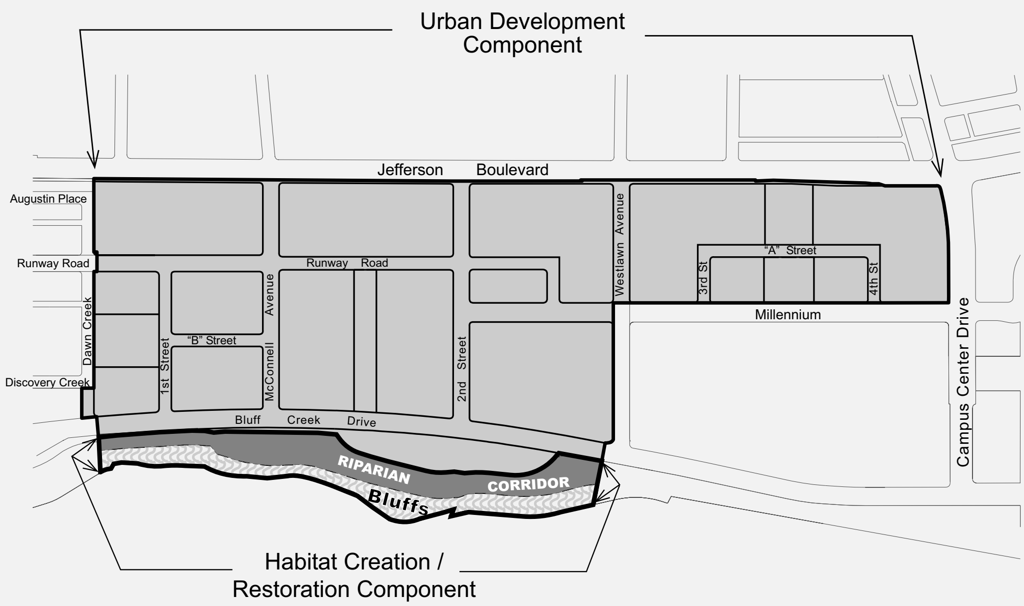
Draft Environmental Impact Report
(DEIR)
Village at Playa Vista



Volume IX
Technical Appendix F

F. Water Resources (Cont.)

City of Los Angeles/EIR No. ENV-2002-6129-EIR

2003

State Clearinghouse No. 2002111065

DRAFT

ENVIRONMENTAL IMPACT REPORT (EIR)

VILLAGE AT PLAYA VISTA

TECHNICAL APPENDICES

VOLUME IX

APPENDIX F:

WATER RESOURCES TECHNICAL APPENDIX

(CONTINUED)

City of Los Angeles
EIR No. ENV-2002-6129-EIR

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2003

TABLE OF CONTENTS

APPENDIX F-1 (CONTINUED): CAMP DRESSER & MCKEE, PSOMAS, AND GEOSYNTEC CONSULTANTS, WATER RESOURCES TECHNICAL REPORT FOR THE VILLAGE AT PLAYA VISTA, VOLUMES I–III, AUGUST 2003

WATER RESOURCES TECHNICAL REPORT

The Village at Playa Vista Project

Appendix B through G

August 2003

Volume III of III

Prepared for:

Playa Capital Company
12555 West Jefferson Boulevard, Suite 300
Los Angeles, California 90066

Prepared by:

CDM
Psomas
URS Greiner Woodward Clyde
GeoSyntec Consultants

CDM Project No. 10610-37605-RT.DEIR

Appendix B
Playa Vista Water Sediment Quality Existing Data Review Report (CDM)

Playa Vista
Water and Sediment Quality
Existing Data Review Report

February, 1999
Revised April, 2001
Revised July, 2003

Prepared for:

Playa Capital Company
12555 West Jefferson Boulevard, Suite 300
Los Angeles, California 90066

Prepared by:

CDM
18581 Teller Avenue, Suite 200
Irvine, California 92612

Contents

Appendices

List of Tables

List of Figures

Section 1
Introduction

The purpose of this technical report is to provide a concise summary and assessment of the historical water and sediment/soil quality sampling results at Playa Vista.

1.1 Playa Vista Project Site

The Playa Vista property is one of the few large unimproved parcels available for development within the coastal plain of Los Angeles. Located in the western part of Los Angeles County, it is bounded by Marina del Rey to the north, Culver City to the east, Playa del Rey and Westchester Bluffs to the south, and Vista del Mar and Playa del Rey to the west (Figure 1-1). The total tributary area of the adjacent Playa Vista First Phase Project and the Proposed Project, which includes the upstream areas that drain to the property, encompasses approximately 1,056 acres. The drainage area studied is located south of the Ballona Channel and encompasses approximately 1,555 acres. Of this, approximately 614 acres are upstream of the adjacent Playa Vista First Phase Project (not including the Freshwater Marsh) and Proposed Project sites; approximately 442 acres are associated with the adjacent Playa Vista First Phase Project and Proposed Project; and, approximately 499 acres (including the Freshwater Marsh) are downstream of the adjacent Playa Vista First Phase Project and the Proposed Project sites. The general drainage pattern in areas south of Ballona Channel is south-to-north, and east-to-west. The majority of runoff is discharged to Ballona Channel through the Freshwater Marsh outlet constructed as part of the adjacent Playa Vista First Phase Project and the Ballona Wetlands and existing flap-gated culverts within the wetlands, located approximately 1.25 miles west of the Proposed Project. Figure 1-2 shows the major drainage areas of the site.

In general, no natural dry-weather surface water sources, such as streams, lakes or springs, directly contribute to the surface water system in the Playa Vista project area. Surface water typically enters the site via direct precipitation, precipitation/runoff from adjacent areas, and point source discharges. The only continuous point source discharge within the adjacent Playa Vista First Phase Project and the Proposed Project was from the groundwater remediation treatment facility (GWTF) operating at the former Howard Hughes Plant Site, in the eastern portion of the adjacent Playa Vista First Phase Project and discharged treated water (under a RWQCB NPDES Permit) to the existing Centinela Creek. The GWTF was temporarily decommissioned with RWQCB approval during June and July 2000 due to grading and construction of the adjacent Playa Vista First Phase Project. Since September 2000, a new and more efficient groundwater treatment system, designed to treat a wider range of contaminants for remediation-related activities and for construction dewatering for construction of the adjacent Playa Vista First Phase Project. This facility is located on the north side of Building 2 within the adjacent Playa Vista First Phase Project, east of the Proposed Project site, and operates under NPDES Permit #CAG914001. Currently, one other temporary portable GWTF serves the adjacent Playa Vista First Phase Project. The facility is located within the western portion of the adjacent Playa Vista

First Phase Project site, east of Lincoln Boulevard, and south of Jefferson Boulevard, near Runway Road. This facility is presently in operation for treatment of construction dewatering and operates under NPDES Permit #CAG994002. As construction of the adjacent Playa Vista First Phase Project progresses, additional treatment facilities will be added as deemed necessary, and with the approval of the RWQCB, for specific construction dewatering and remediation efforts. A groundwater treatment program for the adjacent Playa Vista First Phase Project and the Proposed Project will be implemented, as necessary, in accordance with RWQCB requirements in conjunction with ongoing implementation of CAO No. 98-125. As an alternative to treatment on-site and discharge of construction dewatering under an existing NPDES permit, an Industrial Waste Discharge Permit (W-502105), has been obtained from the City of Los Angeles, Bureau of Sanitation, which allows construction dewatering water to be discharged to the sanitary sewer. The existing extraction wells will be abandoned or relocated in accordance with RWQCB requirements. The discharge of treated groundwater is one of the potential water sources for the Riparian Corridor and Freshwater Marsh.

Precipitation/runoff source discharges in the Playa Vista area consist of dry weather and stormwater runoff. A brief description of the existing (prior to development of the adjacent Playa Vista First Phase Project) drainage systems in each of the areas is discussed below.

1.1.1 Ballona Wetlands

As shown in Figure 1-2, the Ballona Wetlands is bounded by Ballona Channel to the north, Vista del Mar Street to the west, Playa del Rey Bluffs to the south, and Lincoln Boulevard and Freshwater Marsh to the east. The current land uses of this area include open space (primarily degraded saltwater wetlands areas) and roadways.

A significant portion of the project drainage areas south of Ballona Channel flows through the Ballona Wetlands from various man-made storm drains and through two earthen drainage channels, which discharge into Ballona Channel through flap gates and ultimately Santa Monica Bay.

Three of these drains, Centinela Creek, Jefferson Boulevard Storm Drain, and the Lincoln Boulevard Storm Drain, pass through the adjacent Playa Vista First Phase Project and the Proposed Project sites and are described in Section 1.1.3. Approximately 315 acres of off-site land surrounding the Ballona Wetlands also discharge stormwater into the North, South, and East portions of the Ballona Wetlands through small drains and natural channels.

1.1.2 Playa Vista First Phase Project and Proposed Project Sites

The adjacent Playa Vista First Phase Project and Proposed Project are bounded by Jefferson Boulevard to the north, Lincoln Boulevard to the west, and the Westchester Bluffs to the south. Prior to the development of the adjacent Playa Vista First Phase

Project and Proposed Project, the three major drain systems in this area are Jefferson Drain, Lincoln Drain, and the Centinela Creek.

- Centinela Creek collects stormwater from off-site land to the south and east of the adjacent Playa Vista First Phase Project and Proposed Project and the southern portion of Project sites and discharges into the southeast end of the Ballona Wetlands.
- The Jefferson Boulevard storm drain collects stormwater from off-site land north of Jefferson Boulevard and Playa Vista areas including the north portion of the adjacent Playa Vista First Phase Project and the northeast portion of the Ballona Wetlands and discharges to the southeast end of the Ballona Wetlands.
- The Lincoln Boulevard storm drain collects stormwater from off-site land of the Westchester Bluffs area south of the adjacent Playa Vista First Phase Project and Proposed Project and discharges into the southeast end of the Ballona Wetlands.

A new drain, the Central Storm Drain is currently being constructed as part of the adjacent Playa Vista First Phase Project. With an upstream terminus at the intersection of Artisans Way and Waterfront Drive in the eastern portion of the adjacent Playa Vista First Phase Project, the Central Storm Drain will drain east to west, extending along Waterfront Drive, Millennium Street, Runway Road, Pacific Promenade, and Playa Vista Drive and will discharge into the Freshwater Marsh. The entire tributary area of the Central Storm Drain is within the boundaries of the adjacent Playa Vista First Phase Project and the Proposed Project development.

1.2 Local Receiving Waters

Receiving waters in the vicinity of the existing Playa Vista site include the Freshwater Wetlands System (including the Riparian Corridor and the Freshwater Marsh), Ballona Wetlands, Ballona Channel, and Santa Monica Bay. A brief description of each of the receiving waters follows. More detailed information on the water quality of these receiving waters can be found by referring to the documents referenced herein.

1.2.1 Freshwater Wetlands System

The Freshwater Wetlands System is comprised of the Riparian Corridor and the Freshwater Marsh. The Freshwater Marsh and the east and west portions of the Riparian Corridor were approved as part of the adjacent Playa Vista First Phase Project and are currently under construction. Only the southern portion of the Freshwater Marsh currently remains to be constructed (approximately 8 acres). Completion of the Freshwater Marsh, as approved for the adjacent Playa Vista First Phase Project, is expected in 2004.

The Riparian Corridor was planned as a relocated and greatly enhanced replacement of the Centinela Ditch. The approximately 25-acre Riparian Corridor will drain east to west and collect water from the south part of the adjacent Playa Vista First Phase Project and the Proposed Project sites and from existing developments on the

Westchester Bluffs east of Lincoln Boulevard. It is planned to be a wide, open channel in a naturalized setting between the toe of the Westchester Bluffs and proposed Bluff Creek Drive.

The Freshwater Marsh is bounded by Jefferson Boulevard to the north, Ballona Wetlands to the west and south, and Lincoln Boulevard to the east. The Freshwater Marsh is divided from the Ballona Wetlands by a berm. The Freshwater Marsh was designed and subsequently permitted by the relevant governing agencies as a comprehensive system to enable the adjacent Playa Vista First Phase Project and the Proposed Project, at buildout, to 1) control the amount of freshwater flowing to the Ballona Wetlands and Ballona Channel; 2) substantially reduce the amount of surface water pollutant loads to the Ballona Wetlands; and, 3) achieve a no net increase in pollutant loads to the Ballona Channel and Santa Monica Bay.

Prior to construction of the Freshwater Marsh, 100% of untreated runoff flows from the 1,555-acre tributary watershed drained directly into the Ballona Wetlands and then into the Ballona Channel. The Freshwater Marsh has been designed to receive stormwater and dry weather runoff from the Jefferson Boulevard Storm Drain, the Central Storm Drain, the Riparian Corridor, and the Lincoln Drain South at pre-treatment catchment areas. It diverts freshwater flows from existing and new development away from the existing Ballona Wetlands salt marsh. During most runoff events, the Freshwater Marsh will discharge into Ballona Channel directly through flap-gated culverts; however, an overflow spillway is provided into the Ballona Wetlands to divert major storm flows (over 1-year storm levels). Under normal conditions, storm flows greater than a 1-year storm will flow over the overflow spillway into the existing Ballona Wetlands. The storm overflow drains through the East, South, and North Wetland portions of the Ballona Wetlands and outlets into Ballona Channel.

1.2.2 Ballona Wetlands

The Ballona Wetlands are located adjacent to Ballona Channel. A series of flap gates located near the western end of the saltwater wetlands allows flow from the Ballona Wetlands to enter Ballona Channel and ultimately Santa Monica Bay while preventing most Ballona Channel flows from entering the Ballona Wetlands.

The existing flap gates in Ballona Channel are located within the tidal prism. A tidal prism is created at the intersection of freshwater and saltwater near the mouth of most estuaries. Since the Ballona Channel empties into the Santa Monica Bay, a tidal prism is created by the tidal fluctuations of Santa Monica Bay. Saltwater from the Bay advances and retreats in the Ballona Channel creating two water column sources: Santa Monica Bay and Marina del Rey saltwater; and Ballona Channel freshwater. Typically, the denser saltwater intruding from the Bay will underlie the less dense freshwater flowing down Ballona Channel, which is composed primarily of urban runoff. The freshwater/saltwater interface is referred to as a saltwater wedge. The existence of the saltwater wedge was documented in the Ballona Channel Salinity Monitoring Program Report (CDM, 1996).

The Ballona Wetlands currently function incidentally as a stormwater runoff retention basin for the on/off-site land uses described previously. Due to minimal tidal circulation within the wetlands and an overload of stormwater runoff from adjacent areas, the majority of the wetlands are now degraded. The construction of the Playa Vista Freshwater Wetlands System (the Riparian Corridor and the Freshwater Marsh) is designed to decrease the input of urban runoff to the Ballona Wetlands.

1.2.3 Ballona Channel

The Ballona Channel discharges directly into Santa Monica Bay. It serves as the major outlet for a 78,000-acre drainage basin, which includes the highly urbanized West Central Los Angeles Metropolitan Area and a portion of the Santa Monica Mountains. The Proposed Project site represents less than one percent of the total watershed area of the Channel. The estimated annual flow in Ballona Channel during the 1996-1997 water year was 12.9 billion gallons. Dry weather flows in Ballona Channel typically range from 6 to 18 MGD (9 to 28 cfs), while storm flows can range from 100 to 6,390 MGD (155 to 9,890 cfs) (LACDPW, 1998).

The Ballona Channel is sampled five times a year for wet weather water quality by the Los Angeles County Department of Public Works (LACDPW).

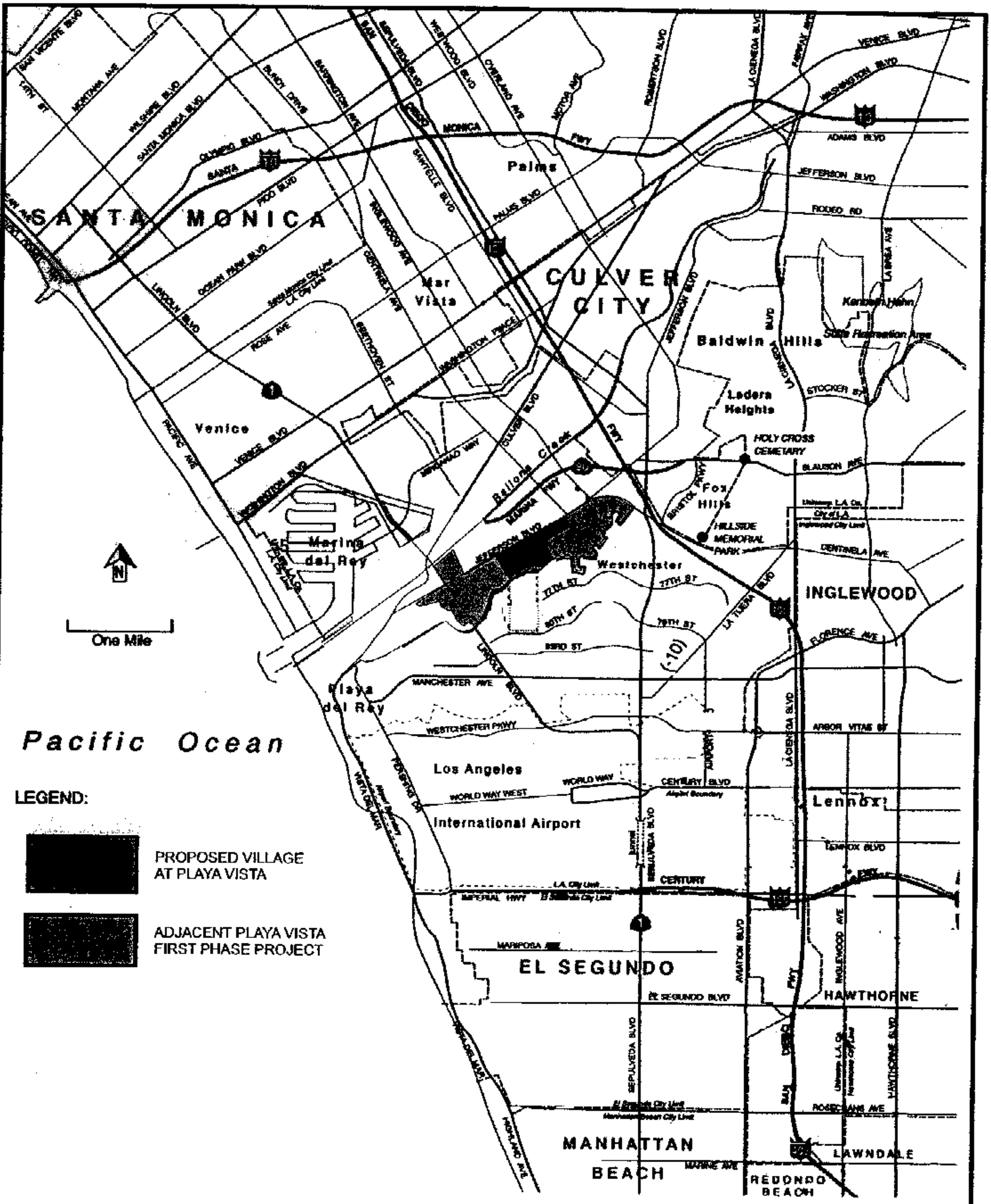
1.2.4 Santa Monica Bay

Santa Monica Bay is an open embayment with an estimated area of 266 square miles. It is bordered by Point Dume to the northwest, Palos Verdes Peninsula to the south, and the deep Santa Monica Basin to the west. Santa Monica Bay is characterized by substantial recreational, commercial, and industrial uses. Activities such as boating, swimming, fishing, power generation, runoff, and wastewater and waste discharge have drastically altered the natural environment of the Bay.

