3/30/04)

Marine shell, the result of dredging, on rip-rap boulders at the northern edge of the project area. View to the WSW.

Alamitos Tank Farm tank Nos. 1 (left) and 2. Earthen spill-containment berm visible between the tanks. Note also the gravel base on which the tank sits. View to the SE.

LSA

FIGURE 4

Project Area Photos

I:\CLB430\G\Photos_1.cdr (3/30/04)

Visible shell includes Venus Clam (*Chione* spp.), Native California Oyster *(Ostrea lurida)*, Scallop (*Argopecten* spp.), Bay Mussel *(Mytilus edilus)*, Washington Clam *(Saxidomus nuttalli)*, Littleneck Clam *(Protothaca staminea)*, Slipper Shell *(Crepidula onyx)*, California Horn Shell *(Cerithidea californica)*, and Festive Rock Shell *(Festivus jaton)*. These marine shells are commonly found in bays (Morris 1966; McLean 1978; Reish 1972). These are also primarily the same shell species identified on a previous survey (Strudwick et al. 1996:38) as dredge spoil from an arm of the channel leading into Alamitos Bay across Studebaker Road to the west (Figure 1). Some of the pelecypods (bivalves) still contain both valves and are closed, indicating that they were deposited here when alive. The shell is the result of dredging sometime between October 1953 and July 1956 to create access to the Los Cerritos Channel for purposes of using the water to cool the generating plant. The shell is not the result of prehistoric human activity.

Along the paved road adjacent to the small eastern arm of the Los Cerritos Channel are several old telephone poles, which are still standing. The lines on these poles either passed through the current project area or led to offices that no longer exist. Today, the lines on these telephone poles lead nowhere and end at the westernmost pole just north of the fuel oil pumping area (Figure 3). Dating nails on these poles are 1950 and 1958, indicating that they were first placed in 1950.

The following discussion describes site P-19-186880, the Alamitos Tank Farm and its elements, and is partly adapted from Cushman and Wakefield (2003). The Alamitos Tank Farm is part of the Alamitos Electrical Generating Station located just north of the current project area. The Tank Farm is a large capacity petroleum storage yard constructed by SCE beginning in 1955 in order to pump and store No. 6 fuel oil burned by the generating station. The entire facility was constructed as one of the principal suppliers of electricity to the Los Angeles Basin. The Alamitos Electrical Generating Station was designed to be dual source-fired by either oil or natural gas. However, in the 1970s, with an increase in environmental awareness and implementation of CEQA, dual source-fired electrical generating plants were required to operate solely on natural gas. No longer useful as designed, the Tank Farm was maintained in case of a natural gas shortage.

The Alamitos Tank Farm consists of four large-capacity petroleum fuel oil tanks (Tank Nos. 1–4; Figure 3), two smaller cutter/displacement oil tanks (Tank Nos. 5 and 6), a fuel oil pumping station with two natural gas-fired heaters designed to maintain oil flowability, and associated pipeline. Tank Nos. 1–4 (Figure 4) were constructed to hold No. 6 fuel oil designed to be burned in the Alamitos Electrical Generating Station north of the project area. Tank Nos. 5 and 6 are smaller (Figure 5) and were designed to hold cutter stock (displacement oil), which is mixed with the No. 6 fuel oil in order to lessen viscosity so it will flow easier and not gum up the pipes or pumping equipment (Figure 5). A seventh tank, located just east of the project area (Figure 3) as well as the fuel pumping station, and Tank No. 5, will not be affected by the proposed project, which includes demolition.

Tank Nos. 1–6 are constructed similarly with some exceptions. All six tanks are welded metal plate, fixed cone-roofed tanks (Figure 5). All contain staircases leading to their roofs. All tanks contain gunite or asphalt-lined earthen berms approximately 10 ft high, capable of containing 110 percent of each tank's capacity in the case of an accidental spill or leak. Tank Nos. 1–4 are fiberglass insulated and covered with a horizontally overlapping plastic facade. They contain a welded metal gutter ut 12

Tank Nos. 5 (left) and 6. Welded metal gutter and gravel base visible at the bottom of both tanks. Staircase on lower left leads over earthen spill-containment berm. View to the NE.

Tank Nos. 3 (left) and 4. Cone roofs clearly visible. View to the NE.

LSA

FIGURE 5

Project Area Photos

I:\CLB430\G\Photos_2.cdr (3/30/04)

about 12 inches high and 24 inches from the base of the tank. Tank Nos. 5 and 6 also contain welded metal gutters, but they are slightly smaller and closer to the tanks. All tanks rest on a base of gravel road rock approximately 12 inches high (Figures 4 and 5). Pipelines leading to Tank Nos. 1–4 appear to be asbestos-lined on the exterior. A small sign, dated June 5, 1990, posted at the base of the staircase on Tank Nos. 1–4 warns that the structural integrity of the tank roofs is not good.

Tank Nos. 1, 2, and 6 contain brass identification plaques on their sides at the base (Figure 6). On Tank Nos. 1 and 2, the ID plaque was located on a cover plate screwed to the tank. Tank Nos. 3 and 4 did not contain ID plaques. The ID plaque on the northwest side of Tank No. 1 shows it to have been constructed in 1955 in Vernon, California. Tank No. 1 has a height of 40 ft, a diameter of 160 ft, and a capacity of 143,200 BBL (42 gallon barrels). The ID plaque on Tank No. 1 is old, worn, has been painted, and is difficult to read. It is not clear what company constructed this tank, but a real estate brochure for the parcel (Cushman and Wakefield 2003) states that the tanks were made by Chicago Steel and Iron Company. The ID plaque on Tank No. 2 is identical to that on Tank No. 1.

Tank Nos. 3 and 4 are identical in size. They both measure 40 ft in height, 200 ft in diameter, and have a capacity of 223,800 BBL. Lacking ID plaques, little else is known about these tanks, aside from what is described previously.

Tank No. 5 (Figure 5) is obviously newer in construction. Although constructed of welded metal plate, Tank No. 5 does not contain fiberglass insulation or a horizontal plastic facade. Tank No. 5 measures approximately 40 ft in height and 80 ft in diameter. The capacity of Tank No. 5 is not known. This tank is not present on an aerial photograph taken May 27, 1960 (Appendix A), and is younger than the other five tanks.

Tank No. 6 contains an ID plaque on the base of its east side indicating that it was manufactured by General American Transportation Co. (“GATEX UT” - Utah?) in 1956 (Figure 6). The plaque also indicates that this tank measures 40 ft in height, is 60 ft in diameter, and has a capacity of 20,120 BBL. GATEX is known today as GATX Corporation. The company was created by Max Epstein in 1898 as the Atlantic Seaboard Dispatch to lease refrigerated rail cars. In 1916, it was listed on the New York Stock Exchange as General American Tank Car Corporation. By 1925, the company, known as GATX Terminals, began petroleum storage and distribution. In 1939, they enlarged operations to manufacture “Aerocoach” buses. Beginning in 1941 and during WWII, they manufactured artillery tanks, tank cars, and shell casings, and afterward expanded operations into commercial aircraft financing. In 2000, their largest operating company was known as GATX Rail Corporation, but in 2001 they had combined their two principal operations into GATX Financial Corporation, specializing in financing and leasing (GATX CO 2004).