The waters of Santa Monica Bay have been assigned a Class C (impaired rating) by the Los Angeles Region Water Quality Control Board (LARWQCB). This rating is based on findings that the waters preclude, compromise, or do not support their designated use. The Santa Monica Bay's biological community is imbalanced, severely stressed, or known to contain toxicities in concentrations that are hazardous to human health. The contaminants of greatest concern in the Bay are chlorinated and polyaromatic hydrocarbons, organometalloids, viral pathogens, and to some extent, trace metals (copper and zinc). These contaminants can present risks to biota and human health (RWQCB, 1994).

Santa Monica Bay receives surface water drainage from storm drains, overland flow, and power plant and wastewater treatment plant outfalls. From the Playa Vista project area, the Bay receives direct urban runoff via the Ballona Channel and indirectly via Marina del Rey. In addition, pollutants are transported into the Santa Monica Bay due to daily tidal fluctuations over low-lying urban areas adjacent to the Bay.

In 1993, the UCLA Department of Civil and Environmental Engineering and Woodward Clyde performed an assessment of the storm drain sources of contaminants to Santa Monica Bay. Their study, summarized in four volumes, concluded that significant pollution enters the bay from runoff originating from the residential, industrial, and commercial areas surrounding Santa Monica Bay (UCLA, et al, 1993).



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Site Vicinity Map

Figure 1-1

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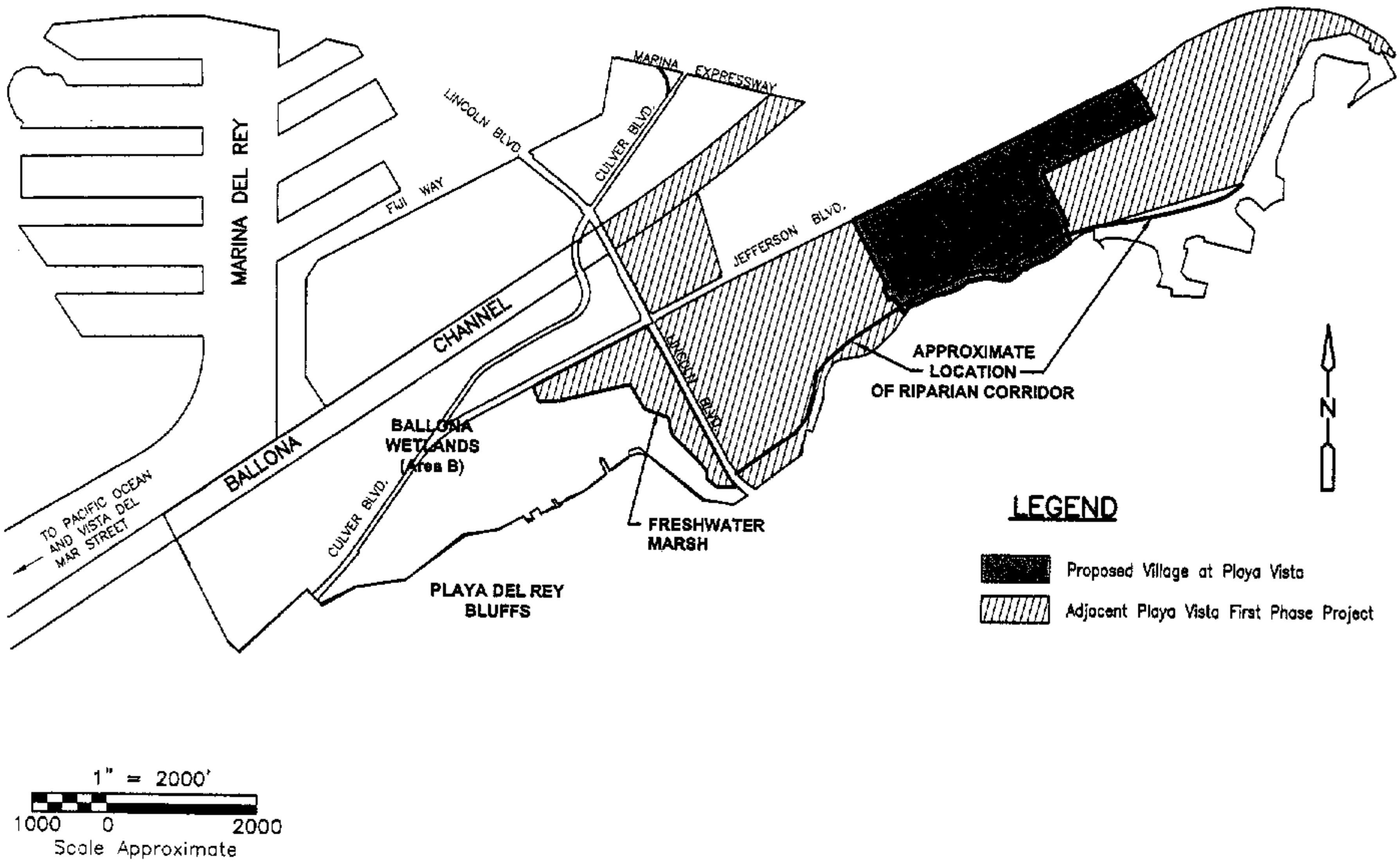


CDM

Playa Vista Delineations Map

Figure 1-2

Section 2
Water and Sediment Quality Criteria

The purpose of this section is to identify the relevant federal, state, and local environmental laws and regulations applicable to water and sediment quality at the Playa Vista site. Although no location-specific criteria for water and sediment quality exist, general standards for similar waterbodies may be applicable to the site and are discussed in the following sections.

2.1 Water

As discussed in Section 1, the surface waters in and around Playa Vista consist of wetlands (saltwater and freshwater), estuaries (Ballona Channel), and bays (Santa Monica Bay). The standards reviewed that are applicable or potentially relevant to these waterbodies are the Water Quality Control Plan (1994), the California Ocean Plan (1997), and the California Toxic Rule (2000).

2.1.1 Water Quality Control Plan - Los Angeles Region

The Water Quality Control Plan (1994), commonly referred to as the Basin Plan, is issued by the California Regional Water Quality Control Board (RWQCB) as the regulatory basis for preserving water quality and protecting the beneficial uses of all regional waters. The Basin Plan designates beneficial uses for surface waters and groundwater and sets numerical or narrative objectives for constituents for each water body.

Playa Vista lies within the Ballona Wetlands in the Ballona Creek Watershed (HSA 405.13). According to the Basin Plan, the beneficial uses for the Ballona Wetlands are: Water Contact Recreation (REC1); Non-contact Water Recreation (REC2); Estuarine Habitat (EST); Wildlife Habitat (WILD); Rare, Threatened or Endangered Species (RARE); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction and/or early Development (SPWN); Shellfish Harvesting (SHELL); and Wetland Habitat (WET). However, no waterbody-specific water quality objectives have been identified for the Ballona Wetlands or Ballona Creek Watershed.

2.1.2 California Ocean Plan

The California Ocean Plan (1990) was created by the State Water Resources Control Board (SWRCB) to establish water quality objectives for California's ocean waters and to provide a basis for regulation of wastes discharged to coastal waters by point and non-point source discharges. A 1997 amendment to the California Ocean Plan (COP) was approved. A second amendment called the 2001 COP was approved by the SWRCB in November 2000 and is currently under review by the EPA.

Both the SWRCB and the RWQCB are responsible for implementing and interpreting the California Ocean Plan. The COP describes beneficial uses and water quality objectives for ocean receiving waters - not for bays and estuaries such as those found adjacent to and directly downstream of Playa Vista. When a permit to discharge to the ocean is written, the water quality objectives of the receiving waters become the basis for establishing effluent criteria for the discharge.

Therefore, although the COP objectives do not apply directly to the waters on or discharged from Playa Vista, they do provide a general guideline of the desired water quality of the surface water in Santa Monica Bay.

2.1.3 California Toxic Rule

The California Toxic Rule (CTR) was promulgated by EPA in March of 2000. The CTR establishes acute and chronic surface water criteria for protection of freshwater and saltwater aquatic life, as well as criteria for human health consumption of water and organisms for all inland surface waters and enclosed bays and estuaries. The CTR criteria apply to waters of the State including bays and estuaries and waters of the State defined as inland (i.e. all surface waters of the State not defined as a bay, estuary or ocean) without a municipal use designation. CTR chronic criteria were compared to the dry weather sampling results and CTR acute criteria were compared to the wet weather results. The acute CTR criteria were used for comparison to wet-weather due to the infrequent nature of storm events in southern California and the fact that most storm events last for less than 4 days, which is the averaging period for which chronic CTR criteria apply.

2.2 Sediment

In the absence of any federal or state established sediment criteria, a brief literature search was executed to determine sediment guidance values that may be applicable and appropriate for the Playa Vista site. Four sources were consulted, including three technical papers and a New York State technical guidance.

Technical Guidance for Screening Contaminated Sediments

The Technical Guidance for Screening Contaminated Sediments (1993) was issued by the New York State Department of Environmental Conservation (NYSDEC) to establish sediment criteria for identifying contaminated sediments. The criteria designated by this document do not serve as cleanup goals but are to be used as screening criteria for the purpose of identifying areas of sediment contamination and assessing potential adverse impacts. The NYSDEC criteria require that the standards for organic compounds and pesticides be normalized to the organic carbon content of the site sediment. The NYSDEC metal standards for sediments defer to the guidance values recommended by Long and Morgan (1990), Long, et al. (1995), and Persaud, et al. (1992).

Ontario Ministry of the Environment (Persaud, et al.)

The Ontario Ministry of the Environment uses a screening level concentration approach adopted from Persaud, et al (1992). In this technical paper, field data from the Great Lakes was used to directly measure freshwater sediment-borne metals concentrations responsible for adverse ecological effects to benthic organisms. However, these guidance values do not account for other toxicity-mitigating factors that may affect the bioavailability of metals within the sediments such as sediment organic content or particle size distribution. In addition, these guidance values focus on the toxicity of metals because total metals concentration can be related directly to an observed, measurable ecological effect. Organic compounds are not covered by this set of guidance values.

Long and Morgan (1990)

The Long and Morgan (1990) technical paper provides guidance values for sediments according to the level of chemical effect (effects range low (ER-L) and effects range medium (ER-M)) on benthic organisms observed in field studies in both salt and freshwater. Like Persaud, et al. (1992), this study used field data to calibrate sediment-borne concentrations with adverse ecological effects to benthic animals. Long and Morgan (1990) provides guidance values for both select organic compounds and trace metals.

Long, et al. (1995)

The Long, et al. (1995) technical paper further refined the guidance values established by the Long and Morgan (1990) paper. In particular, the marine and estuarine data for the study was enhanced to create new guidance values. The NYSDEC has adopted the Long, et al. (1995) data for saltwater environments and retained the Long and Morgan (1990) guidance values combined with the Persaud et al. (1992) for freshwater environments.

National Oceanic & Atmospheric Administration Screening Quick Reference Tables

In 1999, the Coastal Protection and Restoration Division of the National Oceanic & Atmospheric Administration (NOAA) developed a set of reference tables to use for screening concentrations of inorganic and organic contaminants in various environmental media, including sediment. These tables are commonly referred to as the Screening Quick Reference Tables (SQuiRTs). The SQuiRTs include multiple screening values for sediment to reflect the range of possible adverse biological effects. Separate sediment screening values are provided for saltwater and freshwater.

After review of the technical guidance and papers, the NOAA SQuiRTs (1999) sediment guidance values appear to provide the most current sediment guidance values applicable to the saltwater environment at the Playa Vista site. Although none of these guidance values are established as California State guidance values, they are used in this report to provide a basis by which to compare the level of contamination in the sediments to possible adverse effect levels in benthic organisms.

Section 3
Water Quality Concerns

Surface water and sediment quality monitoring at Playa Vista, Ballona Channel, and Santa Monica Bay is an ongoing process. A number of organizations conduct periodic monitoring of the waterbodies. Over the years, certain water quality parameters have become the prime constituents of concern and key indicators of the water quality in these waterbodies. The historical assessment in Section 4 will focus on these parameters, discussed below.

3.1 Indicator Bacteria

Since the waterbodies are frequented by swimmers, surfers, and anglers, pathogens that may affect humans through direct contact or consumption of contaminated seafood are a concern. The most common indicator parameters used to gauge the suitability of the water for these recreational uses are fecal coliform and total coliform bacteria. Coliform counts in these waterbodies often increase following heavy rainfall events due to increases in soil and animal waste leading to beach closures. Sewage breaks or overflows may occasionally contaminate the storm drains and receiving waters, although these events occur infrequently.

The California Ocean Plan water quality objectives for water contact recreational uses is 200 MPN/100 mL for fecal coliform and 1,000 MPN/100 mL for total coliform, and for non-water contact recreational uses is 2,000 MPN/100 mL for fecal coliform. The RWQCB has prepared a Dry Weather Total Maximum Daily Load (TMDL) for bacteria at Santa Monica Bay Beaches, which is currently being reviewed by EPA and SWRCB. A source analysis of the elevated densities of bacterial indicators showed that at many of the Santa Monica Bay beaches dry weather urban runoff conveyed by storm drains and creeks (which includes Ballona Creek and Estuary) are the cause of water quality impairment in terms of the water contact recreation (REC-1) beneficial use. A coliform TMDL for the Ballona Creek Estuary, which may also apply to dry-weather flows, is planned for completion during the 2003/2004 fiscal year.

3.2 Nutrients

Nutrients, such as nitrogen and phosphorus, are required for some biota to survive in water systems. However, a delicate balance exists between the nutrients and the biotic organisms. An excess of nutrients can be as harmful to biota as a lack of nutrients. An excess of nutrients may cause algal blooms that deplete the dissolved oxygen content and foul the water; however, this problem has not been reported for Santa Monica Bay.

Fertilizers, animal waste, and municipal discharges can increase nitrogen concentrations in surface waters. Nitrogen forms include nitrate, nitrite (rare), organic nitrogen, and ammonia as nitrogen (ammonia-N). Total Kjedehl nitrogen (TKN) is an analytical technique that measures total organic nitrogen plus ammonia-N. Ammonia-N, which is highly toxic to aquatic life, can be nitrified by natural bacteria thereby depleting dissolved oxygen concentrations, or can combine with chloride to form chloramines, which are also toxic to aquatic life. Ammonia-N concentrations in the open ocean typically range from 0.002 to 0.009 mg/L. Phosphorus concentrations range from 0.02 to 0.03 mg/L in the open ocean.

The EPA has established nutrient water quality guidelines for various waterbodies based on ambient water quality conditions within defined ecoregions. The Proposed Project is located within Ecoregion 6 of Aggregate Ecoregion III, which is most prominently distinguished by its Mediterranean climate and associated vegetation. The guidelines are not enforceable laws or regulations; they are federal guidelines for establishing State water quality criteria for nutrients.

3.3 Dissolved Oxygen and Oxygen-Consuming Materials

Dissolved oxygen and oxygen-consuming materials (indicated by biochemical oxygen demand (BOD) and chemical oxygen demand (COD)) are important indicators of whether the surface water is suitable for aquatic life. Low or zero (anaerobic) dissolved oxygen conditions in extreme cases can kill aquatic life. Generally, a dissolved oxygen concentration of 5 mg/L or greater is acceptable for biota (Soule and Oguri, 1990).

BOD and COD are indicative of conditions that would deplete oxygen either biologically (BOD) or through chemical oxidation (COD). Although numerical standards for these constituents in freshwater and saltwater marshes are not available, BOD and COD can be used as general indicators of the dissolved oxygen levels in the waterbodies. Elevated BOD and COD values usually correlate with a drop in dissolved oxygen concentrations.

3.4 Heavy Metals

Heavy metals (such as arsenic, cadmium, copper, lead, mercury, nickel, selenium, silver, and zinc) are a concern in the subject waterbodies due to their toxicity to biota and to humans. These metals are commonly found in urban runoff and elevated concentrations of metals are typically found in urban storm drains following heavy rainfall events. Standards for heavy metals in water are provided by the CTR.

Heavy metals concentrations are also linked to the sediment grain size. In low energy environments like a marina, heavy metals adsorb to fine sediment particles and settle out. In high energy environments like the ocean, these particles with the adsorbed metals remain suspended in the water. Standards for heavy metals in sediments are provided by the NOAA SQuiRTs (1999).

3.5 Pesticides and PCBs

Pesticides and PCBs are contaminants that can be found in runoff from agricultural land uses and in municipal wastewater discharges (Young and Heeson, 1975-WCC, 1990). Although no farmLand currently exists within the project area, the areas surrounding the subject waterbodies have been used for farming in the past. Pesticides and PCBs are persistent in soil and sediments and do not degrade readily. They can also accumulate in aquatic organisms and sediments and pose a hazard to marine animals and plants. In the past, PCBs and DDT have been reported in benthic organism and demersal fish in the Santa Monica Bay near Palos Verdes. Therefore, possible contamination of these compounds in the subject waterbodies is a water quality concern. Standards for pesticides and PCBs in water and sediment are provided by the CTR and NOAA SQuiRTs (1999).

3.6 Tributyltin

Tributyltin (TBT) is found in a biocide often used in marine vessel antifouling paints, fungicides, wood preservatives, transformer oils, and PCBs. Its presence in the subject waterbodies is likely due to the boating activity in Marina del Rey. Although TBT has been restricted to large vessels by the California legislature, TBT is still available commercially. TBT can be bioaccumulated and bioconcentrated in several marine organisms including oysters, snails, mussels, and salmon. TBT toxicity can lead to reduced growth, thinness of meat and shells in shellfish, and reduced reproduction (SWRCB, 1988) and TBT is toxic to biota at concentrations in the parts per trillion range (ppt). TBT is not harmful to humans until it reaches the parts per million (ppm) range. The COP objectives for TBT in saltwater is 1.4 ppt. Sources did not indicate a TBT criteria for sediment.

3.7 Oil and Grease and Petroleum Hydrocarbons

Oil and grease are not water soluble and typically result in a film on top of surface waters. Although these compounds are mostly a nuisance contaminant to humans at low concentrations, oil and grease can coat birds and aquatic organisms leading to their death. Urban runoff commonly contains low concentrations of petroleum products resulting from runoff from roadways and paved surfaces. Oil and grease can also be released into the subject waterbodies by boats in the marina and Santa Monica Bay. No numerical standards were found for oil and grease; however, its presence in waterbodies is considered to be detrimental to biota.

3.8 Trash

Section 303(d) of the CWA requires identification and listing of water-quality limited or "impaired" waterbodies where water quality standards and/or receiving water beneficial uses are not met. Once a waterbody is listed as "impaired," total maximum daily loads (TMDLs) must be established for the pollutants or flows causing the impairment (33 U.S.C. §1313(d)(c)). Both the SWRCB and the EPA have approved a

Trash TMDL for the Ballona Creek Watershed, where the Proposed Project is located.[1] Although Ballona Creek is also listed as being impaired for other pollutants, TMDLs have not yet been established for these pollutants.

A "pollution budget" or pollutant load allocation must be established for point and non-point sources that contribute to the water quality impairment. Once a pollution budget has been set, which for the Ballona Creek Watershed is zero trash discharged by the twelfth year, load allocations for point sources are implemented through NPDES permits for individual dischargers. It is anticipated that implementation of, and compliance with, the TMDL requirements will be administered through the County's and City's municipal stormwater NPDES Permit program.

Although trash is a recognized water quality concern for the waters in the vicinity of Playa Vista, it is not a regularly measured constituent.

It is anticipated that implementation of, and compliance with, the Trash TMDL requirements will be administered through the MS4 Permit programs, as well as individual NPDES permits and general industrial stormwater permits (including construction site permits administered by the RWQCB).

[1] *The Trash TMDL for the Ballona Creek Watershed is currently under legal challenge by both the City and County of Los Angeles. Two lawsuits were filled in the Los Angeles County Superior Court in 2002, one on behalf of the City of Los Angeles, Bureau of Sanitation (Case No. BC 270452 – filed March 21, 2002), and one on behalf of the County of Los Angeles and the Los Angeles County Flood Control District (Case No. BC 279597 – filed August 13, 2002). Both lawsuits have been transferred out of Los Angeles County Superior Court. The City of Los Angeles, Bureau of Sanitation lawsuit has been transferred to Ventura County Superior Court and the County of Los Angeles and the Los Angeles County Flood Control District lawsuit is now in San Diego County Superior Court.*

Section 4
Sampling Results

Monitoring data from several sources were compiled for this review and assessment of surface water and sediment quality in the vicinity of the Playa Vista site. This section summarizes the data and provides a brief assessment of the constituents of particular interest.

4.1 Data Sources

The data included in this report was obtained from the following sources:

- Dry Weather Sampling Results Report (WCC, 1990)
- Final Technical Appendix to the Playa Vista Master Plan EIR (WCC, 1990)
- Comparison to the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina del Rey Entrance Channel (Chambers Group Environmental, 1993)
- Results of Chemical and Physical Testing of Sediments from Marina del Rey South Entrance (ABT, 1995)
- Ballona Creek Salinity Monitoring and Water Quality Sampling Results (CDM, 1996)
- Ballona Creek Water and Sediment Quality Monitoring Report 1995/1996 Wet Weather Season (CDM, 1996)
- Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report- Draft (CDM, 1998)
- Ballona Wetlands Surface Water and Sediment Sampling (GeoSyntec, April 2002)
- Ballona Wetlands and Freshwater Marsh Surface Water Sampling (CDM, April 2002)
- Ballona Wetlands and Freshwater Marsh Surface Water Sampling (CDM, June 2002)
- Ballona Wetlands and Freshwater Marsh Surface Water Sampling (CDM, April 2003)

Sampling techniques, sampling conditions, sampling locations, and media sampled varied between reports. In order to insure that data was being grouped and averaged without compromising the integrity of the data or its source, data was divided into several different categories.

First, data were separated by media type and sampling condition into the following categories: freshwater-dry weather, freshwater-wet weather, saltwater-wet weather, saltwater-dry weather, sediment-drainage channels, sediment-freshwater, and sediment-saltwater. Due to the possible differences in sampling techniques, data obtained from each source was kept separate. In addition, since sampling locations were not the same for each sampling event, the sampling locations were grouped in major areas: Ballona Wetlands, Freshwater Marsh, Ballona Channel, and Santa Monica Bay. Figure 4-1 shows the sampling locations. An overview of the data collected is presented in Table 4-1. The raw data obtained from the separate reports are included in Appendix A.

Summary tables of the raw data are presented as Tables 4-2 through 4-18. Maximum, minimum, and mean concentrations of each data set are shown along with the CTR criteria, the COP objectives, the COP's Conservative Estimate for Chronic Toxicity, NOAA SQuiRTs (1999) sediment guidance values, as applicable. Only constituents that were detected above detection limits within each waterbody category are shown.

Due to the large number of tables presented to accompany the text, all tables have been placed together at the end of the section.

4.2 Sampling Results Prior to 1990

In 1990, WCC conducted sampling and prepared an evaluation of the Playa Vista sampling data collected to date, which became a Final Technical Appendix (FTA) to the Playa Vista Master Plan EIR. These results are summarized in Tables 4-2 through 4-7 and described below.

4.2.1 Dry Weather

Ballona Channel

Results for dry weather water quality samples from the Ballona Channel are summarized in Table 4-2. According to the FTA, sampling and prepared sampling results indicated the following constituent trends in the Ballona Channel saltwater samples.

- Peak levels of ammonia-N have increased from 0.029 to 0.247 mg/L in 1986 to 0.003 to 1.04 mg/L in 1988; however, ammonia-N was not detected in the Ballona Channel during the 1990 sampling. Phosphorus concentrations in the Ballona Channel during the 1990 sampling ranged from 0.03 to 0.16 mg/L.

- Of the heavy metals, only copper exceeded the CTR criteria. Arsenic, chromium, silver, and zinc were all below CTR criteria. Other metals were not detected above laboratory reporting limits.

- No VOCs, SVOCs, pesticides, or PCBs were detected above laboratory reporting limits during the 1990 sampling.

Ballona Wetlands

Results for dry weather water quality samples from the Ballona Wetlands are summarized in Table 4-3. Only one water sample from the Ballona Wetlands was collected by WCC in the 1990 sampling.

- Ammonia-N and total phosphorus concentrations in the Ballona Wetlands during the 1990 sampling were 2.2 mg/L and 1.6 mg/L, respectively. These concentrations are higher than those detected in the Ballona Channel.
- Of the heavy metals, copper and nickel exceeded the CTR criteria. Cadmium, chromium, and zinc were all below CTR criteria. Other metals were not detected above laboratory reporting limits.
- Acetone was the only VOC detected in the Ballona Wetlands during this sampling event.
- No SVOCs, pesticides, or PCBs were detected above laboratory reporting limits during the 1990 sampling.

Centinela Ditch

Results for dry weather water quality samples from the Centinela Ditch are summarized in Table 4-4. Only one water sample from Centinela Ditch was collected by WCC in the 1990 sampling.

- Ammonia-N was not detected. Total phosphorus concentration was 0.76 mg/L.
- Of the heavy metals, copper and lead exceeded the CTR criteria. Arsenic, cadmium, chromium, nickel, and zinc were all below CTR criteria. Other metals were not detected above laboratory reporting limits.
- No VOCs were detected above laboratory reporting limits during the 1990 sampling.

4.2.2 Wet Weather

WCC did not sample saltwater in wet weather during 1990.

4.2.3 Sediment

Ballona Channel

Results for sediment quality samples from the Ballona Channel are summarized in Table 4-5. Two sediment samples from the Ballona Channel were collected by WCC in the 1990 sampling.

- Oil and Grease concentrations ranged from 46 to 57 mg/L.
- No VOCs, pesticides, and PCBs were detected above laboratory reporting limits. Bis(2-ethylhexyl)phthalate was the only SVOC detected.

- Metal concentrations from the 1990 sampling in the Ballona Channel were within the range of previous sampling results. Arsenic and zinc were below CTR criteria. Other metals were not detected above laboratory reporting limits.

Ballona Wetlands

Results for sediment quality samples from the Ballona Wetlands are summarized in Table 4-6. One sediment sample from the Ballona Wetlands was collected by WCC in the 1990 sampling.

- Oil and Grease was detected at 2,100 mg/L.
- No VOCs, SVOCs, pesticides, and PCBs were detected above laboratory reporting limits.
- Only zinc exceeded CTR criteria. Arsenic, cadmium, chromium, copper, lead, nickel, and silver were below CTR criteria. Other metals were not detected above laboratory reporting limits.

Centinela Ditch

Results for sediment quality samples from the Centinela Ditch are summarized in Table 4-7. One sediment sample from the Centinela Ditch was collected by WCC in the 1990 sampling.

- Oil and Grease was detected at 89 mg/L.
- No VOCs, SVOCs, pesticides, and PCBs were detected above laboratory reporting limits.
- Arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc were below CTR criteria. Other metals were not detected above laboratory reporting limits.

4.3 Sampling Results Since 1991

Several sampling events in the vicinity of Playa Vista have occurred since 1991. These results are summarized in Tables 4-8 through 4-18 and are described below.

4.3.1 Dry Weather

Santa Monica Bay

Water in Santa Monica Bay was sampled during dry weather by ABCL and Chambers Group. As shown in Table 4-8, the samples were tested for metals, VOCs, pesticides and PCBs, indicator bacteria, and general parameters.

- Nutrients – One sample was analyzed for ammonia, phosphorus, and organic nitrogen. Ammonia and phosphorus were above the typical ocean range concentrations for these parameters but were not above COP objectives.

- Pesticides and PCBs - Pesticides and PCBs were not detected above laboratory detection limits.

- Heavy Metals - Zinc was detected at a concentration exceeding the COP conservative estimate for chronic toxicity. All other detected metals (iron, manganese, and nickel) were below surface water quality criteria or did not have criteria.

- Oil/Grease and Petroleum Hydrocarbons - Oil and grease was detected during the 1992 sampling at a concentrations of 8 mg/L, well below the COP 30-day average objectives of 25 mg/L. The samples were not analyzed for TPH and TRPH.

- Dissolved Oxygen and Oxygen-Consuming Material - Samples were analyzed for dissolved oxygen by ABCL in 1996 to 1997. DO concentrations averaged 7.78 mg/L, which is within the normal range for along the open coast, 6 to 8.5 mg/L. Chambers Group analyzed for IOD and COD with concentrations of 0 mg/L and 175 mg/L, respectively.

- Indicator Bacteria - Fecal and total coliform were analyzed for 346 samples by ABCL in 1996 to 1997. Concentrations detected ranged from 0 to 2,400 MPN/100 mL and 0 to 16,000 MPN/100 mL, respectively. These concentrations are above recommended objectives of 200 MPN/100 mL fecal coliform and 1,000 MPN/100 mL total coliform for recreational activities.

Ballona Channel

Saltwater in the Ballona Channel was sampled during dry weather by ABCL, CDM, and Chambers Group/Soule. As shown in Table 4-9, samples were analyzed for metals, VOCs, SVOCs, pesticides and PCBs, indicator bacteria, and general parameters.

- Nutrients - Samples were analyzed for ammonia, TKN, phosphorus, total inorganic nitrogen, organic nitrogen, nitrite, and nitrate. Ammonia concentrations were above the typical open ocean range of 0.002 to 0.009 mg/L. Nitrate and TKN concentrations were higher in 1996-1998 than they were in 1990. Although no criteria were found for phosphorus, phosphorus concentrations in the open ocean range from 0.02 to 0.03 mg/L. The observed average concentration was 0.17 mg/L, which is fairly consistent with existing data reported by Woodward Clyde in 1990.

- Pesticides and PCBs - Pesticides and PCBs in the saltwater reach of Ballona Channel were analyzed by Chambers/Soule and CDM in 1991 and 1996-1998, respectively. These compounds were not found above laboratory detection limits during these sampling events.

- Tributyltin - TBT in the saltwater portion of Ballona Channel was only analyzed in CDM samples in 1996. TBT was not detected above laboratory detection limit of 95 ppt.

- Heavy Metals - Dissolved copper, selenium, and zinc were detected at concentrations exceeding CTR criteria in the 1996-98 sampling. In general, heavy metals concentrations were higher during the more recent 1996-1998 sampling than the previous 1990 and 1991 sampling. Other detected metals in the sampling results after 1991 (boron, cadmium, chromium, iron, lead, manganese, and mercury) were below CTR criteria or did not have criteria.

- Oil/Grease and Petroleum Hydrocarbons - Samples were analyzed for oil and grease by Chambers Group/Soule and CDM. Oil and grease concentrations ranged from 0 to 57 mg/L in the Chambers Group/Soule samples. TPH and TRPH were not detected by CDM during the 1996-1998 sampling event.

- Dissolved Oxygen and Oxygen-Consuming Material - Samples were analyzed for dissolved oxygen only in 1996-1997 by ABCL. Dissolved oxygen concentrations ranged from 5.5 to 13.9 mg/L, which spans the normal range of 6 to 8.5 mg/L for along the open coast. BOD was analyzed in 1995-1996 by CDM and in 1996-1997 by ABCL with concentrations ranging from 0 to 12 mg/L and 0 to 15 mg/L, respectively. COD concentrations were a magnitude higher in 1996-1998 than in 1991.

- Indicator Bacteria - Indicator bacteria were analyzed by ABCL in 1996-1997 and CDM in 1998. Fecal coliform concentrations ranged from 0 to 1,300 MPN/100 mL, and 0 to 16,000 MPN/100 mL for total coliform concentrations.

Ballona Wetlands

Saltwater in drainage channels in the Ballona Wetlands was sampled during dry weather by CDM. As shown in Table 4-10, samples were tested for metals, VOCs, SVOCs, indicator bacteria, and general parameters.

- Nutrients - Nitrate/nitrate-N, phosphorus, and TKN concentrations were lower in 1998 than they were in 1990.

- Heavy Metals - Dissolved arsenic, copper, nickel, and selenium were detected at concentrations exceeding CTR criteria . Aluminum, antimony, barium, boron, cadmium, chromium, iron, lead, manganese, molybdenum, silver, thallium, and vanadium were also detected. Arsenic and selenium concentrations were higher during the more recent 1998 sampling than the previous 1990 sampling event.

- Pesticides and PCBs - Pesticides and PCBs compounds were not found above laboratory detection limits.

- Dissolved Oxygen and Oxygen-Consuming Material - Dissolved oxygen was not analyzed for any of the sampling events. However, BOD and COD were analyzed with concentrations averaging 76 mg/L and 675 mg/L, respectively.

- Indicator Bacteria - Samples from the Ballona Wetlands were analyzed for fecal and total coliform. Concentrations for these constituents averaged 0.33 and 2.17 MPN/100 mL, respectively.

Freshwater Marsh

Water in the Freshwater Marsh was sampled during dry weather by CDM. As shown in Table 4-11, samples were tested for metals, VOCs, SVOCs, indicator bacteria, and general parameters.

- Heavy Metals - Antimony, arsenic, cadmium, chromium, iron, lead, manganese, nickel, silver, and zinc were detected but not at concentrations exceeding CTR criteria.

- Pesticides and PCBs - Pesticides and PCBs compounds were not found above laboratory detection limits.

- Dissolved Oxygen and Oxygen-Consuming Material - Dissolved oxygen was not analyzed for any of the sampling events. However, BOD and COD were analyzed with concentrations averaging 3 mg/L and 34 mg/L, respectively.

- Indicator Bacteria - Samples from the Freshwater Marsh were analyzed for fecal and total coliform. Concentrations for these constituents averaged 6 and 20 MPN/100 mL, respectively.

4.3.2 Wet Weather

Santa Monica Bay

Water in the Santa Monica Bay was sampled during wet weather by ABCL in 1997. As shown in Table 4-12 samples were analyzed for BOD, DO, ammonia, and indicator bacteria.

- Nutrients - Ammonia concentrations were above the typical open ocean range of 0.002 to 0.009 mg/L.

- Dissolved Oxygen and Oxygen-Consuming Material - Samples were analyzed for dissolved oxygen and BOD by ABCL in 1997. Concentrations averaged 6.36 mg/L, within the normal range of 6 to 8.5 mg/L for along the open coast. BOD concentrations ranged from 2.2 to 3.4 mg/L.

- Indicator Bacteria - Fecal and total coliform were analyzed for 11 samples by ABCL in 1997. Concentrations detected ranged from 0 to 20 MPN/100 mL for both total and fecal coliform well below the recommended fecal coliform objectives of

200 MPN/100 mL and total coliform objectives of 1,000 MPN/100 mL for recreational activities.

Ballona Channel

Saltwater in the Ballona Channel tidal prism was sampled during wet weather by ABCL, CDM, and Chambers Group/Soule. As shown in Table 4-13, samples were tested for metals, VOCs, SVOCs, pesticides and PCBs, indicator bacteria, and general parameters.

- Nutrients - Samples were analyzed for ammonia, TKN, phosphorus, organic nitrogen, and nitrate. Ammonia concentrations were above the typical open ocean range of 0.002 to 0.009 mg/L. Water quality criteria did not exist for any of the other nutrients. Phosphorus concentrations were higher in the 1995-1996 sampling than they were in 1992, and both were above the typical open ocean range for this constituent.

- Pesticides and PCBs - Pesticides and PCBs in the saltwater section of Ballona Channel were analyzed by Chambers/Soule in 1992. These compounds were not detected above laboratory detection limits during this sampling event.

- Tributyltin - TBT in the freshwater of Ballona Channel was only analyzed in CDM samples in 1995-1996. The average TBT detection was 0.0045 ppt.

- Heavy Metals - Only dissolved copper and dissolved zinc were detected above the CTR criteria. All other detected metals (total copper, dissolved iron, dissolved manganese, total nickel, and total zinc) were below water quality criteria or did not have criteria.

- Oil/Grease and Petroleum Hydrocarbons - Samples were analyzed for oil and grease by Chambers Group/Soule and CDM. Concentrations were relatively similar for the two sampling events with concentrations ranging from 0 to 16 mg/L.

- Dissolved Oxygen and Oxygen-Consuming Material - Samples were analyzed for dissolved oxygen by ABCL in 1996 to 1997. Concentrations averaged 6.41 mg/L,within the normal range of 6 to 8.5 mg/L for along the open coast. BOD was analyzed by CDM and by ABCL with concentrations ranging from 15 to 183 mg/L and 3.2 to 8.7 mg/L, respectively. Immediate oxygen demand and COD were analyzed by Chambers Group with concentrations ranging from 0 to 1.2 mg/L and 105 to 170 mg/L, respectively.

- Indicator Bacteria - Fecal and total coliform were not detected above laboratory detection limits by ABCL in 1997.

Ballona Wetlands

Saltwater in the Ballona Wetlands was sampled during wet weather by GeoSyntec in 2000. As shown in Table 4-14, samples were tested for metals, VOCs, and general parameters.

- Heavy Metals - Only dissolved copper was detected above the CTR criteria. All other detected metals were below water quality criteria or did not have criteria.

4.3.3 Sediment

Santa Monica Bay

Sediment in Santa Monica Bay was sampled by Chambers Group/Soule in 1992, ABT in 1995, and ABCL in 1996-1997. As shown in Table 4-15, samples were analyzed for metals, VOCs, pesticides and PCBs, and general parameters.

- Nutrients - Only one sample from the 1992 sampling event was analyzed for organic nitrogen compared to the 11 samples collected in 1996. The reported concentrations for this constituent in 1992 was within the range of the 1996 samples.

- Pesticides and PCBs - p,p'- DDT was detected above PEL guidance values in 2 out of 17 samples. Other detected pesticides included chlordane, heptachlor epoxide, p,p-DDD, endrin aldehyde, alpha-chlordane, and gamma-chlordane.

- Tributyltin - TBT was detected in the ppb range during all three sampling events.

- Heavy Metals – Barium, cobalt, and lead were detected at least once at concentrations exceeding the PEL sediment guidance values. In general, heavy metals concentrations were higher in recent sampling compared to the 1992 sampling.

- Oil/Grease and Petroleum Hydrocarbons - Oil and grease analytical results were lower in the most recent sampling event compared to the 1992 sampling event. TRPH was only tested for by ABT at concentrations up to 874 ppm.

Ballona Channel

Sediment in the saltwater portion of Ballona Channel was sampled by ABCL, CDM, and Chambers Group/Soule. As shown in Table 4-16, samples were tested for metals, VOCs, SVOCs, pesticides and PCBs, and general parameters.

- Nutrients - Samples were analyzed for ammonia, TKN, total inorganic nitrogen, phosphorus, nitrite, and nitrate. Nitrogen exists only in the organic-nitrogen form. Sediment guidance values do not exist for any of these nutrients. Phosphorus concentrations were higher in the recent 1996-1998 sampling events by CDM than they were in the 1992 sampling.

- Pesticides and PCBs - Pesticides and PCBs were analyzed by Chambers/Soule in 1992, by ABCL in 1996-1997, and by CDM in 1996-1998 for select parameters. Detected pesticides included chlordane, p, p'-DDE, p,p-DDT, p,p-DDD, alpha-chlordane, gamma chlordane, and PCB-1254. Chlordane, p, p'-DDT and p,p'-DDD were detected above sediment guidance values in at least 3 samples.

- Tributyltin - TBT was detected in the ppb range in 1992 by Chambers Group/Soule and in 1996 to 1997 by ABCL, but was not detected by CDM in 1996.