Currently, there are other nearby electrical generating facilities. Not counting the six tanks associated with the Alamitos Tank Farm and the one tank outside the Tank Farm, there are 18 similarly sized petroleum oil tanks within one-half mile of the project area (Figure 3). Many of these tanks are similarly constructed.

In summary, The current project area is an approximately 18-acre parcel known as the Alamitos Tank Farm, site P-19-186880, which was constructed by SCE to supply No. 6 fuel oil to the Alamitos

ID plaque on east side of base of tank No. 6 showing tank dimensions and that it was manufactured by General American Transportation Co. In 1956. View to WNW.

Fuel oil pumping station portion of project area. Natural gas fired heater on right. In background Tank No. 1 on right and northern edge of Tank No. 2 on left. View to SW.

LSA

FIGURE 6

Project Area Photos

Electrical Generating Station, located north of the Tank Farm. Identification plaques on Tank Nos. 1 and 2 indicate that they were constructed in 1955 and are currently 49 years old. An identification plaque on Tank No. 6 shows it to have been constructed in 1956 and that it is currently 48 years old. Aerial photographs show that Tank Nos. 3 and 4 were constructed between July 14, 1956, and May 27, 1960. Because the EIR for which this study is being conducted may not be finalized prior to 2005, the two oldest tanks will then be 50 years old, and therefore historic under CEQA guidelines. For this reason, the tanks and other elements within the Tank Farm, including the fuel oil pumping station, have been recorded as site P-19-186880 on State of California Primary and Building, Structure, and Object record forms in order to document their presence, relationship, and condition.

# SUMMARY AND RECOMMENDATIONS

An intensive survey of the 17.8 acre Alamitos Tank Farm project area resulted in the identification of no prehistoric cultural resources. Marine shell from the north side of the project area was determined to be dredge spoil from the dredging of a small channel linking the generating station to the Los Cerritos Channel. Dredging was done for purposes of using the water to cool the generating station. Because the project area was originally tidal marshland, it is unlikely that this area was used prehistorically and there is little potential for buried prehistoric resources.

The survey did find that two petroleum fuel oil tanks on the property, Tank Nos. 1 and 2, were constructed in 1955. A third tank, Tank No. 6, was found to have been constructed in 1956. Because the EIR for which this study is being conducted may not be finalized prior to 2005, the two oldest tanks will then be 50 years old, and therefore historic under CEQA. For this reason, the tanks and other elements of the Tank Farm, including the fuel oil pumping station, have been recorded as site P-19-186880 on State of California Primary and Building, Structure, and Object record forms in order to document their presence, relationship, and condition.

The Alamitos Tank Farm, site P-19-186880, was constructed to supply the Alamitos Electrical Generating Station with No. 6 fuel oil. Although designed to be dual source-fired by either oil or natural gas, the generating station used oil as fuel for many years. However, in the 1970s, with an increase in environmental awareness and the implementation of CEQA, the plant was required to operate solely on natural gas. The fuel oil tanks were no longer useful as designed. Aside from the oil tanks associated with the Alamitos Tank Farm, there are 18 other oil tanks of similar size and construction within 0.5 mile of the project area. Most of these other tanks are related to nearby electrical generating facilities and are not related to the Alamitos Tank Farm. Because the tanks within the Alamitos Tank Farm project area are not distinctive in their design, are not associated with events of significance, and are not likely to yield important historic information, it is recommended that the tanks and Alamitos Tank Farm are not important under CEQA and should not be listed on the California Register. As such, no additional cultural resource work is recommended for this project. Should the project design change to include areas outside of the current project area, the new area will require a cultural resource survey and evaluation.

If human remains are encountered during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the finding immediately If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), who will determine and notify a Most Likely Descendant (MLD). The MLD may inspect the site of the discovery with the permission of the land owner, or his/her authorized representative. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and analysis of human remains and items associated with Native American burials.

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# APPENDIX A

# RESULTS OF ARCHIVAL RESEARCH

# Bibliography: CLB430

**IC ID#:** LA5215 **DATE:** 2001 **PAGES:** 68

**AUTHOR:** McKenna, Jeanette A.

**FIRM:** McKenna et al.

**TITLE:** A Cultural Resources Investigation of the Proposed Long Beach Ocean Desalination Project, Long Beach, Los Angeles County, CA

**AREA:** <>10 li mi

**SITES:** 19-000235, 19-000306, 19-000234

**QUADNAME:** Long Beach
Los Alamitos

**MEMO:**

**IC ID#:** LA5890 **DATE:** 1996 **PAGES:** 76

**AUTHOR:** [redacted] STRUDWICK, McCAWLEY, McLEAN, STURM

**FIRM:** LSA

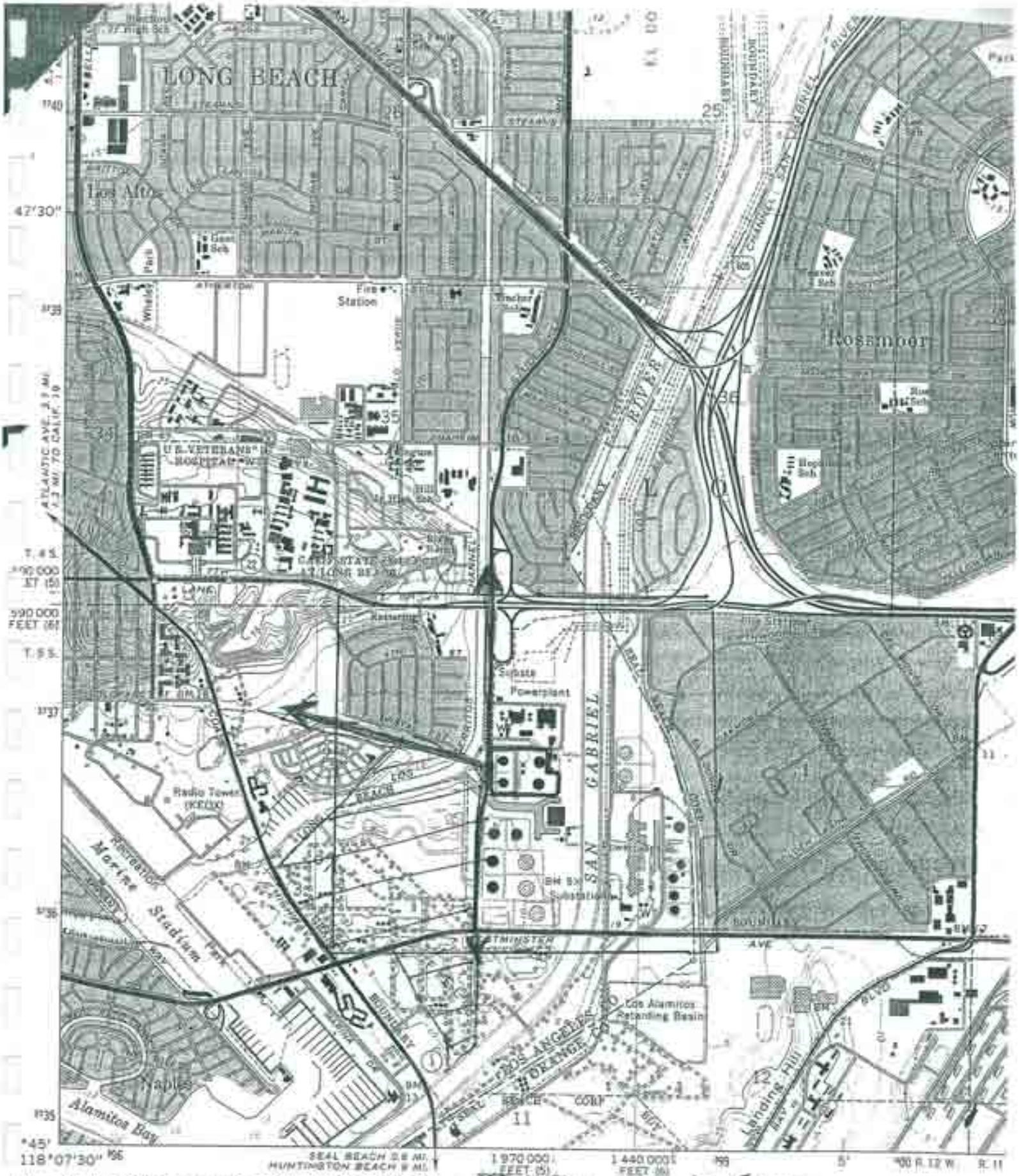
**TITLE:** Cultural Resource Survey of the Bixby Ranch Parcel Near Alamitos Bay, Los Angeles County, California

**AREA:** 204

**SITES:**

**QUADNAME:** Los Alamitos

**MEMO:**




Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, Los Angeles County, and Orange County

Planimetry by photogrammetric methods from aerial photographs taken 1963. Topography by planetable surveys 1964

Selected hydrographic data compiled from USC&GS Chart 5148 (1965)
This information is not intended for navigational purposes

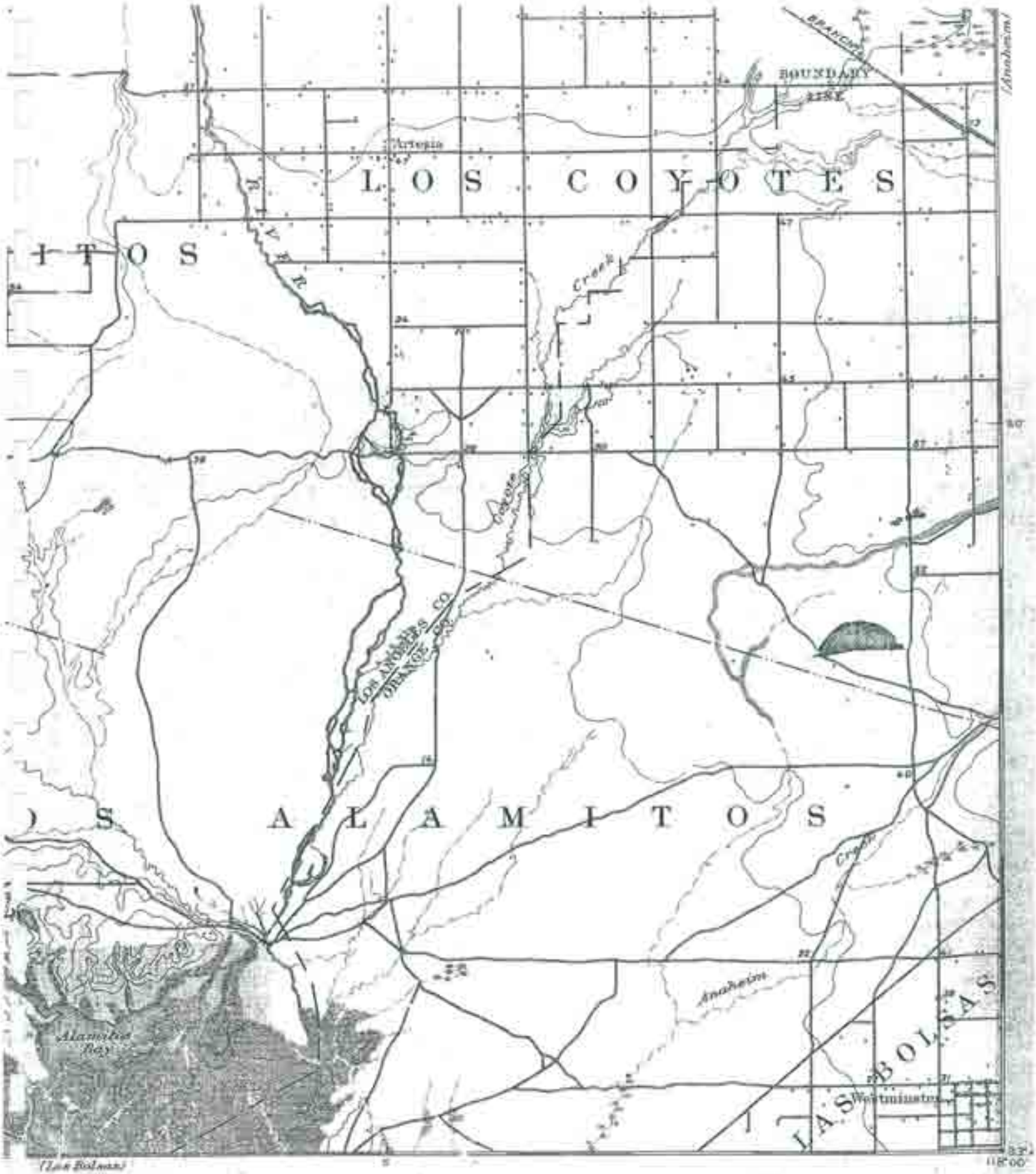
Polyconic projection. 1927 North American Datum

5890 ⟷ 5215

Los Alamitos 7½' USGS 1964

(photorevised 1972)