- Heavy Metals -Lead, Manganese, and nickel were detected at concentrations exceeding the PEL sediment guidance values at least once, but were generally below the guidance values. Other detected metals were either below sediment guidance values or did not have sediment guidance values.

- Oil/Grease and Petroleum Hydrocarbons - Oil and grease analytical results indicate highly variable levels of these constituents ranging from 0 to 27,800 ppm. TPH-diesel and TRPH were detected during the most recent sampling at concentrations up to 2,300 ppm. TPH-gasoline was not detected above laboratory detection limits.

Ballona Wetlands

Sediment in the drainage channels of Areas B and D was sampled by CDM in 1998 and by GeoSyntec in 2000. As shown in Table 4-17, samples were tested for metals, VOCs, SVOCs, pesticides and PCBs, and general parameters.

- Nutrients - The 1998 sample was analyzed for nutrients including ammonia, TKN, total inorganic nitrogen, phosphorus, nitrite, and nitrate. Nitrogen was found entirely in the organic-nitrogen form. Sediment guidance values do not exist for any of these nutrients.

- Pesticides and PCBs - P,p'-DDT and chordane were detected during the 2000 sampling at levels above the PEL guidance values.

- Heavy Metals – Barium, lead, and zinc were detected at least once at concentrations exceeding PEL sediment guidance values, although the values were generally below the guidance values. In general, heavy metals concentrations in the 1998 sampling were within the same range as the 1990 sampling concentrations. Other detected metals were below sediment guidance values or did not have guidance values.

- Oil/Grease and Petroleum Hydrocarbons - Oil and grease results indicate that these constituents were lower in 1998 (62 ppm) than in 1990 (1,095 ppm mean). TRPH was detected during the more recent 1998 sampling at concentrations of 50 ppm. TPH-diesel and TPH-gasoline were not detected above laboratory detection limits.

4.3.4 Sediment/Soil

Ballona Wetlands

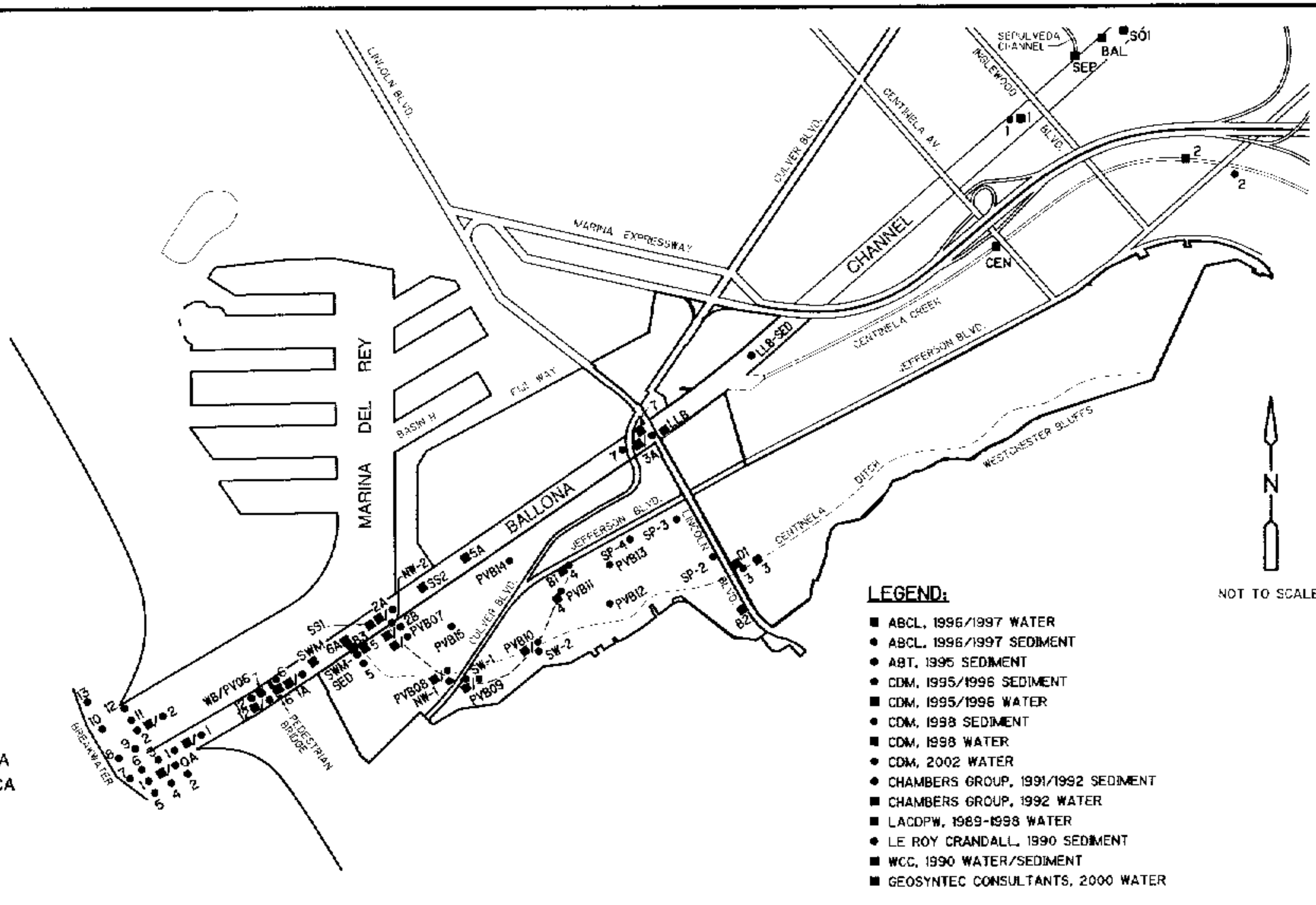
Soil/sediment in The Ballona Wetlands was sampled by CDM in 1998. These sampling locations represent locations that were dry during sampling but were located in areas that were likely wet during the wet weather season and received depositional material. As shown in Table 4-18, samples were tested for metals, VOCs, SVOCs, pesticides and PCBs, and general parameters. It should be noted that only 4 samples comprise this sample set.

- Nutrients - The samples were analyzed for nutrients including ammonia, TKN, total inorganic nitrogen, phosphorus, nitrite, and nitrate. Ammonia, nitrate, nitrite, and total inorganic nitrogen were not detected. Nitrogen exists only in the organic-nitrogen form. Sediment guidance values do not exist for any of these nutrients.

- Pesticides and PCBs - Only one sample was analyzed for pesticides and PCBs during the 1998 sampling event. No pesticides or PCBs were detected above laboratory detection limits.

- Heavy Metals - Two samples were tested for metals during the 1998 sampling event. None of the detected metals exceeded sediment guidance values or did not have guidance values.

- Oil/Grease and Petroleum Hydrocarbons - Only one sample was analyzed for oil and grease, TRPH, TPH-gasoline, and TPH diesel during the 1998 sampling event. Oil and grease, TRPH and TPH-diesel analytical results were 43 ppm, 40 ppm, and 6.8 ppm, respectively. TPH-gasoline was not detected above laboratory detection limits.



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WATER RESOURCES TECHNICAL REPORT

Playa Vista Existing Data - Approximate Water, Sediment, and Soil Sampling Locations

Figure 4-1

CDM

Table 4-18 Summary of Sediment/Upland Soil Quality Sampling – Ballona Wetlands – Saltwater, After 1991

Table 4-1

Summary of Playa Vista Existing Data

Sampling Location/Media Type Sampled	ABCL		ABT		CDM		Chambers Group/ Soule, et al.		WCC		GeoSyntec	
	Water Quality	*Sediment Quality*	*Water Quality*	*Sediment Quality*	*Water Quality*	*Sediment Quality*	*Water Quality*	*Sediment Quality*	*Water Quality*	*Sediment Quality*	*Water Quality*	*Sediment Quality*
Ballona Channel												
Saltwater - Dry	96(12), 97(10)	96(1)			96(6),98(2)	96(1),98(2)	92(6)	91(1), 92(4)	90(2)	90(2)		
Saltwater - Wet	97(2)				95(3),96(5)		92(5)					
Santa Monica Bay												
Saltwater - Dry	96(35),97(29)	96(2)		95(13)			92(1)	91(1), 92(1)				
Saltwater - Wet	97(6)											
Centinela Ditch												
Saltwater - Dry									90(1)	90(1)		
Ballona Wetlands												
Saltwater - Dry					98(1), 2002(6),2003(1)	98(4)***,98(5)			90(1)	90(1)	2000(2)	2000(3)
Saltwater - Wet											2000(2)	
Freshwater Marsh												
Freshwater - Dry					2002(5),2003(4)							

ABCL - Aquatic Bioassay Consulting Laboratory

ABT - Advanced Biological Testing

CDM - Camp Dresser & McKee

WCC - Woodward-Clyde Consultants

* - Numbers indicate year that sampling data is available.

** - Numbers in parentheses indicate number of samples available in sample set.

*** - These samples are actually classified as sediment/soil since they were not taken where water was present.

Table 4-2

Summary of Water Quality Sampling
Dry Weather Data - Ballona Channel - Saltwater
Prior to 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
General							
Oil and Grease	mg/l	—	2		ND	ND	ND
Hardness	mg/l	--	2	—	6100	6300	6200
Ammonia	mg/l	—	2	—	ND	ND	ND
Nitrate	mg/l	—	2	—	ND	0.07	0.0
TKN	mg/l	—	2	—	ND	0.8	0.4
Total Phosphorus	mg/l	—	2	—	0.03	0.16	0.10
Orthophosphorus	mg/l	—	2	—	0.02	0.13	0.08
Total Suspended Solids	mg/l	—	2	—	100	110	105
Volatile Organics							
Tetrachloroethene	µg/l	—	2	—	ND	ND	ND
Toluene	µg/l	200000	2	0	ND	ND	ND
Methylene Chloride	µg/l	1600	2	0	ND	ND	ND
1,2-Dichloroethane	µg/l	99	2	0	ND	ND	ND
Chloroform	µg/l	470	2	0	ND	ND	ND
1,1,1-Trichloroethane	µg/l	—	2	—	ND	ND	ND
Benzene	µg/l	71	2	0	ND	ND	ND
Ethylbenzene	µg/l	29000	2	0	ND	ND	ND
Chloromethane	µg/l	—	2	—	ND	ND	ND
Bromomethane	µg/l	—	2	—	ND	ND	ND
Dichlorodifluoromethane	µg/l	—	2	—	ND	ND	ND
Vinyl Chloride	µg/l	525	2	0	ND	ND	ND
Chloroethane	µg/l	—	2	—	ND	ND	ND
Trichlorofluoromenthane	µg/l	—	2	—	ND	ND	ND
1,1-Dichloroethene	µg/l	—	2	—	ND	ND	ND
1,1-Dichloroethane	µg/l	—	2	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/l	—	2	—	ND	ND	ND
Carbon Tetrachloride	µg/l	4.4	2	0	ND	ND	ND
Bromodichloromethane	µg/l	—	2	—	ND	ND	ND
1,2-Dichloropropane	µg/l	39	2	0	ND	ND	ND
trans-1,3-Dichloropropene	µg/l	—	2	—	ND	ND	ND
Trichloroethene	µg/l	—	2	—	ND	ND	ND
Dibromochloromethane	µg/l	—	2	-	ND	ND	ND
1,1,2-Trichloroethane	µg/l	42	2	0	ND	ND	ND
cis-1,3-Dichloropropene	µg/l	1700	2	0	ND	ND	ND
2-Chloroethylvinylether	µg/l	—	2	—	ND	ND	ND
Bromoform	µg/l	360	2	0	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	11	2	0	ND	ND	ND
Chlorobenzene	µg/l	21000	2	0	ND	ND	ND
1,2-Dichlorobenzene	µg/l	17000	2	0	ND	ND	ND
1,3-Dichlorobenzene	µg/l	2600	2	0	ND	ND	ND
1,4-Dichlorobenzene	µg/l	2600	2	0	ND	ND	ND
Total Xylenes	µg/l	—	2	—	ND	ND	ND
Acetone	µg/l	—	2	—	ND	11	6
Other VOCs	µg/l	—	2	—	ND	ND	ND
PAHs	µg/l	—	2	—	ND	ND	ND
Semi-Volatile Organics							
Naphthalene	µg/l	—	2	—	ND	ND	ND
Metals							
Dissolved Arsenic	µg/l	36	2	0	ND	2	1
Dissolved Cadmium	µg/l	9.3	2	0	ND	ND	ND
Dissolved Chromium*	µg/l	50	2	0	8	10	9
Dissolved Copper	µg/l	3.1	2	2	4	4	4
Dissolved Lead	µg/l	8.1	2	0	ND	ND	ND
Dissolved Mercury	µg/l	—	2	—	ND	ND	ND
Dissolved Nickel	µg/l	8.2	2	0	ND	ND	ND
Dissolved Selenium	µg/l	71	2	0	ND	ND	ND
Dissolved Silver	µg/l	—	2	—	ND	1.7	0.9
Dissolved Zinc	µg/l	81	2	0	ND	7	4

Table 4-2

Summary of Water Quality Sampling
Dry Weather Data - Ballona Channel - Saltwater
Prior to 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
Pesticides [b]							
beta-BHC	µg/l	0.046	2	0	ND	ND	ND
delta-BHC	µg/l	—	2	—	ND	ND	ND
P,P'-DDD	µg/l	0.00084	2	0	ND	ND	ND
P,P'-DDE	µg/l	0.00059	2	0	ND	ND	ND
PCB-1016	µg/l	0.03	2	0	ND	ND	ND
PCB-1221	µg/l	0.03	2	0	ND	ND	ND
PCB-1232	µg/l	0.03	2	0	ND	ND	ND
PCB-1242	µg/l	0.03	2	0	ND	ND	ND
PCB-1248	µg/l	0.03	2	0	ND	ND	ND
PCB-1260	µg/l	0.03	2	0	ND	ND	ND
PCB-1254	µg/l	0.03	2	0	ND	ND	ND
Aldrin	µg/l	0.00014	2	0	ND	ND	ND
alpha-BHC	µg/l	0.013	2	0	ND	ND	ND
Lindane	µg/l	0.063	2	0	ND	ND	ND
Chlordane	µg/l	0.004	2	0	ND	ND	ND
Dieldrin	µg/l	0.0019	2	0	ND	ND	ND
Endrin	µg/l	0.0023	2	0	ND	ND	ND
Toxaphene	µg/l	0.0002	2	0	ND	ND	ND
Heptachlor	µg/l	0.0036	2	0	ND	ND	ND
Heptachlor Epoxide	µg/l	0.0036	2	0	ND	ND	ND
P,P'-DDT	µg/l	0.001	2	0	ND	ND	ND

Notes:
— - No Criteria
NA - Not Analyzed
ND - Not Detected
1990 WCC = 1990, November. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] Criteria for hexavalent chromium was used for chromium
[b] CTR criteria are from human health organisms only criteria,except for PCBs,Chlordane, Toxaphene, Heptachlor, and P,P'-DDT.

Table 4-3

Summary of Water Quality Sampling
Dry Weather Data - Ballona Wetlands - Saltwater
Prior to 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
General							
Oil & Grease	µg/l	—	1	0	ND	ND	ND
Hardness	mg/l	—	1	—	140	140	140
Ammonia-N	mg/l	—	1	—	2.2	2.2	2.20
Nitrate	mg/l	—	1	—	0.24	0.24	0.24
TKN	mg/l	—	1	—	3.4	3.4	3.40
Total Phosphorus	mg/l	—	1	—	1.6	1.6	1.60
Orthophosphorus	mg/l	—	1	—	1.4	1.4	1.40
Total Suspended Solids	mg/l	—	1	—	16	16	16.00
VOCs[c]							
Acetone	µg/l	—	1	—	14	14	14.00
Methylene Chloride	µg/l	—	1	—	ND	ND	ND
Other VOCs	µg/l	—	1	—	ND	ND	ND
Semi-Volatile Organics[a]							
PAHs	µg/l	—	1	—	ND	ND	ND
Metals							
Dissolved Arsenic	µg/l	36	1	0	ND	ND	ND
Dissolved Cadmium	µg/l	9.3	1	0	0.1	0.1	0.10
Dissolved Chromium[b]	µg/l	50	1	0	1	1	1.00
Dissolved Copper	µg/l	3.1	1	1	5	5	5.00
Dissolved Lead	µg/l	8.1	1	0	ND	ND	ND
Dissolved Mercury	µg/l	—	1	—	ND	ND	ND
Dissolved Nickel	µg/l	8.2	1	1	9	9	9.00
Dissolved Selenium	µg/l	71	1	0	ND	ND	ND
Dissolved Silver	µg/l	—	1	—	ND	ND	ND
Dissolved Zinc	µg/l	81	1	0	54	54	54.00
Pesticides							
Pesticides and PCBs	µg/l	—	1	—	ND	ND	ND

Notes:
- — - No Criteria
- NA - Not Analyzed
- ND - Not Detected

1990 WCC = 1990, November. Woodward-Clyde Consultants. Final Technical Appendix to the Master EIR. Table 5-2.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a]CTR Criteria are from human health organisms only criteria.

[b]Hexavalent chromium criteria is used for chromium.

[c]CTR criteria is from the acute saltwater criteria.

Table 4-4

Summary of Water Quality Sampling
Dry Weather Data - Centinela Ditch - Saltwater
Prior to 1991

Parameters	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
General							
Total Hardness	mg/L	—	1	—	720	720	720
Total Suspended Solids [a]	mg/L	--	1	—	140	140	140
Nitrate	mg/L	—	1	—	0.23	0.23	0.23
Ammonia	mg/L	—	1	—	ND	ND	ND
TKN[a]	mg/L	—	1	—	1.5	1.5	1.50
Orthophosphorus[a]	mg/L	—	1	—	0.4	0.4	0.4
Total Phosphorus	mg/L	—	1	—	0.76	0.76	0.76
PAHs	µg/L	—	1	—	ND	ND	ND
Oil & Grease	mg/L	—	1	—	ND	ND	ND
Pesticides and PCBs	µg/L	—	1	—	ND	ND	ND
VOCs							
Acetone [b]	µg/L	—	1	—	ND	ND	ND
Methylene Chloride [c]	µg/L	1,600	1	0	ND	ND	ND
Other VOCs	µg/L	—	1	—	ND	ND	ND
Metals (Dissolved)							
Dissolved Arsenic	µg/L	36	1	0	7	7	7.0
Dissolved Cadmium	µg/L	9.3	1	0	2	2	2.00
Dissolved Chromium [d]	µg/L	50	1	0	9	9	9
Dissolved Copper	µg/L	3.1	1	1	5	5	5
Dissolved Lead	µg/L	8.1	1	1	19	19	19.0
Dissolved Mercury	µg/L	—	1	—	ND	ND	ND
Dissolved Nickel	µg/L	8.2	1	0	7	7	7
Dissolved Selenium	µg/L	71	1	0	ND	ND	ND
Dissolved Silver	µg/L	—	1	—	ND	ND	ND
Dissolved Zinc	µg/L	81	1	0	54	54	54

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

1990 WCC = 1990, November 14. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a] Results for Orthophosphate, Total Suspended Solids, and Total Kjeldahl Nitrogen from: 1990, July. Woodward-Clyde Consultants, Dry Weather Sampling Results Report. Table 4.

[b] Acetone was also detected in the trip blank for the samples with hits, so the results should be reviewed with caution

[c] CTR criteria are from human health organisms only criteria.

[d] The value for Hexavalent Chromium was used for chromium

* Indicates exceeds any of the listed criteria or guidance values.