1000




Edition of Oct. 1896

Scale 1:62,500

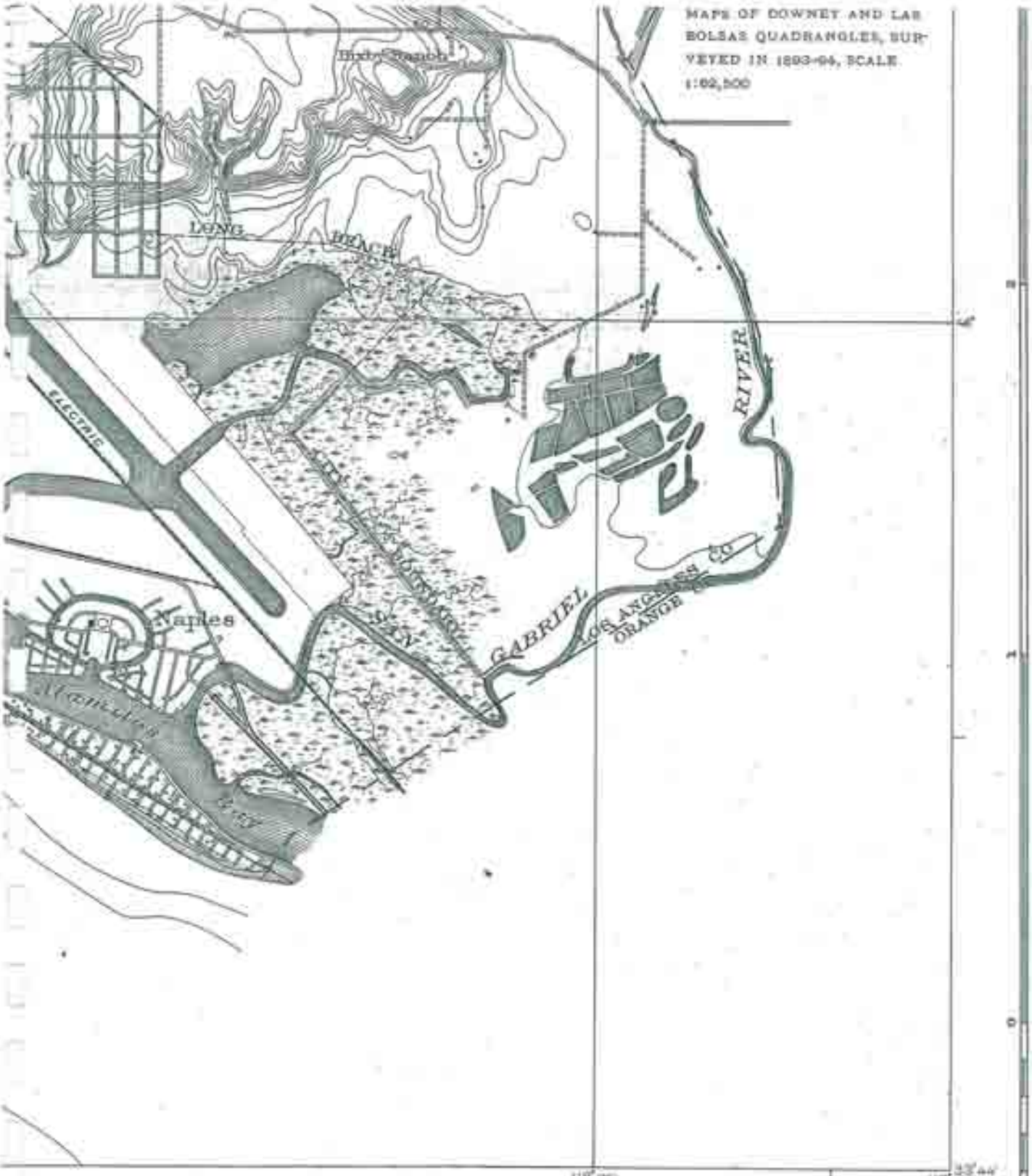
Miles

Kilometers

Contour Interval 25 feet

Datum is mean sea level

DOWNEY QUAD
USGS WASH DC 15' SE
1:62,500 Downey 1896



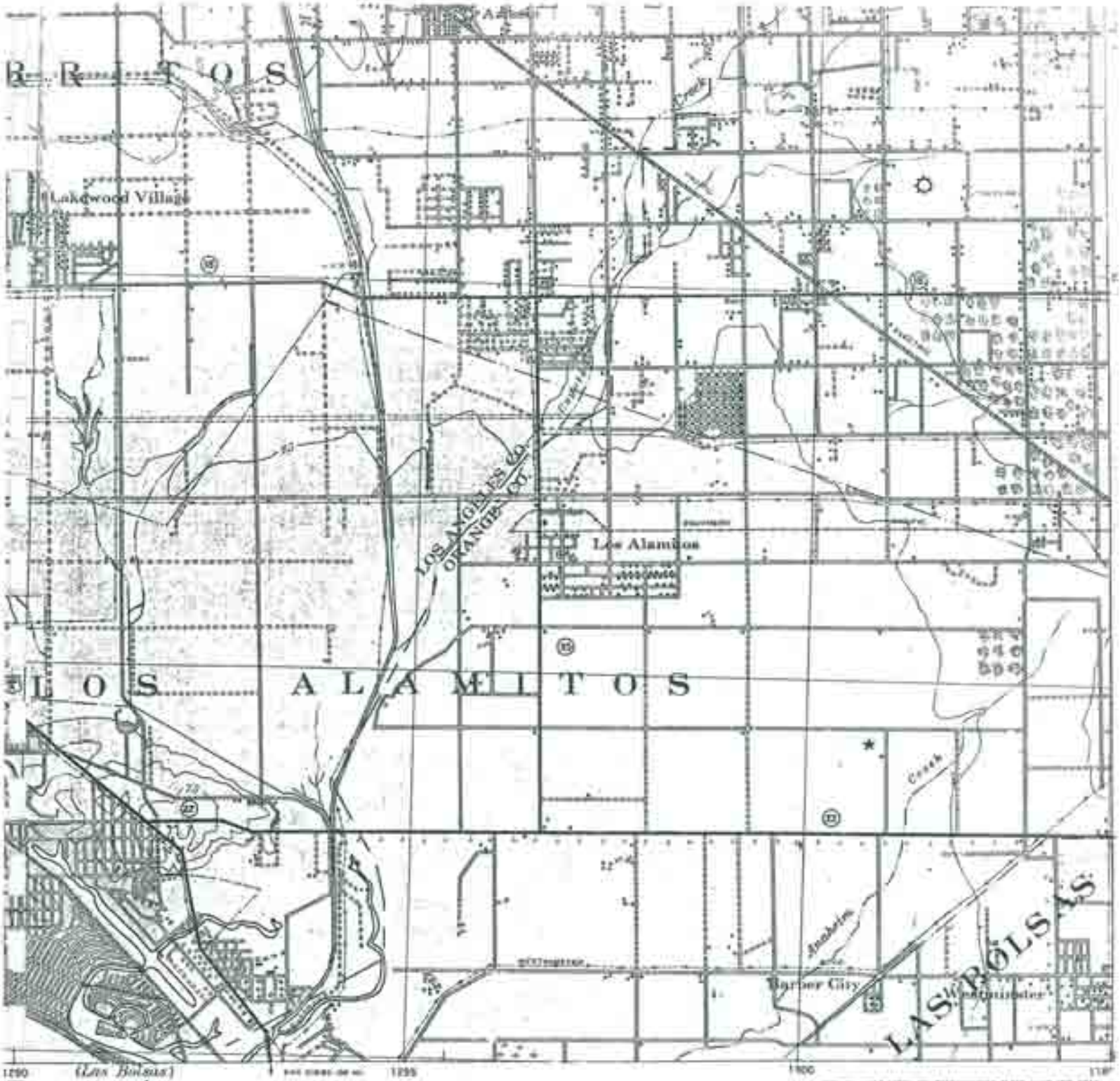

1 Mile
5000 Feet

Polyconic projection. North American datum 5000 yard grid based upon U.S. zone system. G
Shore line is the margin of water at mean high tide, 5 feet above mean lower low water at San Pedro

1:24000 SCALE
6' MAP SERIES
U.S.G.S. WASHINGTON, D.C.

LONG BEACH, CALIF.
Edition of 1925
reprinted 1932

ARCHAEOLOGICAL SURVEY
UNIVERSITY OF CALIFORNIA
LOS ANGELES 24, CALIFORNIA




USGS WASH DC

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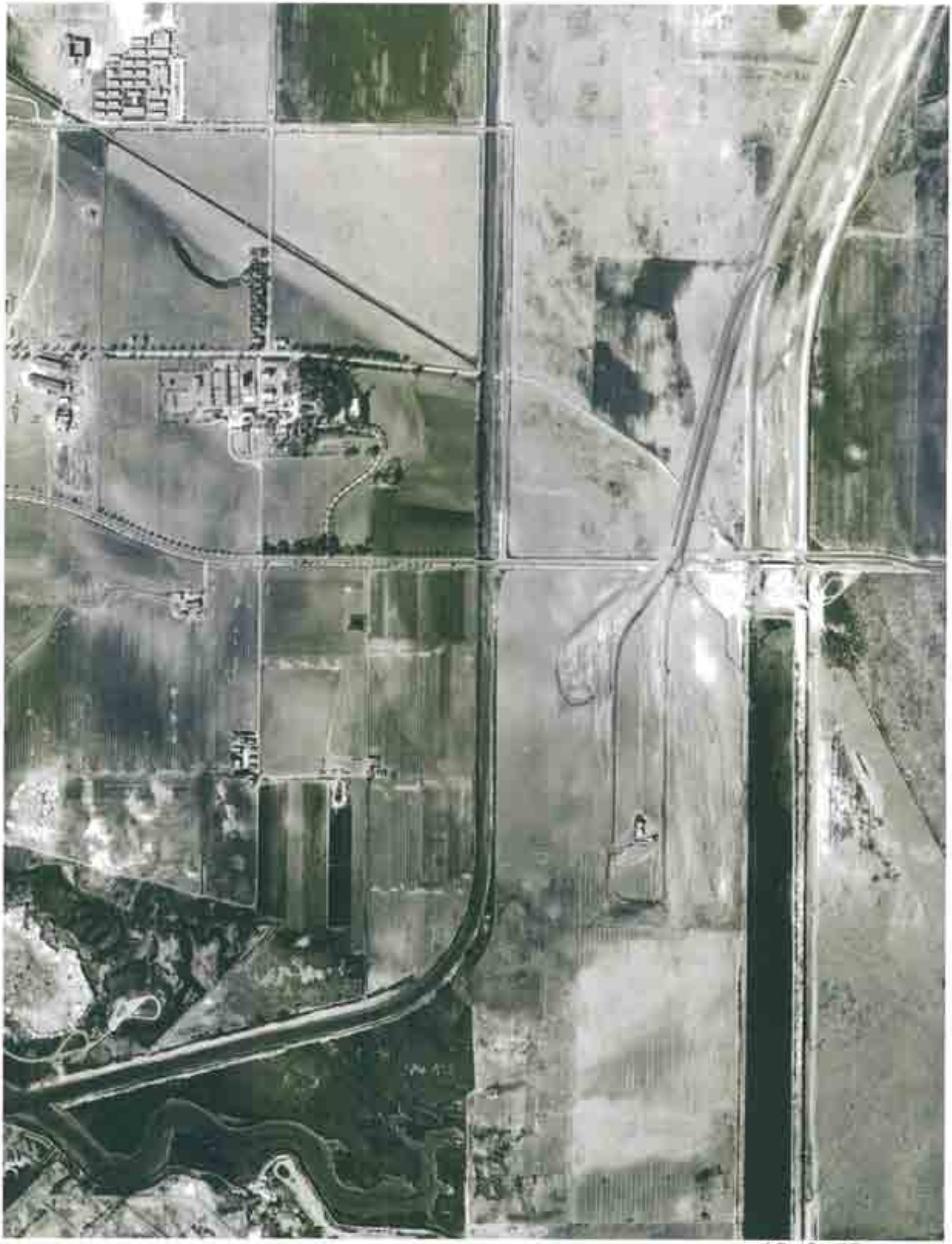
1942

15'



10-19-52

E-77-100

# APPENDIX B

# ALAMITOS ELECTRICAL GENERATING STATION FUEL OIL TANK FARM

## PRIMARY RECORD AND BUILDING, STRUCTURE, AND OBJECT RECORD FORM

State of California — The Resources Agency
**DEPARTMENT OF PARKS AND RECREATION**
# PRIMARY RECORD

Primary # P-19-186880
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

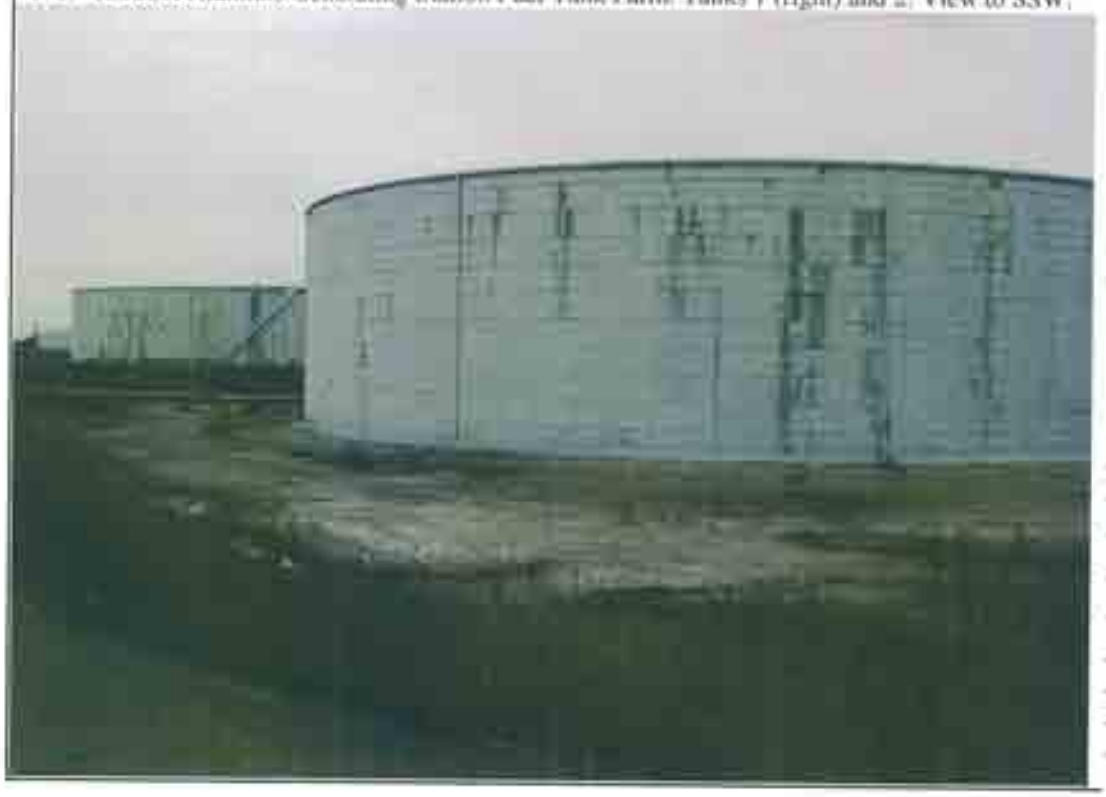
 *Resource Name or #: (Assigned by recorder) Alamitos Generating Station Fuel Oil Tank Farm