Table 4-5

Summary of Sediment Quality Sampling Data
Ballona Channel - Saltwater
Prior to 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
General							
Oil and Grease	mg/kg	—	2	—	46	57	52
VOCs							
Chloromethane	mg/kg	—	2	—	ND	ND	ND
Bromomethane	µg/kg	—	2	—	ND	ND	ND
Vinyl Chloride	µg/kg	—	2	—	ND	ND	ND
Chloroethane	µg/kg	—	2	—	ND	ND	ND
Methylene Chloride	µg/kg	—	2	—	ND	ND	ND
Trichlorofluoromethane	µg/kg	—	2	—	ND	ND	ND
1,1-Dichloroethene	µg/kg	—	2	—	ND	ND	ND
1,1-Dichloroethane	µg/kg	—	2	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/kg	—	2	—	ND	ND	ND
Chloroform	µg/kg	—	2	—	ND	ND	ND
1,2-Dichloroethane	µg/kg	—	2	—	ND	ND	ND
1,1,1-Trichloroethane	µg/kg	—	2	—	ND	ND	ND
Carbon Tetrachloride	µg/kg	—	2	—	ND	ND	ND
Bromodichloromethane	µg/kg	—	2	—	ND	ND	ND
1,2-Dichloropropane	µg/kg	—	2	—	ND	ND	ND
trans-1,3-Dichloropropene	µg/kg	—	2	—	ND	ND	ND
[b] Trichloroethene	µg/kg	41	2	0	ND	ND	ND
Dibromochloromethane	µg/kg	—	2	—	ND	ND	ND
1,1,2-Trichloroethane	µg/kg	—	2	—	ND	ND	ND
cis-1,3-Dichloropropene	µg/kg	—	2	—	ND	ND	ND
2-Chloroethylvinyl ether	µg/kg	—	2	—	ND	ND	ND
Bromoform	µg/kg	—	2	—	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/kg	—	2	—	ND	ND	ND
[b] Tetrachloroethene	µg/kg	57	2	0	ND	ND	ND
Benzene	µg/kg	—	2	—	ND	ND	ND
Chlorobenzene	µg/kg	—	2	—	ND	ND	ND
1,2-Dichlorobenzene	µg/kg	—	2	—	ND	ND	ND
1,3-Dichlorobenzene	µg/kg	—	2	—	ND	ND	ND
1,4-Dichlorobenzene	µg/kg	—	2	—	ND	ND	ND
[b] Ethylbenzene	µg/kg	4	2	0	ND	ND	ND
Toluene	µg/kg	—	2	—	ND	ND	ND
[b] Total Xylenes	µg/kg	4	2	0	ND	ND	ND
SVOCs							
bis(2-Ethylhexyl)phthalate	µg/kg	—	2	—	ND	0.9	0.5
Metals							
Arsenic	mg/kg	41.6	2	0	1	1	1.0
Cadmium	mg/kg	4.21	2	0	ND	ND	ND
Copper	mg/kg	108.2	2	0	9	12	17
Lead	mg/kg	112.18	2	0	ND	ND	ND
Mercury	mg/kg	0.696	2	0	ND	ND	ND
Nickel	mg/kg	42.8	2	0	ND	ND	ND
[b] Selenium	mg/kg	1	2	0	ND	ND	ND
Silver	mg/kg	1.77	2	0	ND	ND	ND
Zinc	mg/kg	271	2	0	13	19	16

Table 4-5

Summary of Sediment Quality Sampling Data
Ballona Channel - Saltwater
Prior to 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
Pesticides and PCBs							
[b] Aldrin	µg/kg	9.5	2	0	ND	ND	ND
alpha-BHC	µg/kg	—	2	—	ND	ND	ND
beta-BHC	µg/kg	—	2	—	ND	ND	ND
delta-BHC	µg/kg	—	2	—	ND	ND	ND
Lindane	µg/kg	0.99	2	0	ND	ND	ND
Chlordane	µg/kg	4.76	2	0	ND	ND	ND
Dieldrin	µg/kg	4.3	2	0	ND	ND	ND
Endrin	µg/kg	—	2	—	ND	ND	ND
Toxaphene	µg/kg	—	2	—	ND	ND	ND
[b] Heptachlor	µg/kg	0.3	2	0	ND	ND	ND
Heptachlor Epoxide	µg/kg	—	2	—	ND	ND	ND
P,P'-DDT	µg/kg	4.77	2	0	ND	ND	ND
P,P'-DDD	µg/kg	7.81	2	0	ND	ND	ND
P,P'-DDE	µg/kg	374.17	2	0	ND	ND	ND
PCB-1016	µg/kg	188.79	2	0	ND	ND	ND
PCB-1221	µg/kg	188.79	2	0	ND	ND	ND
PCB-1232	µg/kg	188.79	2	0	ND	ND	ND
PCB-1242	µg/kg	188.79	2	0	ND	ND	ND
PCB-1248	µg/kg	188.79	2	0	ND	ND	ND
PCB-1254	µg/kg	188.79	2	0	ND	ND	ND
PCB-1260	µg/kg	188.79	2	0	ND	ND	ND

Notes:

-- - No Guidance Value
NA - Not Analyzed
ND - Not Detected
1990 WCC = 1990, November. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-7.
PEL - Probable Effects Level, level above which adverse effects are frequently expected
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

Table 4-6

Summary of Sediment Quality Sampling Data
Ballona Wetlands - Saltwater
Prior to 1991

Parameter	Units	NOAA SQuiHT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
General							
Oil and Grease	mg/kg	—	1	—	2100	2100	2100
VOCs							
Methylene chloride	µg/kg	—	1	—	ND	ND	ND
1,2-Dichloroethane	µg/kg	—	1	—	ND	ND	ND
Chloroform	µg/kg	—	1	—	ND	ND	ND
1,1,1-Trichloroethane	µg/kg	—	1	—	ND	ND	ND
Benzene	µg/kg	—	1	—	ND	ND	ND
Toluene	µg/kg	—	1	—	ND	ND	ND
[b] Ethylbenzene	µg/kg	4	1	0	ND	ND	ND
Carbon Disulfide	µg/kg	—	1	—	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/kg	—	1	—	ND	ND	ND
1,1,2-Trichloroethane	µg/kg	—	1	—	ND	ND	ND
1,1-Dichloroethane	µg/kg	—	1	—	ND	ND	ND
1,1-Dichloroethene	µg/kg	—	1	—	ND	ND	ND
1,2-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
1,2-Dichloropropane	µg/kg	—	1	—	ND	ND	ND
1,3-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
1,4-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
2-Chloroethylvinylether	µg/kg	—	1	—	ND	ND	ND
2-Hexanone	µg/kg	—	1	—	ND	ND	ND
Acetone	µg/kg		1	—	ND	ND	ND
Acrolein	µg/kg	—	1	—	ND	ND	ND
Acrylonitrile	µg/kg	—	1	—	ND	ND	ND
Bromodichloromethane	µg/kg	—	1	—	ND	ND	ND
Bromomethane	µg/kg	—	1	—	ND	ND	ND
Bromoform	µg/kg	—	1	—	ND	ND	ND
Chlorobenzene	µg/kg	—	1		ND	ND	ND
Carbon Tetrachloride	µg/kg	—	1	—	ND	ND	ND
Chloroethane	µg/kg	—	1	—	ND	ND	ND
Chloromethane	µg/kg	—	1	—	ND	ND	ND
Dibromochloromethane	µg/kg	—	1	—	ND	ND	ND
Freon-113	µg/kg	—	1	—	ND	ND	ND
Methyl Ethyl Ketone	µg/kg	—	1	—	ND	ND	ND
Methyl Isobutyl ketone	µg/kg	—	1	—	ND	ND	ND
Styrene	µg/kg	—	1	—	ND	ND	ND
[b] Trichloroethene	µg/kg	41	1	0	ND	ND	ND
Trichlorofluoromethane	µg/kg	—	1	—	ND	ND	ND
[b] Tetrachloroethene	µg/kg	57	1	0	ND	ND	ND
Vinyl Acetate	µg/kg	—	1	—	ND	ND	ND
Vinyl Chloride	µg/kg	—	1	—	ND	ND	ND
[b] Total Xylenes	µg/kg	4	1	0	ND	ND	ND
cis-1,2-Dichloroethene	µg/kg	—	1	—	ND	ND	ND
cis-1,3-Dichloropropene	µg/kg	—	1	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/kg	—	1	—	ND	ND	ND
trans-1,3-Dichloropropene	µg/kg	—	1	—	ND	ND	ND
SVOCs							
bis(2-Ethylhexyl)phthalate	µg/kg	—	1	—	ND	ND	ND
1,2,4-Trichlorobenzene	µg/kg	—	1	—	ND	ND	ND
[b] 1,2-Dichlorobenzene	µg/kg	13	1	0	ND	ND	ND
1,2-Diphenylhydrazine	µg/kg	—	1	—	ND	ND	ND
1,3-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
[b] 1,4-Dichlorobenzene	µg/kg	110	1	0	ND	ND	ND
2,4-Dinitrotoluene	µg/kg	—	1	—	ND	ND	ND
2,6-Dinitrotoluene	µg/kg	—	1	—	ND	ND	ND
2-Methylnaphthalene	µg/kg		1	—	ND	ND	ND

Table 4-6

Summary of Sediment Quality Sampling Data
Ballona Wetlands - Saltwater
Prior to 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs * 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
2-Nitroaniline	µg/kg	—	1	—	ND	ND	ND
3,3'-Dichlorobenzidine	µg/kg	—	1	—	ND	ND	ND
3-Nitroaniline	µg/kg	—	1	—	ND	ND	ND
4-Bromophenylphenylether	µg/kg	—	1	—	ND	ND	ND
4-Chloroaniline	µg/kg	—	1	—	ND	ND	ND
4-Nitroaniline	µg/kg	—	1	—	ND	ND	ND
Acenaphthene	µg/kg	88.9	1	0	ND	ND	ND
Acenaphthylene	µg/kg	127.87	1	0	ND	ND	ND
Aniline	µg/kg	—	1	0	ND	ND	ND
Anthracene	µg/kg	245	1	0	ND	ND	ND
Benzidine	µg/kg	—	1	—	ND	ND	ND
Benz(a)anthracene	µg/kg	692.53	1	0	ND	ND	ND
Benzo(a)pyrene	µg/kg	763.22	1	0	ND	ND	ND
[b] Benzo(b)fluoranthene	µg/kg	1800	1	0	ND	ND	ND
Benzo(g,h,i)perylene	µg/kg	670	1	0	ND	ND	ND
[b] Benzo(k)fluoranthene	µg/kg	1800	1	0	ND	ND	ND
[b] Butylbenzylphthalate	µg/kg	63	1	0	ND	ND	ND
Chrysene	µg/kg	845.98	1	0	ND	ND	ND
[b] Di-n-octylphthalate	µg/kg	61	1	0	ND	ND	ND
Dibenz(a,h)anthracene	µg/kg	134.61	1	0	ND	ND	ND
Dibenzofuran	µg/kg	—	1	—	ND	ND	ND
Dibutylphthalate	µg/kg	—	1	—	ND	ND	ND
[b] Diethylphthalate	µg/kg	6	1	0	ND	ND	ND
[b] Dimethylphthalate	µg/kg	6	1	0	ND	ND	ND
Fluoranthene	µg/kg	1493.54	1	0	ND	ND	ND
Fluorene	µg/kg	144.35	1	0	ND	ND	ND
[b] Hexachlorobenzene	µg/kg	6	1	0	ND	ND	ND
[b] Hexachlorobutadiene	µg/kg	1.3	1	0	ND	ND	ND
Hexachlorocyclopentadience	µg/kg	—	1	—	ND	ND	ND
[b] Hexachloroethane	µg/kg	73	1	0	ND	ND	ND
[b] Indeno(1,2,3-c,d)pyrene	µg/kg	600	1	0	ND	ND	ND
Isophorone	µg/kg	—	1	—	ND	ND	ND
N-Nitrosodimethylamine	µg/kg	—	1	—	ND	ND	ND
[b] N-Nitrosodiphenylamine	µg/kg	28	1	0	ND	ND	ND
N-Nitrosodi-n-propylamine	µg/kg	—	1	—	ND	ND	ND
Nitrobenzene	µg/kg	—	1	—	ND	ND	ND
Naphthalene	µg/kg	390.64	1	0	ND	ND	ND
Phenanthrene	µg/kg	543.53	1	0	ND	ND	ND
Pyrene	µg/kg	1397.6	1	0	ND	ND	ND
bis(2-Chloroethoxy)methane	µg/kg	—	1	—	ND	ND	ND
bis(2-Chloroethyl)ether	µg/kg	—	1	—	ND	ND	ND
bis(2-Chloroisopropyl)ether	µg/kg	—	1	—	ND	ND	ND
Metals							
Arsenic	mg/kg	41.6	1	0	2.5	2.5	2.5
Cadmium	mg/kg	4.21	1	0	1.8	1.8	1.8
Chromium	mg/kg	160.4	1	0	10	10	10.0
Copper	mg/kg	108.2	1	0	29.5	39	34.3
Lead	mg/kg	112.18	1	0	79	79	79
Mercury	mg/kg	0.696	1	0	ND	ND	ND
Nickel	mg/kg	42.8	1	0	7	7	7.0
[b] Selenium	mg/kg	1	1	0	ND	ND	ND
Silver	mg/kg	1.77	1	0	0.4	0.4	0.40
Zinc	mg/kg	271	1	1	280	280	280

Table 4-6

Summary of Sediment Quality Sampling Data
Ballona Wetlands - Saltwater
Prior to 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
Pesticides and PCBs							
[b] Aldrin	µg/kg	9.5	1	0	ND	ND	ND
Dieldrin	µg/kg	4.3	1	0	ND	ND	ND
Endosulfan I	µg/kg	—	1	—	ND	ND	ND
Endosulfan II	µg/kg	—	1	—	ND	ND	ND
Endosulfan Sulfate	µg/kg	—	1	—	ND	ND	ND
Endrin	µg/kg	—	1	—	ND	ND	ND
Endrin aldehyde	µg/kg	—	1	—	ND	ND	ND
Heptachlor Epoxide	µg/kg	—	1	—	ND	ND	ND
[b] Heptachlor	µg/kg	0.3	1	0	ND	ND	ND
Methoxychlor	µg/kg	—	1	—	ND	ND	ND
PCB-1016	µg/kg	188.79	1	0	ND	ND	ND
PCB-1221	µg/kg	188.79	1	0	ND	ND	ND
PCB-1232	µg/kg	188.79	1	0	ND	ND	ND
PCB-1242	µg/kg	188.79	1	0	ND	ND	ND
PCB-1248	µg/kg	188.79	1	0	ND	ND	ND
PCB-1262	µg/kg	188.79	1	0	ND	ND	ND
Toxaphene	µg/kg	—	1	—	ND	ND	ND
alpha-BHC	µg/kg	—	1	—	ND	ND	ND
gamma-BHC (lindane)	µg/kg	0.99	1	0	ND	ND	ND
beta-BHC	µg/kg	—	1	—	ND	ND	ND
delta-BHC	µg/kg	—	1	—	ND	ND	ND
P,P'-DDD	µg/kg	—	1	—	ND	ND	ND
P,P'-DDE	µg/kg	374.17	1	0	ND	ND	ND
PCB-1254	µg/kg	188.79	1	0	ND	ND	ND

Notes:
— - No Guidance Value
NA - Not Analyzed
ND - Not Detected
1990 WCC = 1990, November. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.
PEL - Probable Effects Level, level above which adverse effects are frequently expected
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

Table 4-7

Summary of Sediment Quality Sampling
Centinela Ditch - Saltwater
Prior to 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	Storm Drains		
					Minimum	Maximum	Mean
General							
Oil & Grease	mg/kg	—	1	—	89	89	89
VOCs							
1,1,1-Trichloroethane	µg/kg	—	1	—	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/kg	—	1	—	ND	ND	ND
1,1,2-Trichloroethane	µg/kg	—	1	—	ND	ND	ND
1,1-Dichloroethane	µg/kg	—	1	—	ND	ND	ND
1,1-Dichloroethene	µg/kg	—	1	—	ND	ND	ND
1,2-Dichloroethane	µg/kg	—	1	—	ND	ND	ND
1,2-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
1,2-Dichloropropane	µg/kg	—	1	—	ND	ND	ND
1,3-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
1,4-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
2-Chloroethylvinylether	µg/kg	—	1	—	ND	ND	ND
2-Hexanone	µg/kg	—	1	—	ND	ND	ND
Acetone	µg/kg	—	1	—	ND	ND	ND
Acrolein	µg/kg	—	1	—	ND	ND	ND
Acrylonitrile	µg/kg	—	1	—	ND	ND	ND
Bromodichloromethane	µg/kg	—	1	—	ND	ND	ND
Bromomethane	µg/kg	—	1	—	ND	ND	ND
Benzene	µg/kg	—	1	—	ND	ND	ND
Bromoform	µg/kg	—	1	—	ND	ND	ND
Chlorobenzene	µg/kg	—	1	—	ND	ND	ND
Carbon Tetrachloride	µg/kg	—	1	—	ND	ND	ND
Chloroethane	µg/kg	—	1	—	ND	ND	ND
Chloroform	µg/kg	—	1	—	ND	ND	ND
Chloromethane	µg/kg	—	1	—	ND	ND	ND
Carbon Disulfide	µg/kg	—	1	—	ND	ND	ND
Dibromochloromethane	µg/kg	—	1	—	ND	ND	ND
[b] Ethylbenzene	µg/kg	4	1	0	ND	ND	ND
Freon-113	µg/kg	—	1	—	ND	ND	ND
Methyl Ethyl Ketone	µg/kg	—	1	—	ND	ND	ND
Methyl Isobutyl ketone	µg/kg	—	1	—	ND	ND	ND
Methylene Chloride	µg/kg	—	1	—	ND	ND	ND
Styrene	µg/kg	—	1	—	ND	ND	ND
[b] Trichloroethene	µg/kg	41	1	0	ND	ND	ND
Trichlorofluoromethane	µg/kg		1	—	ND	ND	ND
Toluene	µg/kg	—	1	—	ND	ND	ND
[b] Tetrachloroethene	µg/kg	57	1	0	ND	ND	ND
Vinyl Acetate	µg/kg	—	1	—	ND	ND	ND
Vinyl Chloride	µg/kg	—	1	—	ND	ND	ND
[b] Total Xylenes	µg/kg	4	1	0	ND	ND	ND
cis-1,2-Dichloroethene	µg/kg	—	1	—	ND	ND	ND
cis-1,3-Dichloropropene	µg/kg	—	1	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/kg	—	1	—	ND	ND	ND
trans-1,3-Dichloropropene	µg/kg	—	1	—	ND	ND	ND
SVOCs							
1,2,4-Trichlorobenzene	µg/kg	—	1	—	ND	ND	ND
[b] 1,2-Dichlorobenzene	µg/kg	13	1	0	ND	ND	ND
1,2-Diphenylhydrazine	µg/kg	—	1	—	ND	ND	ND
1,3-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
[b] 1,4-Dichlorobenzene	µg/kg	110	1	0	ND	ND	ND
2,4-Dinitrotoluene	µg/kg	—	1	—	ND	ND	ND
2,6-Dinitrotoluene	µg/kg	—	1	—	ND	ND	ND
2-Methylnaphthalene	µg/kg		1	—	ND	ND	ND
2-Nitroaniline	µg/kg	—	1	—	ND	ND	ND
3,3'-Dichlorobenzidine	µg/kg	—	1	—	ND	ND	ND
3-Nitroaniline	µg/kg	—	1	—	ND	ND	ND
4-Bromophenylphenylether	µg/kg	—	1	—	ND	ND	ND
4-Chloroaniline	µg/kg	—	1	—	ND	ND	ND
4-Nitroaniline	µg/kg	—	1	—	ND	ND	ND
Acenaphthene	µg/kg	88.9	1	0	ND	ND	ND
Acenaphthylene	µg/kg	127.87	1	0	ND	ND	ND
Aniline	µg/kg	—	1	—	ND	ND	ND
Anthracene	µg/kg	245	1	0	ND	ND	ND
Benzidine	µg/kg	—	1	—	ND	ND	ND
Benz(a)anthracene	µg/kg	692.53	1	0	ND	ND	ND