P1. Other Identifier:
*P2. Location: ☐ Not for Publication ☒ Unrestricted *a. County Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad *Los Alamitos* Date 1964 (1972) Township/Range T 5S R 12W; (not listed on map).
c. Address 400 North Studebaker Road City Long Beach Zip 90803
d. UTM: Four sets of UTMs representing corners of project area listed on Continuation Sheet.
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc.) The site is located at an elevation of 5 ft. along the east side of Studebaker Road at Loynes Drive, 0.2 mile (0.3 km) north of Westminster Ave. and 0.2 mile south of 7th St. (SR 22), on the west side of the San Gabriel River. Calif. State University, Long Beach is located 0.75 mile... (See Contin. Sheet)

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) The site is a large capacity petroleum storage yard, or tank farm, for the Southern California Edison Alamitos Electrical Generating Station. Currently, the fuel tank farm consists of 4 large capacity petroleum fuel oil tanks (Tanks No. 1-4), 2 smaller cutter/displacement ... (See Contin. Sheet)

*P3b. Resource Attributes: Petroleum Fuel Tanks (HP11).
*P4. Resources Present: ☐ Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P-19-186880: Alamitos Generating Station Fuel Tank Farm. Tanks 1 (right) and 2. View to SSW.



*P6. Date Constructed/Age and Sources: ☒ Historic ☐ Prehistoric

*P7. Owner and Address:
Southern California Edison Co.
690 No. Studebaker Road
Long Beach, CA 90803

*P8. Recorded by:
Ivan Strudwick
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, CA 92614-4731

*P9. Date recorded:
Feb. 20, 2004

*P10. Survey Type: (Describe)
Complete, Intensive Survey

* P11. Report Citation: Strudwick, 2004, Cultural Resource Survey of the Alamitos Generating Station Fuel Oil Tank Farm, Long Beach, Los Angeles County, California. LSA Associates, Inc.

Attachments: ☐None ☒Location Map ☒Site Map ☒Continuation Sheets ☒Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☒Photograph Record ☐Other (List): Location Map is Figure 1. Site Map is Aerial Photo, Figure 2.

State of California — The Resources Agency
**DEPARTMENT OF PARKS AND RECREATION**
**BUILDING, STRUCTURE, AND OBJECT RECORD**

Primary # P-19-186880
HRI#



**NRHP Status Code:** HP1 - Tank Farm and Fuel Oil Pumping Station
***Resource Name or #:** (Assigned by recorder) Alamitos Generating Station Fuel Oil Tank Farm

**B1. Historic Name:** Alamitos Generating Station Tank Farm
**B2. Common Name:** Oil Tanks
**B3. Original Use:** Fuel and Cutter/Displacement Oil Storage **B4. Present Use:** None (Empty)
***B5. Architectural Style:** Welded Metal Tanks
***B6. Construction History:** (Construction date, alterations, and date of alterations)
An ID plaque on the NW side of Tank No. 1 shows it to have been constructed in 1955 in Vernon, Calif., has a height of 40 ft, a diameter of 160 ft. and a capacity of 143,200 BBL (42 gallon barrels). An ID plaque on the NE side of Tank No. 2 is identical to the plaque on Tank No. 1. A very clear ID plaque on Tank No. 6 shows it was constructed in 1956, has a height of 40 ft, a diameter of 60 ft, and a capacity of 20,120 BBL. These three tanks and initial construction of the Southern Calif. Edison (SCE) Alamitos Electrical Generating Station 330 ft (100 m) north of the current project area. … (See Contin. Sheet)

***B7. Moved?** ☒ No ☐ Yes ☐ Unknown Date: N/A Original Location: The tanks are in their original location.
***B8. Related Features:**
This tank farm and fuel oil pumping station is related to the SCE Alamitos Electrical Generating Station 330 ft (100 m) to the north, for which it was constructed to supply No. 6 fuel oil.
**B9a. Architect:** Unknown **b. Builder:** Southern California Edison (SCE)
***B10. Significance: Theme** Electricity Generation **Area** Long Beach
**Period of Significance** mid-late 1950s era **Property Type** Tank Farm **Applicable Criteria** None
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
The tanks are constructed similarly: welded metal fixed cone-roof tanks with asbestos-lined pipes. Tank Nos. 1-4 are fiberglass insulated an covered with a horizontally overlaid facade of plastic liners. ID plaques indicate… (See Contin. Sheet)

**B11. Additional Resource Attributes:** (List attributes and codes) HP1 - Tank Farm and Fuel Oil Pumping Facility for the Alamitos Electrical Generating Station.
***B12. References:** (See Continuation Sheet)
**B13. Remarks:** This late 1950s- tank farm and fuel oil pumping station appears to possess integrity, although it is recommended as not important under the Calif. Environmental Quality Act (CEQA) and therefore not eligible for listing on the California Register (see B10 and Continuation Sheet page 3). No fewer than 18 other similar size petroleum tanks exist within 0.5 mile (0.8 km) of the current Alamitos Generating Station Fuel Tank Farm project area (Figure 1).

***B14. Evaluator:** Ivan Strudwick

***Date of Evaluation:** Feb. 20, 2004

(This space reserved for official comments.)

USGS Map (*Los Alamitos* 1964) of Project Area

***Required Information**

***P2d. UTM:**

| | mE | mN |
|---|---|---|
| NW corner: | 397955 | 3736765 |
| NE corner: | 398235 | 3736745 |
| SE corner: | 398265 | 3736540 |
| SW corner: | 397955 | 3736540 |

***P2e. Other Locational Data:**
... (1.2 km) NW of the project area, and Landing Hill is located just over 1.0 mile (1.6 km) SE of the project area. The project area encompasses 17.8 acres and is located just inland of Alamitos Bay within what was once tidal mudflats.