Table 4-7

Summary of Sediment Quality Sampling
Centinela Ditch - Saltwater
Prior to 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	Storm Drains		
					Minimum	Maximum	Mean
Benzo(a)pyrene	µg/kg	763.22	1	0	ND	ND	ND
[b] Benzo(b)fluoranthene	µg/kg	1800	1	0	ND	ND	ND
Benzo(g,h,i)perylene	µg/kg	670	1	0	ND	ND	ND
[b] Benzo(k)fluoranthene	µg/kg	1800	1	0	ND	ND	ND
[b] Butylbenzylphthalate	µg/kg	63	1	0	ND	ND	ND
Chrysene	µg/kg	845.98	1	0	ND	ND	ND
[b] Di-n-octylphthalate	µg/kg	61	1	0	ND	ND	ND
Dibenz(a,h)anthracene	µg/kg	134.61	1	0	ND	ND	ND
Dibenzofuran	µg/kg	—	1		ND	ND	ND
Dibutylphthalate	µg/kg	—	1	—	ND	ND	ND
[b] Diethylphthalate	µg/kg	6	1	0	ND	ND	ND
[b] Dimethylphthalate	µg/kg	6	1	0	ND	ND	ND
Fluoranthene	µg/kg	1493.54	1	0	ND	ND	ND
Fluorene	µg/kg	144.35	1	0	ND	ND	ND
[b] Hexachlorobenzene	µg/kg	6	1	0	ND	ND	ND
[b] Hexachlorobutadiene	µg/kg	1.3	1	0	ND	ND	ND
Hexachlorocylclopentadience	µg/kg	—	1	—	ND	ND	ND
[b] Hexachloroethane	µg/kg	73	1	0	ND	ND	ND
[b] Indeno(1,2,3-c,d)pyrene	µg/kg	600	1	0	ND	ND	ND
Isophorone	µg/kg	—	1	—	ND	ND	ND
N-Nitrosodimethylamine	µg/kg	—	1	—	ND	ND	ND
[b] N-Nitrosodiphenylamine	µg/kg	28	1	0	ND	ND	ND
N-Nitrosodi-n-propylamine	µg/kg	—	1	—	ND	ND	ND
Nitrobenzene	µg/kg	—	1	—	ND	ND	ND
Naphthalene	µg/kg	390.64	1	0	ND	ND	ND
Phenanthrene	µg/kg	543.53	1	0	ND	ND	ND
Pyrene	µg/kg	1397.6	1	0	ND	ND	ND
bis(2-Chloroethoxy)methane	µg/kg	—	1	—	ND	ND	ND
bis(2-Chloroethyl)ether	µg/kg	—	1	—	ND	ND	ND
bis(2-Chloroisopropyl)ether	µg/kg	—	1	—	ND	ND	ND
bis(2-Ethylhexyl)phthalate	µg/kg	—	1	—	ND	ND	ND
Metals							
Arsenic	mg/kg	41.6	1	0	2.85	2.85	2.85
Cadmium	mg/kg	4.21	1	0	2	2	2
Chromium	mg/kg	160.4	1	0	27.5	27.5	27.5
Copper	mg/kg	108.2	1	0	29.5	29.5	29.5
Lead	mg/kg	112.18	1	0	58	58	58
Mercury	mg/kg	0.696	1	0	ND	ND	ND
Nickel	mg/kg	42.8	1	0	9.5	9.5	9.5
[b] Selenium	mg/kg	1	1	0	ND	ND	ND
Silver	mg/kg	1.77	1	0	0.7	0.7	0.7
Zinc	mg/kg	271	1	0	160	160	160
Pesticides and PCBs							
[b] Aldrin	µg/kg	9.5	1	0	ND	ND	ND
Chlordane	µg/kg	4.79	1	0	ND	ND	ND
p,p'-DDD	µg/kg	7.81	1	0	ND	ND	ND
p,p'-DDE	µg/kg	374.17	1	0	ND	ND	ND
p,p'-DDT	µg/kg	4.77	1	0	ND	ND	ND
Dieldrin	µg/kg	4.3	1	0	ND	ND	ND
Endosulfan I	µg/kg	—	1	—	ND	ND	ND
Endosulfan II	µg/kg	—	1	—	ND	ND	ND
Endosulfan Sulfate	µg/kg	—	1	—	ND	ND	ND
Endrin	µg/kg	—	1	—	ND	ND	ND
Endrin aldehyde	µg/kg	—	1	—	ND	ND	ND
Heptachlor Epoxide	µg/kg	—	1	—	ND	ND	ND
[b] Heptachlor	µg/kg	0.3	1	0	ND	ND	ND
Methoxychlor	µg/kg	—	1	—	ND	ND	ND
Aroclor-1016	µg/kg	188.79	1	0	ND	ND	ND
Aroclor-1221	µg/kg	188.79	1	0	ND	ND	ND
Aroclor-1232	µg/kg	188.79	1	0	ND	ND	ND
Aroclor-1242	µg/kg	188.79	1	0	ND	ND	ND
Aroclor-1248	µg/kg	188.79	1	0	ND	ND	ND

Table 4-7

Summary of Sediment Quality Sampling
Centinela Ditch - Saltwater
Prior to 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs ª 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	Storm Drains		
					Minimum	Maximum	Mean
Aroclor-1254	µg/kg	188.79	1	0	ND	ND	ND
Aroclor-1260	µg/kg	188.79	1	0	ND	ND	ND
Aroclor-1262	µg/kg	188.79	1	0	ND	ND	ND
Toxaphene	µg/kg	—	1	--	ND	ND	ND
alpha-BHC	µg/kg	—	1	—	ND	ND	ND
beta-BHC	µg/kg	—	1	—	ND	ND	ND
delta-BHC	µg/kg	—	1	--	ND	ND	ND
gamma-BHC (lindane)	µg/kg	0.99	1	0	ND	ND	ND

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

SD - Storm Drain

PEL - Probable Effects Level, level above which adverse effects are frequently expected

1990 WCC = 1990, November 14. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

* Indicates exceeds guidance values

Table 4-8

Summary of Water Quality Sampling
Dry Weather Data - Santa Monica Bay
After 1991

Parameter	Units	CTR Chronic SW Criteria	COP Objectives	COP Chronic Toxicity	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
							Minimum	Maximum	Mean
General									
Oil and Grease	mg/l	—	25	—	1	0	8	8	8
Total Coliform	MPN/100ml	—	1000	—	22	6	ND	16,000	1,330
Fecal Coliform	MPN/100ml	—	200	—	22	6	ND	2,400	273
Entero Coccus	Col's/100ml	--	—	—	22	--	ND	500	28
Salinity	‰	—	—	—	64	—	25	33.57	33
Total Phosphorus	mg/l	—		—	1	—	0.17	0.17	0.17
Metals									
Dissolved Arsenic	µg/l	36	32	19	1	0	ND	ND	ND
Dissolved Cadmium	µg/l	9.3	4	8	1	0	ND	ND	ND
Dissolved Copper	µg/l	3.1	12	5	1	0	ND	ND	ND
Dissolved Lead	µg/l	8.1	8	22	1	0	ND	ND	ND
Dissolved Mercury	µg/l	—	0.16	0.4	1	0	ND	ND	ND
Dissolved Nickel	µg/l	8.2	20	48	1	1	10	10	10
Dissolved Zinc	µg/l	81	80	51	1	1	60	60	60
Pesticides and PCBs									
[b] Aldrin	µg/l	1.3	0.000022	—	1	0	ND	ND	ND
Chlordane	µg/l	0.004	0.000023	—	1	0	ND	ND	ND
Dieldrin	µg/l	0.0019	0.00004	—	1	0	ND	ND	ND
Endrin	µg/l	0.0023	0.004	—	1	0	ND	ND	ND
Toxaphene	µg/l	0.0002	0.0021	—	1	0	ND	ND	ND
Heptachlor	µg/l	0.0036	0.00072	—	1	0	ND	ND	ND
Heptachlor Epoxide	µg/l	0.0036	—	—	1	--	ND	ND	ND
O,P'-DDT	µg/l	—	0.00017	—	1	0	ND	ND	ND
P,P'-DDT	µg/l	0.001	0.00017	—	1	0	ND	ND	ND
PCB-1016	µg/l	0.03	0.000019	—	1	0	ND	ND	ND
PCB-1221	µg/l	0.03	0.000019	—	1	0	ND	ND	ND
PCB-1232	µg/l	0.03	0.000019	—	1	0	ND	ND	ND
PCB-1242	µg/l	0.03	0.000019	-	1	0	ND	ND	ND
PCB-1248	µg/l	0.03	0.000019	—	1	0	ND	ND	ND
PCB-1254	µg/l	0.03	0.000019	—	1	0	ND	ND	ND
PCB-1260	µg/l	0.03	0.000019	—	1	0	ND	ND	ND

Notes:

— - No Criteria
NA - Not Analyzed
ND - Not Detected
1992 Chambers Group = 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetland Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.
1996-1997 ABCL - 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
COP Chronic Toxicity = 1997. California State Water Resources Control Board. California Ocean Plan. Table D Conservative Estimates of Chronic Toxicity.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] Criteria for hexavalent chromium was used for chromium
[b] CTR criteria is from the acute saltwater criteria.

Table 4-9

Summary of Water Quality Sampling
Dry Weather Data - Ballona Channel - Saltwater
After 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data Minimum	All Data Maximum	All Data Mean
General							
Cyanide	mg/l	1	1	0	0.0017	0.0017	0.0017
Oil and Grease	mg/l	—	13	—	ND	57	9
TRPH	mg/l	—	1	—	ND	ND	ND
TPH - Gas	µg/l	—	1	—	ND	ND	ND
MTBE	µg/l	—	1	—	ND	ND	ND
TPH - Diesel	mg/l	—	1	—	ND	ND	ND
Total Phenols	mg/l	—	1	—	0.0019	0.0019	0.0019
Tributyltin	µg/l	—	4	—	ND	ND	ND
Total Coliform	MPN/100ml	—	13	—	ND	16000	3567
Fecal Coliform	MPN/100ml	—	13	—	ND	1300	216
Entero Coccus	MPN/100ml	—	11	—	ND	280	28
Calcium	mg/l	—	2	—	340	360	350
Magnesium	mg/l	—	8	—	448	1350	862
Potassium	mg/l	—	8	—	177	537	345
Sodium	mg/l	—	2	—	8100	8400	8250
Chloride	mg/l	—	12	—	7460	20,000	13375
Sulfate	mg/l	—	12	—	1130	2800	1820
Bicarbonate	mg/l	—	8	—	110	226	164
Carbonate	mg/l	—	8	—	ND	ND	ND
Hydroxide Alkalinity	mg/l	—	2	—	ND	ND	ND
Alkalinity	mg/l	—	4	—	160	180	175
Hardness	mg/l	—	4	—	2600	4200	3280
pH	su	—	28	—	7.84	8.43	8
Ammonia	mg/l	—	4	-	ND	0.94	0.24
NH3-N	mg/l	—	4	—	ND	ND	ND
NH3+ NH4	mg/l	—	22	—	ND	1.59	0.4
Nitrate	mg/l	—	5	—	ND	3.9	2.7
Nitrate-N	mg/l	—	2	—	ND	ND	ND
Nitrite-N	mg/l	—	2	—	ND	ND	ND
TKN	mg/l	—	8	—	ND	1.8	0.8
Total Inorganic Nitrogen	mg/l	—	2	—	ND	ND	ND
Total Phosphate	mg/l	—	0	—	ND	1.8	8.2
Total Phosphorus	mg/l	—	14	—	ND	0.53	0.17
Orthophosphate	mg/l	—	8	—	ND	ND	ND
Orthophosphorus	mg/l	—	0	—	ND	ND	#DIV/0!
Specific Conductance	µmhos/cm	—	6	—	37000	52000	45170
Total Dissolved Solids	mg/l	—	14	—	12000	35000	22803
Total Suspended Solids	mg/l	—	4	—	27	46	35
Volatile Suspended Solids	mg/l	—	4	—	ND	ND	ND
Dissolved Oxygen	mg/l	—	22	—	5.5	13.9	8.3
Volatile Solids	mg/l	-	8	—	2400	6500	4238
MBAS	mg/l	—	4		0.12	0.17	0.14
Total Organic Carbon	mg/l	—	8	—	1.2	22	7
BOD	mg/l	—	26	—	ND	12	5
COD	mg/l	—	8	—	85	1800	568
Bromide	mg/l	—	2	—	ND	110	55
Salinity	‰	—	24	—	21.09	33.5	30
Silica	µg/l	—	1	—	ND	ND	ND
Strontium 90	pci/l	—	1	—	1.76	1.76	1.76
Immediate Oxygen Demand	mg/l	—	6	—	ND	ND	ND
Organic Nitrogen	mg/l	—	6	—	1	6.7	2.8
Volatile Organics							
Tetrachloroethene	µg/l	—	10	—	ND	ND	ND
Toluene	µg/l	200000	11	0	ND	ND	ND
Methylene Chloride	µg/l	1600	7	0	ND	ND	ND
1,2-Dichloroethane	µg/l	99	7	0	ND	ND	ND
Chloroform	µg/l	470	7	0	ND	ND	ND
1,1,1-Trichloroethane	µg/l	—	7	—	ND	ND	ND
Benzene	µg/l	71	7	0	ND	ND	ND
Ethylbenzene	µg/l	29000	7	0	ND	ND	ND
Chloromethane	µg/l	—	6	—	ND	ND	ND
Bromomethane	µg/l	—	6	—	ND	ND	ND
Dichlorodifluoromethane	µg/l	—	6	—	ND	ND	ND
Vinyl Chloride	µg/l	525	6	0	ND	ND	ND
Chloroethane	µg/l	—	6	—	ND	ND	ND
Trichlorofluoromenthane	µg/l	—	6	—	ND	ND	ND
1,1-Dichloroethene	µg/l	—	6	—	ND	ND	ND
1,1-Dichloroethane	µg/l	—	6	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/l	—	6	—	ND	ND	ND
Carbon Tetrachloride	µg/l	4.4	6	0	ND	ND	ND
Bromodichloromethane	µg/l	—	6	—	ND	ND	ND
1,2-Dichloropropane	µg/l	39	6	0	ND	ND	ND

Table 4-9

Summary of Water Quality Sampling
Dry Weather Data - Ballona Channel - Saltwater
After 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
trans-1,3-Dichloropropene	µg/l	—	6	—	ND	ND	ND
Trichloroethene	µg/l	—	6	—	ND	ND	ND
Dibromochloromethane	µg/l	—	6	—	ND	ND	ND
1,1,2-Trichloroethane	µg/l	42	6	0	ND	ND	ND
cis-1,3-Dichloropropene	µg/l	1700	6	0	ND	ND	ND
2-Chloroethylvinylether	µg/l	—	6	—	ND	ND	ND
Bromoform	µg/l	360	6	0	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	11	6	0	ND	ND	ND
Chlorobenzene	µg/l	21000	6	0	ND	ND	ND
1,2-Dichlorobenzene	µg/l	17000	6	0	ND	ND	ND
1,3-Dichlorobenzene	µg/l	2600	6	0	ND	ND	ND
1,4-Dichlorobenzene	µg/l	2600	6	0	ND	ND	ND
Total Xylenes	µg/l	—	6	—	ND	ND	ND
Semi-Volatile Organics							
Naphthalene	µg/l	—	4	—	ND	3.1	1
1,2,3-Trichloropropane	µg/l	—	4	—	ND	2.1	1
4-Chloro-3-methylphenol	µg/l	—	1	—	ND	ND	ND
2-Chlorophenol	µg/l	400	1	0	ND	ND	ND
2,4-Dichlorophenol	µg/l	790	1	0	ND	ND	ND
2,4-Dimethylphenol	µg/l	2300	1	0	ND	ND	ND
2,4-Dinitrophenol	µg/l	14000	1	0	ND	ND	ND
2-Methyl-4,6-dinitrophenol	µg/l	765	1	0	ND	ND	ND
2-Nitrophenol	µg/l	—	1	—	ND	ND	ND
4-Nitrophenol	µg/l	—	1	—	ND	ND	ND
Pentachlorophenol	µg/l	8.2	1	0	ND	ND	ND
Phenol	µg/l	4600000	1	0	ND	ND	ND
2,4,6-Trichlorophenol	µg/l	6.5	1	0	ND	ND	ND
Metals							
Dissolved Aluminum	µg/l	—	2	—	ND	ND	ND
Total Aluminum	µg/l	—	2	—	ND	ND	ND
Total Antimony	µg/l	—	6	—	ND	ND	ND
Dissolved Arsenic	µg/l	36	8	0	ND	ND	ND
Total Arsenic	µg/l	—	8	-	ND	ND	ND
Dissolved Beryllium	µg/l	—	2	—	ND	ND	ND
Total Beryllium	µg/l	—	8	—	ND	ND	ND
Dissolved Boron	µg/l	—	2	—	3700	3900	3800
Total Boron	µg/l	—	2	—	3500	3700	3600
Dissolved Cadmium	µg/l	9.3	8	0	ND	ND	ND
Total Cadmium	µg/l	—	14	—	ND	1.7	0.1
Dissolved Chromium[a]	µg/l	50	2	0	ND	4	ND
Total Chromium	µg/l	—	12	—	ND	7.05	1.09
Total Chromium +6	µg/l	—	2	—	ND	ND	ND
Dissolved Copper	µg/l	3.1	8	3	ND	120	18
Total Copper	µg/l	—	8	—	ND	120	33
Dissolved Iron	µg/l	—	8	—	ND	1470	438
Total Iron	µg/l	-	2	—	320	490	405
Dissolved Lead	µg/l	8.1	8	0	ND	ND	ND
Total Lead	µg/l	—	8	—	ND	55	27
Dissolved Manganese	µg/l	—	8	—	ND	120	31
Total Manganese	µg/l	—	2	—	ND	ND	ND
Dissolved Mercury	µg/l	—	8	—	ND	ND	ND
Total Mercury	µg/l	—	8	—	ND	0.35	0.09
Dissolved Nickel	µg/l	8.2	8	0	ND	ND	ND
Total Nickel	µg/l	—	8	—	ND	ND	ND
Dissolved Selenium	µg/l	71	2	2	390	440	415
Total Selenium	µg/l	—	8	—	ND	460	102
Dissolved Silver	µg/l	—	2	—	ND	ND	ND
Total Silver	µg/l	—	8	—	ND	ND	ND
Dissolved Thallium	µg/l	—	2	—	ND	ND	ND
Total Thallium	µg/l	—	8	-	ND	ND	ND
Dissolved Zinc	µg/l	81	8	4	20	210	88
Total Zinc	µg/l	—	8	—	ND	170	41
Pesticides[b]							
beta-BHC	µg/l	0.046	7	0	ND	ND	ND
delta-BHC	µg/l	—	1	—	ND	ND	ND
O,P'-DDD	µg/l	0.00084	7	0	ND	ND	ND
P,P'-DDD	µg/l	0.00084	7	0	ND	ND	ND
O,P'-DDE	µg/l	0.00059	1	0	ND	ND	ND
P,P'-DDE	µg/l	0.00059	7	0	ND	ND	ND
Total Pesticides	µg/l	—	6	—	ND	ND	ND
PCB-1016	µg/l	0.03	6	0	ND	ND	ND
PCB-1221	µg/l	0.03	6	0	ND	ND	ND

Table 4-9

Summary of Water Quality Sampling
Dry Weather Data - Ballona Channel - Saltwater
After 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
PCB-1232	µg/l	0.03	6	0	ND	ND	ND
PCB-1242	µg/l	0.03	6	0	ND	ND	ND
PCB-1248	µg/l	0.03	6	0	ND	ND	ND
PCB-1260	µg/l	0.03	6	0	ND	ND	ND
PCB-1254	µg/l	0.03	7	0	ND	ND	ND
Total Chlorinated Hydrocarbons	µg/l	—	6	—	ND	ND	ND
Aldrin	µg/l	0.00014	6	0	ND	ND	ND
alpha-BHC	µg/l	0.013	6	0	ND	ND	ND
Lindane	µg/l	0.063	6	0	ND	ND	ND
Chlordane	µg/l	0.004	6	0	ND	ND	ND
Dieldrin	µg/l	0.0019	6	0	ND	ND	ND
Endrin	µg/l	0.0023	6	0	ND	ND	ND
Toxaphene	µg/l	0.0002	6	0	ND	ND	ND
Heptachlor	µg/l	0.0036	6	0	ND	ND	ND
Heptachlor Epoxide	µg/l	0.0036	6	0	ND	ND	ND
O,P'-DDT	µg/l	—	6	—	ND	ND	ND
P,P'-DDT	µg/l	0.001	6	0	ND	ND	ND

Notes:

— - No Criteria
NA - Not Analyzed
ND - Not Detected
1991 Chambers = 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel. The Chambers 1993 Report does not indicate whether the metals values reported are dissolved or total. Here they are assumed to represent dissolved metals concentrations.
1996-1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
1996-1998 CDM = 1996, August 14. Camp Dresser & McKee. Ballona Creek Water and Sediment Quality Sediment Quality Report, 1995/1996, Wet Weather Season, Playa Vista, California and 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] Criteria for hexavalent chromium was used for chromium
[b] CTR criteria are from human health organisms only criteria,except for PCBs,Chlordane, Toxaphene, Heptachlor, and P,P'-DDT.