***P3a. Description:**
... oil tanks (Tanks No. 5-6), a fuel oil pumping station with 2 natural gas-fired heaters designed to maintain oil flowability, and associated pipeline. A seventh tank, located east of the parcel, as well as the fuel pumping station, and Tank No. 5, will not be affected by the proposed project which includes demolition. The facility was originally constructed by Southern California Edison beginning in 1955 in order to pump and store No. 6 fuel oil burned by the Alamitos Electrical Power Generating Station, one of the principal suppliers of electricity to the Los Angeles Basin. Tank Nos. 1-6 are welded metal, fixed cone-roofed tanks with impervious gunite/asphalt-lined earthen berms capable of containing 110% of each tank's capacity. Tanks No. 1-4 are fiberglass insulated and covered with horizontally overlapping plastic, and pipelines leading to the tanks appear to be asbestos-lined on the exterior. What is known of tank size, capacity, and manufacture is included on the Building, Structure, and Object portion of this form.

***B6. Construction History:** (Construction date, alterations, and date of alterations)
... occurred in 1955 and early 1956. This information corresponds with aerial photographs showing that Tank Nos. 1, 2, 6, and the initial construction at the electrical generating facility existed July 14, 1956. Tank Nos. 3 and 4 do not contain ID plaques, however, another aerial photograph taken May 27, 1960 shows that they existed at the time of the photo. Tank Nos. 3 and 4 are significantly larger than Tanks 1 and 2. Tank Nos. 3 and 4 are the same size with a height of 40 ft, a diameter of 200 ft, and a capacity of 223,800 BBL.

***B10.** (Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
... that Tank Nos. 1 and 2 were constructed in Vernon, although a company name is not distinguishable. An ID plaque indicates that Tank No. 6 was constructed by General American Transportation Co. (GATEX). A real estate brochure of the project area (Cushman and Wakefield 2003) states that the tanks were manufactured by Chicago Bridge and Iron Co., so it is possible that Tank Nos. 3 and 4, which are larger than the other tanks, may have been manufactured by Chicago Bridge and Iron Co. Less than 50 years old, the tanks appear to have maintained their integrity, with the exception of warnings about the roof of Tank Nos. 1-4. A small sign, dated June 5, 1990, posted at the base of the staircase on Tank Nos. 1-4 warns that the structural integrity of the tank roofs is not good.

As the Alamitos Electrical Power Generating Facility is one of the principal suppliers of electricity to the Los Angeles Basin, this fuel tank farm was useful for many years. The generating facility was designed to be dual source-fired by either oil or natural gas. However, in the 1970s, with an increase in environmental awareness and implementation of CEQA, dual source-fired electrical generating plants were required to operate solely on natural gas. The Alamitos Generating Facility fuel oil tanks were no longer useful as designed, although they were maintained in case of a natural gas shortage. Additionally, there are 18 other similar sized oil tanks within 0.5 mil (0.8 km) of the project area, most of which are related to nearby electrical generating facilities. Because the tanks within the current project area are not distinctive in their design, are not associated with events of significance, and are not likely to yield important historic information, it is recommended that they are not important under CEQA and should not be listed on the California Register.

***B12. References:**

Cushman and Wakefield

2003 Large Capacity Petroleum Storage, Long Beach, California. David D. Mackenbach. Real Estate Brochure from Cushman & Wakefield, Global Real Estate Solutions.

Strudwick, Ivan H.

2004 Cultural Resource Survey of the Alamitos Generating Station Fuel Oil Tank Farm, Long Beach, Los Angeles County, California. Ms. On file, South Central Coastal Archaeological Information Center, California State University, Fullerton.

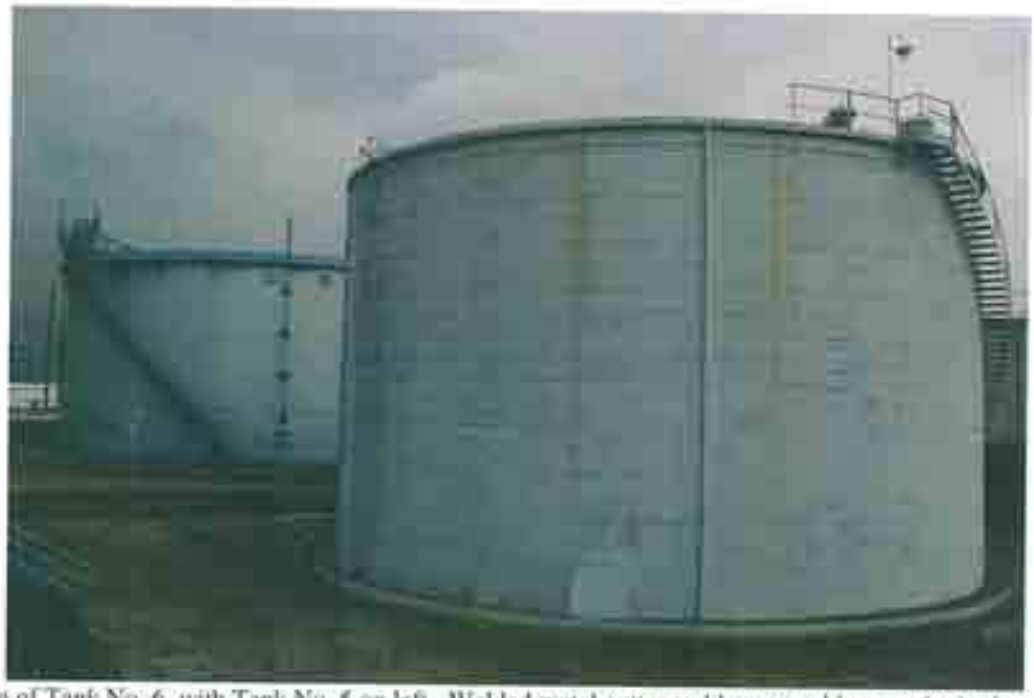
The following photos of the Alamitos Electrical Generating Fuel Oil Tank Farm on this and other Continuation Sheets are provided to document the tank farm.

Close-up of Tank No. 1 showing horizontal overlapping plastic façade, open oil tank cover on lower right hand side of tank, welded metal gutter and gravel pad around base, and earthen berm to each side of the tank creating retention basin. Portion of Tank No. 2 visible on right. View to SE.

Close-up of Tank Nos. 1 and 2. Note cement blocking under asbestos-lined pipe leading to Tank No. 1 and staircase leading up to the top of Tank No. 2. Note also earthen berm between tanks. View to SSW.

Base of Tank No. 2 detailing horizontal plastic façade, welded metal gutter, and gravel pad on which tank sits. Southern California Edison electrical power generating station in background. View to No.

Supply pipelines in middle of project area with earthen containment berm between pipes and tanks. In background from left to right, Tank Nos. 5, 6, 3, and left edge of Tank No. 4. View to NNE.