Table 4-10

Summary of Water Quality Sampling
Dry Weather Data - Ballona Wetlands - Saltwater
After 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
General							
Oil & Grease	mg/l	—	4	0	0.33	0.62	0.49
Total Coliform	MPN/100ml	—	5	0	ND	ND	ND
Fecal Coliform	MPN/100ml	—	5	0	ND	ND	ND
Dissolved Calcium	mg/l	—	1	0	370	370	370
Total Calcium	mg/l	—	5	0	310	990	476
Dissolved Magnesium	mg/l	—	1	0	1000	1000	1000
Total Magnesium	mg/l	—	5	0	950	2700	1342
Dissolved Potassium	mg/l	—	1	0	350	350	350
Total Potassium	mg/l	—	5	0	330	930	462
Dissolved Sodium	mg/l	—	1	0	8400	8400	8400
Total Sodium	mg/l	—	5	0	8500	23000	11520
Bicarbonate	mg/l	—	1	—	100	100	100
Carbonate	mg/l	—	1	—	96	96	96
Hydroxide Alkalinity	mg/l	—	5	—	ND	ND	ND
Chloride	mg/l	—	5	—	15000	40000	21200
Sulfate	mg/l	—	5	—	2200	7500	3600
Total Alkalinity	mg/l	—	4	—	140	260	175
Bicarbonate Alkalinity	mg/l	—	4	—	140	260	175
Carbonate Alkalinity	mg/l	—	4	—	ND	16	4
Hardness	mg/l	—	6	—	620	14000	6028
pH	su	—	4	—	8.13	8.42	8.25
Ammonia-N	mg/l	—	5	—	ND	0.2	0.06
Nitrate-N	mg/l	—	5	—	ND	ND	ND
Nitrite-N	mg/l	—	5	—	ND	ND	ND
TKN	mg/l		5	—	1.1	3.4	2.36
Total Inorganic Nitrogen	mg/l	—	1	—	ND	ND	ND
Specific Conductance	µmhos/cm	—	4	—	49000	130000	70500
Total Phosphorus	mg/l	—	5	—	0.044	0.66	0.31
Orthophosphate	mg/l	—	5	—	ND	ND	ND
Total Dissolved Solids	mg/l	—	5	—	28000	78000	39400
Total Suspended Solids	mg/l	—	5	—	28	310	85.80
Total Volatile Solids	mg/l	—	5	—	3400	9000	4960
Total Organic Carbon	mg/l	—	7	—	2.0	67	15.33
BOD	mg/l	—	5	—	1.4	75.9	23.44
COD	mg/l	—	5	—	430	2000	804.00
Bromide	mg/l	—	5	—	60	190	98.20
Salinity	‰	—	5	—	31	79	42.80
Hydrogen Sulfide	mg/l	—	2	—	ND	ND	ND
Cyanide	mg/l	—	4	—	ND	ND	ND
TPH-Recoverable	mg/l	—	3	—	ND	0.46	0.15
TPH-Extractable	mg/l	—	4	—	ND	0.14	0.07
TPH-Volatile (C4-C12)	mg/l	—	4	—	ND	24	8.38
Total Phenols	mg/l	—	4	—	ND	ND	ND
Turbidity	mg/l	—	4	—	3.9	92	27.85
VOCs[a]							
1,1,1,2-Tetrachloroethane	µg/l	—	4	—	ND	ND	ND
1,1,1-Trichloroethane	µg/l	—	4	—	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	11	4	0	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoro	µg/l	—	4	—	ND	ND	ND
1,1,2-Trichloroethane	µg/l	42	4	0	ND	ND	ND
1,1-Dichloroethane	µg/l	—	4	—	ND	ND	ND
1,1-Dichloroethene	µg/l	3.2	4	0	ND	ND	ND
1,1-Dichloropropene	µg/l	—	4	—	ND	ND	ND
1,2,3-Trichlorobenzene	µg/l	—	4	—	ND	ND	ND
1,2,4-Trichlorobenzene	µg/l	—	4	—	ND	ND	ND
1,2,4-Trimethylbenzene	µg/l	—	4	—	ND	ND	ND
1,2-Dibromo-3-chloropropane	µg/l	—	4	—	ND	ND	ND
1,2-Dibromoethane	µg/l	—	4	—	ND	ND	ND
1,2-Dichloroethane	µg/l	99	4	0	ND	ND	ND
1,2-Dichlorobenzene	µg/l	—	4	—	ND	ND	ND
1,2-Dichloropropane	µg/l	39	4	0	ND	ND	ND
1,3-Dichlorobenzene	µg/l	—	4	—	ND	ND	ND
1,3-Dichloropropane	µg/l	—	4	—	ND	ND	ND
1,3,5-Trimethylbenzene	µg/l	—	4	—	ND	ND	ND
1,4-Dichlorobenzene	µg/l	—	4	—	ND	ND	ND
2,2-Dichloropropane	µg/l	—	4	—	ND	ND	ND
2-Butanone	µg/l	—	4	—	ND	ND	ND
2-Chlorotoluene	µg/l	—	4	—	ND	ND	ND
2-Hexanone	µg/l	—	4	—	ND	ND	ND
4-Chlorotoluene	µg/l	—	4	—	ND	ND	ND
Acetone	µg/l	—	6	—	ND	15	3.22

Table 4-10

Summary of Water Quality Sampling
Dry Weather Data - Ballona Wetlands - Saltwater
After 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
Bromodichloromethane	µg/l	—	4	—	ND	ND	ND
Bromochloromethane	µg/l	—	4	—	ND	ND	ND
Bromobenzene	µg/l	—	4	—	ND	ND	ND
Bromomethane	µg/l	—	4	—	ND	ND	ND
Benzene[a]	µg/l	71	6	0	ND	0.71	0.12
Bromoform	µg/l	360	4	0	ND	ND	ND
Chlorodibromomethane	µg/l	34	4	0	ND	ND	ND
Chlorobenzene	µg/l	21000	4	0	ND	ND	ND
Carbon Tetrachloride	µg/l	4.4	4	0	ND	ND	ND
Chloroethane	µg/l	—	4	—	ND	ND	ND
Chloroform	µg/l	—	4	—	ND	ND	ND
Chloromethane	µg/l	—	4	—	ND	0.35	0.16
Carbon Disulfide	µg/l	—	4	—	ND	2.6	0.65
Dibromomethane	µg/l	—	4	—	ND	ND	ND
Dichlorodifluoromethane	µg/l	—	4	—	ND	ND	ND
Ethylbenzene	µg/l	29000	4	0	ND	ND	ND
Hexachlorobutadiene	µg/l	—	4	—	ND	ND	ND
Isopropylbenzene	µg/l	—	4	—	ND	ND	ND
Methyl Isobutyl ketone	µg/l	—	4	—	ND	ND	ND
m,p-Xylene	µg/l	—	4	—	ND	0.2	0.05
Methylene Chloride	µg/l	—	4	—	ND	ND	ND
Methyl-tert-butyl-ether	µg/l	1600	6	0	ND	0.28	0.05
Napthalene	µg/l	—	4	—	ND	ND	ND
n-Butylbenzene	µg/l	—	4	—	ND	ND	ND
n-Propylbenzene	µg/l	—	4	—	ND	ND	ND
p-Isopropyltoluene	µg/l	—	4	—	ND	0.57	0.14
o-Xylene	µg/l	—	4	—	ND	ND	ND
sec-Butylbenzene	µg/l	—	4	—	ND	ND	ND
tert-Butylbenzene	µg/l	—	4	—	ND	ND	ND
Styrene	µg/l	—	4	—	ND	ND	ND
Trichloroethene	µg/l	81	4	0	ND	ND	ND
Trichlorofluoromethane	µg/l	—	4	—	ND	ND	ND
Toluene[a]	µg/l	200000	6	0	ND	0.15	0.05
Tetrachloroethene	µg/l	8.85	4	0	ND	ND	ND
Vinyl Acetate	µg/l	—	4	—	ND	ND	ND
Vinyl Chloride	µg/l	525	4	0	ND	ND	ND
Total Xylenes	µg/l	—	4	—	ND	0.2	0.05
cis-1,2-Dichloroethene	µg/l	—	4	—	ND	ND	ND
cis-1,3-Dichloropropene	µg/l	—	4	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/l	—	4	—	ND	ND	ND
trans-1,3-Dichloropropene	µg/l	—	4	—	ND	ND	ND
Other VOCs	µg/l	—	1	—	ND	ND	ND
Semi-Volatile Organics[a]							
1,2,4-Trichlorobenzene	µg/l	—	4	—	ND	ND	ND
1,2-Dichlorobenzene	µg/l	17000	4	0	ND	ND	ND
1,2-Diphenylhydrazine	µg/l	—	4	—	ND	ND	ND
1,3-Dichlorobenzene	µg/l	2600	4	0	ND	ND	ND
1,4-Dichlorobenzene	µg/l	2600	4	0	ND	ND	ND
2,4,5-Trichlorophenol	µg/l	—	4	—	ND	ND	ND
2,4,6-Trichlorophenol	µg/l	—	4	—	ND	ND	ND
2,4-Dichlorophenol	µg/l	790	4	0	ND	ND	ND
2,4-Dimethylphenol	µg/l	2300	4	0	ND	ND	ND
2,4 Dinitrophenol	µg/l	14000	4	0	ND	ND	ND
2,4-Dinitrotoluene	µg/l	—	4	—	ND	ND	ND
2,6-Dinitrotoluene	µg/l	—	4	—	ND	ND	ND
2-Chloronaphthalene	µg/l	4300	4	0	ND	ND	ND
2-Chlorophenol	µg/l	—	4	—	ND	ND	ND
2-Methylnaphthalene	µg/l	—	4	—	ND	ND	ND
2-Methylphenol	µg/l	—	4	—	ND	ND	ND
2-Naphthylamine	µg/l	—	4	—	ND	ND	ND
2-Nitroaniline	µg/l	—	4	—	ND	ND	ND
2-Nitrophenol	µg/l	—	4	—	ND	ND	ND
3,3'-Dichlorobenzidine	µg/l	0.077	4	0	ND	ND	ND
3/4-Methylphenol	µg/l		4	—	ND	ND	ND
3-Nitroaniline	µg/l	—	4	—	ND	ND	ND
2,6-Dinitro-2-Methylphenol	µg/l	—	4	—	ND	ND	ND
4-Bromophenylphenylether	µg/l	—	4	—	ND	ND	ND
2-Chloro-3-Methylphenol	µg/l	—	4	—	ND	ND	ND
4-Chloroaniline	µg/l	—	4	—	ND	ND	ND
4-Chlorophenylphenylether	µg/l	—	4	—	ND	ND	ND
4-Nitroaniline	µg/l	—	4	—	ND	ND	ND
4-Nitrophenol	µg/l	—	4	—	ND	ND	ND

Table 4-10

Summary of Water Quality Sampling
Dry Weather Data - Ballona Wetlands - Saltwater
After 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
Acenaphthene	µg/l	2700	4	0	ND	ND	ND
Acenaphthylene	µg/l	—	4	—	ND	ND	ND
Aniline	µg/l	—	4	—	ND	ND	ND
Anthracene	µg/l	110000	4	0	ND	ND	ND
Benzidine	µg/l	—	4	—	ND	ND	ND
Benzo(a)anthracene	µg/l	0.049	4	0	ND	ND	ND
Benzo(a)pyrene	µg/l	0.049	4	0	ND	ND	ND
Benzo(b)fluoranthene	µg/l	0.049	4	0	ND	ND	ND
Benzo(g,h,i)perylene	µg/l	—	4	—	ND	ND	ND
Benzo(k)fluoranthene	µg/l	0.049	4	0	ND	ND	ND
Benzoic Acid	µg/l	—	4	—	ND	ND	ND
Benzyl Alcohol (phenylmethar	µg/l	—	4	—	ND	ND	ND
bis(2-Chloroethoxy)methane	µg/l	—	4	—	ND	ND	ND
bis(2-Chloroethyl)ether	µg/l	1.4	4	0	ND	ND	ND
bis(2-Chloroisopropyl)ether	µg/l	170000	4	0	ND	ND	ND
bis(2-Ethylhexyl)phthalate	µg/l	5.9	4	0	ND	ND	ND
Butylbenzylphthalate	µg/l	5200	4	0	ND	ND	ND
Chrysene	µg/l	0.049	4	0	ND	ND	ND
Di-n-octylphthalate	µg/l	—	4	—	ND	ND	ND
Dibenzo(a,h)anthracene	µg/l	0.049	4	0	ND	ND	ND
Dibenzofuran	µg/l	—	4	—	ND	ND	ND
Di-n-butylphthalate	µg/l	12000	4	0	ND	ND	ND
Diethylphthalate	µg/l	120000	4	0	ND	ND	ND
Dimethylphthalate	µg/l	2900000	4	0	ND	ND	ND
Fluoranthene	µg/l	370	4	0	ND	ND	ND
Fluorene	µg/l	14000	4	0	ND	ND	ND
Hexachlorobenzene	µg/l	0.00077	4	0	ND	ND	ND
Hexachlorobutadiene	µg/l	50	4	0	ND	ND	ND
Hexachlorocyclopentadiene	µg/l	17000	4	0	ND	ND	ND
Hexachloroethane	µg/l	8.9	4	0	ND	ND	ND
Indeno(1,2,3-c,d)pyrene	µg/l	0.049	4	0	ND	ND	ND
Isophorone	µg/l	600	4	0	ND	ND	ND
N-Nitrosodimethylamine	µg/l	8.1	4	0	ND	ND	ND
N-Nitrosodiphenylamine	µg/l	16	4	0	ND	ND	ND
N-Nitrosodi-n-propylamine	µg/l	1.4	4	0	ND	ND	ND
Nitrobenzene	µg/l	1900	4	0	ND	ND	ND
Phenanthrene	µg/l	—	4	—	ND	ND	ND
Pyrene	µg/l	11000	4	0	ND	ND	ND
Phenol	µg/l	—	4	—	ND	ND	ND
Metals							
Dissolved Aluminum	µg/l	—	1	—	ND	ND	ND
Total Aluminum	µg/l	—	5	—	ND	3.1	0.74
Dissolved Antimony	µg/l	—	6	-	0.41	2	0.66
Total Antimony	µg/l	—	6	—	0.57	1.7	0.70
Dissolved Arsenic	µg/l	36	7	1	4.26	66	17.97
Total Arsenic	µg/l	—	7	—	2.1	59	15.18
Dissolved Barium	µg/l	—	2	—	35.5	73.1	54.30
Total Barium	µg/l	—	2	—	41.2	79.7	60.45
Dissolved Beryllium	µg/l	—	7	—	ND	ND	ND
Total Beryllium	µg/l	—	7	—	ND	ND	ND
Dissolved Boron	µg/l	—	1	—	4000	4000	4000
Total Boron	µg/l	—	5	—	3.9	4100	825
Dissolved Cadmium	µg/l	9.3	7	0	ND	0.11	0.03
Total Cadmium	µg/l	—	7	—	ND	0.49	0.11
Dissolved Chromium[b]	µg/l	50	7	0	ND	3.3	0.60
Total Chromium	µg/l	—	7	—	1.07	8.7	2.57
Total Chromium +6	µg/l	—	1	—	ND	ND	ND
Dissolved Cobalt	µg/l	—	2	—	ND	ND	ND
Total Cobalt	µg/l	—	2	—	ND	ND	ND
Dissolved Copper	µg/l	3.1	7	6	5.06	20	9.59
Total Copper	µg/l	—	7	—	22.3	50.6	18.20
Dissolved Iron	µg/l	—	1	—	ND	ND	ND
Total Iron	µg/l	—	5	—	0.19	180	37
Dissolved Lead	µg/l	8.1	7	0	1.2	2.91	0.65
Total Lead	µg/l	—	7	—	2.01	12	3.51
Dissolved Manganese	µg/l	—	1	—	ND	ND	ND
Total Manganese	µg/l	—	5	—	0.027	19	4.03
Dissolved Mercury	µg/l	—	7	—	ND	ND	ND
Total Mercury	µg/l	—	7	—	ND	ND	ND
Dissolved Molybdenum	µg/l	—	2	—	8.78	12	10
Total Molybdenum	µg/l	—	2	-	9.78	12.4	11.09
Dissolved Nickel	µg/l	8.2	7	1	2.27	8.7	3.29

Table 4-10

Summary of Water Quality Sampling
Dry Weather Data - Ballona Wetlands - Saltwater
After 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
Total Nickel	µg/l	—	7	—	3.69	13	4.43
Dissolved Selenium	µg/l	71	7	1	8.1	270	55.59
Total Selenium	µg/l	—	7	—	6.59	260	58.01
Dissolved Silver	µg/l	—	7	—	ND	0.12	0.02
Total Silver	µg/l		7	—	ND	0.31	0.04
Dissolved Thallium	µg/l	—	7	—	ND	0.75	0.19
Total Thallium	µg/l	—	7	—	ND	0.76	0.11
Dissolved Vanadium	µg/l		2	—	4.39	4.47	4.43
Total Vanadium	µg/l	—	2	—	5.1	8.24	6.67
Dissolved Zinc	µg/l	81	7	0	14	48	26.01
Total Zinc	µg/l		7	—	11	72.9	28.66
Pesticides							
4,4'-DDD[a]	µg/l	0.00084	4	0	ND	ND	ND
4,4'-DDE[a]	µg/l	0.00059	4	0	ND	ND	ND
4,4'-DDT	µg/l	0.001	4	0	ND	ND	ND
Aldrin[c]	µg/l	1.3	4	0	ND	ND	ND
alpha-BHC[a]	µg/l	0.013	4	2	ND	0.045	0.02
Chlordane	µg/l	0.004	4	0	ND	ND	ND
delta-BHC	µg/l	—	4	—	ND	ND	ND
Dieldrin	µg/l	0.0019	4	0	ND	ND	ND
Endosulfan I	µg/l	—	4	—	ND	ND	ND
Endosulfan II	µg/l	—	4	—	ND	ND	ND
Endosulfan Sulfate[a]	µg/l	240	4	0	ND	ND	ND
Endrin	µg/l	0.0023	4	0	ND	ND	ND
Endrin aldehyde[a]	µg/l	0.81	4	0	ND	ND	ND
gamma-BHC (lindane)	µg/l	—	4	—	ND	ND	ND
Heptachlor Epoxide	µg/l	0.0036	4	0	ND	ND	ND
Heptachlor	µg/l	0.0036	4	0	ND	ND	ND
Methoxychlor	µg/l	—	4	—	ND	ND	ND
PCB-1016	µg/l	0.03	4	0	ND	ND	ND
PCB-1221	µg/l	0.03	4	0	ND	ND	ND
PCB-1232	µg/l	0.03	4	0	ND	ND	ND
PCB-1242	µg/l	0.03	4	0	ND	ND	ND
PCB-1248	µg/l	0.03	4	0	ND	ND	ND
PCB-1254	µg/l	0.03	4	0	ND	ND	ND
PCB-1260	µg/l	0.03	4	0	ND	ND	ND
PCBs	µg/l	0.03	4	0	ND	ND	ND
Azinphos-Methyl	µg/l	—	4	—	ND	ND	ND
Bolstar	µg/l	—	4	—	ND	ND	ND
Chloropyrifos	µg/l		4	—	ND	ND	ND
Cuomafos	µg/l	—	4	—	ND	ND	ND
Demeton	µg/l	—	4	—	ND	ND	ND
Diazinon	µg/l	—	4	—	ND	ND	ND
Dichlorvos	µg/l	—	4	—	ND	ND	ND
Disulfoton	µg/l	—	4	—	ND	ND	ND
Ethoprop	µg/l	—	4	—	ND	ND	ND
Fensulfothion	µg/l	—	4	—	ND	ND	ND
Fenlion	µg/l	—	4	—	ND	ND	ND
Merphos	µg/l	—	4	—	ND	ND	ND
Methyl Parathion	µg/l	—	4	—	ND	ND	ND
Mevionphos (Phosdrin)	µg/l	—	4	—	ND	ND	ND

Table 4-10

Summary of Water Quality Sampling
Dry Weather Data - Ballona Wetlands - Saltwater
After 1991

Parameter	Units	CTR Chronic SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
Naled	µg/l	-	4	—	ND	ND	ND
Phorate	µg/l	—	4	—	ND	ND	ND
Prothiofos	µg/l	—	4	—	ND	ND	ND
Ronnel	µg/l	—	4	—	ND	ND	ND
Tetrachlorvinphos	µg/l	—	4	—	ND	ND	ND
Trichloronate	µg/l	—	4	—	ND	ND	ND

Notes:

— - No Criteria

NA - Not Analyzed

ND - Not Detected

1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.