Close-up of Tank No. 6, with Tank No. 5 on left. Welded metal gutter and low gravel base under both tanks. Staircase on lower left leads over earthen spill-containment berm. View to NE.

ID plaque on east side of base of Tank No. 6 showing that it was manufactured by General American Transportation Co in 1956. Dimensions: 40 ft height, 60 ft diameter, capacity of 20,120 42 gallon barrels. View to WNW.

ID plaque on plate cover on NW side of Tank No. 1. Difficult to read due to age and having been painted. Date of 1955 visible in upper right corner. View to SE.

West side of Tank No. 4 with part of plastic façade removed showing fiberglass insulation. Note gravel pad on which tank is situated. View to NNE.

Fuel oil pumping station portion of project area. Natural gas fired heater on right. Tank No. 1 (on right) and northern edge of Tank No. 2 in background. View to SW.

LSA

FIGURE 1

0 1000 2000

SOURCE: USGS 7.5' Quads - Seal Beach & Los Alamitos, Ca.

*Alamitos Electrical Generating Station Fuel Oil Tank Farm*

Project Location

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LSA

PROJECT AREA

1. FUEL TANK

FIGURE 2

0 100 200 FEET

0 30.5 61.0 METERS

SOURCE: City of Long Beach, Public Works

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*Home Depot East Long Beach*

Recent Aerial Photo Showing the Alamitos Electrical Generating Station Fuel Oil Tank Farm

# PHOTOGRAPHIC RECORD

**CALIFORNIA Department of Parks and Recreation**
**Office of Historic Preservation**

**Primary # P-19-186880**
**Trinomial/HRI#**



Property or Project Name/Temporary No.: Alamitos Generating Station Fuel Oil Tank Farm (Long Beach Home Depot CLB430)
Camera Format: Digital
Film Type and Speed: Digital Format
Negatives kept at: LSA Associates, Inc., 20 Executive Park, Suite 200, Irvine, CA 92614
Lens Size: ~28-70
Year: 2004
Roll #: CLB430 Roll 1

| Mo. | Day | Time | Exp./ Neg. | Subject/Description | View Toward |
|---|---|---|---|---|---|
| Feb | 20 | 9:26 | 1 | Tanks No. 1 and 2. Photo taken from center of North side of Tank Farm Project Area. | SSW |
| Feb | 20 | 9:28 | 2 | Close-up showing Numbers on Tanks 1 and 2. | SSW |
| Feb | 20 | 9:40 | 3 | Tanks No. 1 and 2 from northwest corner of Tank Farm Project Area. | SE |
| Feb | 20 | 9:41 | 4 | Close-up of Tank No. 1. | SE |
| Feb | 20 | 9:45 | 5 | Overlapping horizontal plastic tank facade cover on Tank No. 1. | N |
| Feb | 20 | 10:00 | 6 | Broken tank facade showing interior steel hull and fiberglass. Tank No. 1. | NNE |
| Feb | 20 | 10:01 | 7 | Broken tank facade showing interior steel hull and fiberglass. Tank No. 1. | NNE |
| Feb | 20 | 10:02 | 8 | Base of Tank No. 1 showing oil caught in welded metal gutter. | W |
| Feb | 20 | 10:03 | 9 | Side of Tank No. 1 showing stains | WNW |
| Feb | 20 | 10:15 | 10 | Tank No. 2. Entire tank from center of Project Area | SW |
| Feb | 20 | 10:16 | 11 | Base of Tank No. 2 showing gutter and gravel. Edison electrical generating station in background. | N |
| Feb | 20 | 10:20 | 12 | Panorama: Small Tanks No. 5 and 6, with Tank No. 3 in middle and edge of Tank No. 4 on right. | NNE |
| Feb | 20 | 10:20 | 13 | Panorama: Tanks No. 3 and 4 | NE |
| Feb | 20 | 10:20 | 14 | Panorama: Tank No. 4, and So. edge of Project Area. | ENE |
| Feb | 20 | 10:25 | 15 | South edge of Project Area looking toward Alamitos Bay | W |
| Feb | 20 | 10:28 | 16 | Jim Harrison pointing toward Burrowing Owl | N |
| Feb | 20 | 10:29 | 17 | 2 small tanks. Tanks No. 5 and 6 | NE |
| Feb | 20 | 10:34 | 18 | Burrowing Owl in cut vegetation along south edge of Project Area | S |
| Feb | 20 | 10:35 | 19 | Burrowing Owl in cut vegetation along south edge of Project Area | S |
| Feb | 20 | 10:45 | 20 | Vegetation where Burrowing Owl was observed | NE |
| Feb | 20 | 10:46 | 21 | Tank No. 6 with Tank No. 5 on left | NE |
| Feb | 20 | 10:46 | 22 | Tank No. 6 Entire Tank | WNW |
| Feb | 20 | 10:48 | 23 | Tank No. 6 ID plaque on East side of tank | WNW |
| Feb | 20 | 10:49 | 24 | Tank No. 6 ID plaque | WNW |
| Feb | 20 | 10:55 | 25 | Tank No. 1 ID plaque on NW side of tank | SE |
| Feb | 20 | 10:56 | 26 | Tank No. 1 ID plaque location | SE |
| Feb | 20 | 11:00 | 27 | Tank No. 2 Opening and cover containing ID plaque on NE side of tank | SW |
| Feb | 20 | 11:05 | 28 | Tank No. 4 Entire tank | E |
| Feb | 20 | 11:06 | 29 | Tank No. 4 Exposed panel showing fiberglass insulation | NNE |
| Feb | 20 | 11:09 | 30 | Tank No. 4 showing asphalt go-cart race track in tank basin | WSW |
| Feb | 20 | 11:15 | 31 | Tank No. 4 Jim Harrison in cut opening into tank on NNE side | S |

# PHOTOGRAPHIC RECORD

**CALIFORNIA Department of Parks and Recreation**
**Office of Historic Preservation**

**Primary #** P-19-186880
**Trinomial/HRI#**



Property or Project Name/Temporary No.: Alamitos Generating Station Fuel Oil/Tank Farm (Long Beach Home Depot CLB430)
Camera Format: Digital
Lens Size: ~28-70
Film Type and Speed: Digital Format
Year: 2004
Negatives kept at: LSA Associates, Inc., 20 Executive Park, Suite 200, Irvine, CA 92614
Roll #: CLB430 Roll 1 Page 2

| Mo. | Day | Time | Exp./ Neg. | Subject/Description | View Toward |
|---|---|---|---|---|---|
| Feb | 20 | 11:45 | 32 | Fuel oil pumping portion of Project Area with pipeline and natural gas-fired heater on right. | SW |
| Feb | 20 | 11:50 | 33 | Natural marine shell near drainage pipe north and outside of Project Area on rip-rap channel bank. | WSW |
| Feb | 20 | 11:51 | 34 | Close-up of natural marine shell on rip-rap channel bank north and outside of project area. | WSW |