2002 CDM = 2002, August 2. Camp Dresser & McKee. Ballona Wetlands Water Quality Sampling, Dry Weather, Playa Vista, California.

2000 GS = 2000. GeoSyntec Consultants. Data.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a]CTR Criteria are from human health organisms only criteria.

[b]Hexavalent chromium criteria is used for chromium.

[c]CTR criteria is from the acute saltwater criteria.

Table 4-11

Summary of Water Quality Sampling
Dry Weather Data - Freshwater Marsh
After 1991

Parameter	Units	CTR Chronic[a] FW Criteria	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
General							
Enterococci	MPN/100 ml	—	3	—	5.2	52.6	31
Fecal Coliforms	MPN/100 ml	—	3	—	2	8	5
Total Coliforms	MPN/100 ml	—	3	—	13	23	18
Bicarbonate Alkalinity (as $CaCO_3$)	mg/l	—	3	—	42	143	81
Carbonate Alkalinity (as $CaCO_3$)	mg/l	—	3	—	ND	30	17
Hydroxide Alkalinity (as $CaCO_3$)	mg/l	—	3	—	ND	ND	ND
Total Alkalinity (as $CaCO_3$)	mg/l	—	3	—	72	143	98
Total Dissolved Solids	mg/l	—	3	—	392	520	435
Total Suspended Solids	mg/l	—	6	—	ND	39	21
Total Settleable Solids	mg/l	—	4	—	ND	ND	ND
Turbidity	NTU	—	3	—	25.5	32.7	28
Salinity	g/l	—	3	—	19	27	23.3
Residual Chlorine	mg/l	—	6	—	ND	2	1
Total Cyanide	mg/l	—	3	—	ND	ND	ND
Sulfides	mg/l	—	3	—	ND	0.0038	0.0013
Hardness	mg/l	—	3	—	ND	0.034	0
pH	su	—	6	—	156	800	453.3
Total Phenols	mg/l	—	3	—	8.16	8.26	8
BOD	mg/l	—	3	—	ND	ND	ND
MBAS	mg/l	—	6	—	ND	11	2.50
TPH-Volatile	mg/l	—	3	—	32	34	33
Oil and Grease	mg/l	—	3	—	0.19	0.22	0.20
TOC	mg/l	—	3	—	ND	ND	ND
Chemical Oxygen Demand	mg/l	—	3	—	ND	ND	ND
TPH-Extractable	mg/l	—	6	—	ND	22	10
TPH-Recoverable (TRPH)	mg/l	—	6	—	ND	0.44	0
Ammonia	mg/l	—	3	—	0.02	0.43	0.16
Nitrate	mg/l	—	3	—	ND	ND	ND
Nitrite	mg/l	—	3	—	ND	ND	ND
Orthophosphate	mg/l	—	3	—	ND	ND	ND
TKN	mg/l	—	3	—	0.37	0.72	0.59
Total Phosphorus	mg/l	—	3	—	0.15	0.64	0.41
Dissolved Sodium	mg/l	—	3	—	75.9	76.8	76
Total Sodium	mg/l	—	3	—	89.5	106	95
VOCs							
1,1,1,2-Tetrachloroethane	µg/l	—	6	—	ND	ND	ND
1,1,1-Trichloroethane	µg/l	—	6	—	ND	ND	ND
[c] 1,1,2,2-Tetrachloroethane	µg/l	11	6	0	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	—	3	—	ND	ND	ND
[c] 1,1,2-Trichloroethane	µg/l	42	6	0	ND	ND	ND
1,1-Dichloroethane	µg/l	—	6	—	ND	ND	ND
[c] 1,1-Dichloroethene	µg/l	3.2	6	0	ND	ND	ND
1,1-Dichloropropene	µg/l	—	6	—	ND	ND	ND
1,2,3-Trichlorobenzene	µg/l	—	6	—	ND	ND	ND
1,2,3-Trichloropropane	µg/l	—	3	—	ND	ND	ND
1,2,4-Trichlorobenzene	µg/l	—	6	—	ND	ND	ND
1,2,4-Trimethylbenzene	µg/l	—	6	—	ND	ND	ND
1,2-Dibromo-3-chloropropane	µg/l	—	6	—	ND	ND	ND
1,2-Dibromoethane	µg/l	—	6	—	ND	ND	ND
[c] 1,2-Dichloroethane	µg/l	99	6	0	ND	ND	ND
[c] 1,2-Dichlorobenzene	µg/l	1700	6	0	ND	ND	ND
[c] 1,2-Dichloropropane	µg/l	39	6	0	ND	ND	ND
[c] 1,3-Dichlorobenzene	µg/l	2600	6	0	ND	ND	ND
1,3-Dichloropropane	µg/l	—	6	—	ND	ND	ND
1,3,5-Trimethylbenzene	µg/l	—	6	—	ND	ND	ND
[c] 1,4-Dichlorobenzene	µg/l	2600	6	0	ND	ND	ND
2,2-Dichloropropane	µg/l	—	6	—	ND	ND	ND
2-Butanone	µg/l	—	3	—	ND	ND	ND
2-Chloroethyl-vinyl-ether	µg/l	—	6	—	ND	ND	ND
2-Chlorotoluene	µg/l	—	6	—	ND	ND	ND
2-Hexanone	µg/l	—	3	—	ND	ND	ND
4-Chlorotoluene	µg/l	—	6	—	ND	ND	ND
Acetone	µg/l	—	3	—	ND	ND	ND
[c] Acrolein	µg/l	780	3	0	ND	ND	ND
[c] Acrylonitrile	µg/l	0.66	3	0	ND	ND	ND
[c] Bromodichloromethane	µg/l	46	6	0	ND	ND	ND
Bromochloromethane	µg/l	—	3	—	ND	ND	ND
Bromobenzene	µg/l	—	6	—	ND	ND	ND
Bromomethane	µg/l	—	6	—	ND	ND	ND

Table 4-11

Summary of Water Quality Sampling
Dry Weather Data - Freshwater Marsh
After 1991

Parameter	Units	CTR Chronic[a] FW Criteria	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
[c] Benzene	µg/l	71	6	0	ND	ND	ND
[c] Bromoform	µg/l	360	6	0	ND	ND	ND
[c] Chlorodibromomethane	µg/l	34	5	0	ND	ND	ND
[c] Chlorobenzene	µg/l	21000	6	0	ND	ND	ND
[c] Carbon Tetrachloride	µg/l	4.4	6	0	ND	ND	ND
Chloroethane	µg/l	—	6	—	ND	ND	ND
Chloroform	µg/l	—	6	—	ND	ND	ND
Chloromethane	µg/l	—	6	—	ND	ND	ND
Carbon Disulfide	µg/l	—	3	—	ND	ND	ND
Dibromomethane	µg/l	—	6	—	ND	ND	ND
Dichlorodifluoromethane	µg/l	—	6	—	ND	ND	ND
[c] Ethylbenzene	µg/l	29000	6	0	ND	ND	ND
Hexachlorobutadiene	µg/l	—	6	—	ND	ND	ND
Isopropylbenzene	µg/l	—	6	—	ND	ND	ND
Methyl isobutyl ketone	µg/l	—	3	—	ND	ND	ND
m,p-Xylene	µg/l	—	6	—	ND	ND	ND
Methyl-tert-butyl-ether	µg/l	—	3	—	ND	ND	ND
[c] Methylene Chloride	µg/l	1600	6	0	ND	ND	ND
Napthalene	µg/l	—	6	—	ND	ND	ND
n-Butylbenzene	µg/l	—	6	—	ND	ND	ND
n-Propylbenzene	µg/l	—	6	—	ND	ND	ND
p-Isopropyltoluene	µg/l	—	6	—	ND	ND	ND
o-Xylene	µg/l		6	—	ND	ND	ND
sec-Butylbenzene	µg/l	—	6	—	ND	ND	ND
tert-Butylbenzene	µg/l	—	6	—	ND	ND	ND
Styrene	µg/l	—	6	—	ND	ND	ND
[c] Trichloroethene	µg/l	81	6	0	ND	ND	ND
Trichlorofluoromethane	µg/l	—	6	—	ND	ND	ND
[c] Toluene	µg/l	200,000	6	0	ND	0.25	0.10
[c] Tetrachloroethene	µg/l	8.85	6	0	ND	ND	ND
Vinyl Acetate	µg/l	—	3	—	ND	ND	ND
Vinyl Chloride	µg/l	525	6	0	ND	ND	ND
Total Xylenes	µg/l		3	—	ND	ND	ND
cis-1,2-Dichloroethene	µg/l	—	6	—	ND	ND	ND
cis-1,3-Dichloropropene	µg/l	—	6	—	ND	ND	ND
[c] trans-1,2-Dichloroethene	µg/l	140000	6	0	ND	ND	ND
trans-1,3-Dichloropropene	µg/l	—	6	—	ND	ND	ND
SVOCs							
[c] Acenaphthene	µg/l	2700	3	0	ND	ND	ND
Acenaphthylene	µg/l	—	3	—	ND	ND	ND
[c] Anthracene	µg/l	110000	3	0	ND	ND	ND
[c] Benzo(a)anthracene	µg/l	0.049	3	0	ND	ND	ND
[c] Benzo(a)pyrene	µg/l	0.049	3	0	ND	ND	ND
[c] Benzo(b)fluoranthene	µg/l	0.049	3	0	ND	ND	ND
Benzo(g,h,i)perylene	µg/l	—	3	—	ND	ND	ND
[c] Benzo(k)fluoranthene	µg/l	0.049	3	0	ND	ND	ND
[c] Chrysene	µg/l	0.049	3	0	ND	ND	ND
[c] Dibenzo(a,h)anthracene	µg/l	0.049	3	0	ND	ND	ND
[c] Fluoranthene	µg/l	370	3	0	ND	ND	ND
[c] Fluorene	µg/l	14000	3	0	ND	ND	ND
[c] Indeno(1,2,3-c,d)pyrene	µg/l	0.049	1	0	ND	ND	ND
Naphthalene	µg/l	—	1	0	ND	ND	ND
[c] Phenanthrene	µg/l	—	3	—	ND	ND	ND
[c] Pyrene	µg/l	11000	3	0	ND	ND	ND
Metals[b]							
Dissolved Antimony	µg/l	—	3	—	1.1	1.6	1.30
Total Antimony	µg/l	—	6	—	1	1.6	1.17
Dissolved Arsenic	µg/l	150	6	0	6	8.4	7.07
Total Arsenic	µg/l	—	9	—	6.1	11	8.57
Dissolved Beryllium	µg/l	—	3	—	ND	ND	ND
Total Beryllium	µg/l	—	6	—	ND	ND	ND
Dissolved Cadmium	µg/l	6.2	6	0	ND	0.2	0.09
Total Cadmium	µg/l	—	9	—	ND	0.2	0.13
Dissolved Chromium	µg/l	180	6	0	ND	1.2	0.56
Total Chromium	µg/l	—	9	—	0.42	1.7	0.89
Dissolved Chromium (VI)	µg/l	11	8	0	ND	0.22	0.05
Total Chromium (VI)	µg/l	—	1	0	0.19	0.19	0.19
Dissolved Copper	µg/l	29	6	0	3.2	6.7	5.03
Total Copper	µg/l	—	9	—	3.5	16	9.37

Table 4-11

Summary of Water Quality Sampling
Dry Weather Data - Freshwater Marsh
After 1991

Parameter	Units	CTR Chronic[a] FW Criteria	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
Dissolved Iron	µg/l	—	3	—	0.06	0.13	0.09
Total Iron	µg/l	—	3	—	0.09	0.67	0.41
Dissolved Lead	µg/l	11	6	0	ND	2.9	0.70
Total Lead	µg/l	—	9	—	ND	1.8	0.56
Dissolved Manganese	µg/l	—	3	—	14	35	22.00
Total Manganese	µg/l	—	3	—	20	310	119.00
Dissolved Mercury	µg/l	—	6	—	ND	ND	ND
Total Mercury	µg/l	—	9	—	ND	ND	ND
Dissolved Nickel	µg/l	170	6	0	1.9	3.8	2.88
Total Nickel	µg/l	—	9	—	2	5.6	3.76
Dissolved Selenium	µg/l	—	6	0	ND	ND	ND
Total Selenium	µg/l	5	9	0	ND	ND	ND
Dissolved Silver	µg/l	—	6	—	ND	ND	ND
Total Silver	µg/l	—	9	—	ND	0.2	0.02
Dissolved Thallium	µg/l	—	3	—	ND	ND	ND
Total Thallium	µg/l	—	6	—	ND	ND	ND
Dissolved Zinc	µg/l	81	6	0	1.2	28	12.25
Total Zinc	µg/l	—	9	—	1.7	16	9.78
Pesticides							
[c] P,P'-DDD	µg/l	0.0084	3	0	ND	ND	ND
[c] P,P'-DDE	µg/l	0.0059	3	0	ND	ND	ND
P,P'-DDT	µg/l	0.001	3	0	ND	ND	ND
[d] Aldrin	µg/l	3	3	0	ND	ND	ND
[c] alpha-BHC	µg/l	0.013	3	0	ND	ND	ND
[c] beta-BHC	µg/l	0.046	3	0	ND	ND	ND
delta-BHC	µg/l	—	3	—	ND	ND	ND
alpha-Chlordane	µg/l		3	—	ND	ND	ND
Dieldrin	µg/l	0.056	3	0	ND	ND	ND
Endosulfan I	µg/l	0.056	3	0	ND	ND	ND
Endosulfan II	µg/l	0.056	3	0	ND	ND	ND
[c] Endosulfan Sulfate	µg/l	240	3	0	ND	ND	ND
Endrin	µg/l	0.036	1	0	ND	ND	ND
[c] Endrin Aldehyde	µg/l	0.81	3	0	ND	ND	ND
Endrin Ketone	µg/l	—	3	0	ND	ND	ND
[d] gamma-BHC (lindane)	µg/l	0.95	3	0	ND	ND	ND
gamma-Chlordane	µg/l	—	3	—	ND	ND	ND
Heptachlor Epoxide	µg/l	0.52	3	0	ND	ND	ND
Heptachlor	µg/l	0.52	3	0	ND	ND	ND
Methoxychlor	µg/l	—	3	—	ND	ND	ND
PCB-1016	µg/l	0.014	3	0	ND	ND	ND
PCB-1221	µg/l	0.014	3	0	ND	ND	ND
PCB-1232	µg/l	0.014	3	0	ND	ND	ND
PCB-1242	µg/l	0.014	3	0	ND	ND	ND
PCB-1248	µg/l	0.014	3	0	ND	ND	ND
PCB-1254	µg/l	0.014	1	0	ND	ND	ND
PCB-1260	µg/l	0.014	2	0	ND	ND	ND
PCBs	µg/l	0.014	2	0	ND	ND	ND

Notes:

— - No Criteria

NA - Not Analyzed

ND - Not Detected

2002 CDM = 2002, April 25 and June 28. Camp Dresser & McKee. Freshwater Marsh Water Quality Sampling, Dry Weather, Playa Vista, California.

Final CTR FW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a] Freshwater chronic CTR criteria are used here because the Freshwater Marsh is not a saltwater habitat, the biology of the waterbody is dominated by freshwater aquatic life, and the Marsh is physically separated from the saltwater Ballona Wetlands by a berm; therefore the freshwater criteria are more appropriate.

[b] CTR Criteria was calculated using the mean hardness for all freshwater dry weather samples collected in the Freshwater Marsh. Since the mean hardness was 453 mg/l (greater than the maximum set by the CTR), a hardness of 400 mg/l was used.

[c] CTR criteria shown are for the protection of human health due to the consumption of aquatic organisms living in waters with carcinogenic compounds. CTR does not designate freshwater chronic criteria for these constituents.

[d] CTR criteria shown are the freshwater acute criteria for the protection of aquatic life. CTR does not designate freshwater chronic criteria for these constituents.

Table 4-12

Summary of Water Quality Sampling
Wet Weather Data - Santa Monica Bay
After 1991

Parameter	Units	CTR Acute SW Criteria	COP Objectives	Total Number of Samples	Total Number of Samples Over Objectives	ABCL 1996-1997 Minimum	ABCL 1996-1997 Maximum	ABCL 1996-1997 Mean
General								
Total Coliform	MPN/100ml	-	1000	2	0	ND	20	10
Fecal Coliform	MPN/100ml	—	200	2	0	ND	20	10
Enterococcus	Col's/100ml	—	—	2	—	ND	ND	ND
Salinity	‰	—	—	5	—	30	33	32.62
Dissolved Oxygen	mg/l	—	—	5	- -	5.93	6.55	6.36
pH	•	—	—	5	—	8.25	8.35	8.30
NH3+NH4	mg/l	—	—	6	—	0.124	1.33	7.27
BOD	mg/l	—	—	6	—	2.2	3.4	2.72

Notes:

- No Criteria

NA - Not Analyzed

ND - Not Detected

1996-1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.

COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

Table 4-13

Summary of Water Quality Sampling
Wet Weather Data - Ballona Channel - Saltwater
After 1991

Parameter	Units	CTR Acute SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data Minimum	All Data Maximum	All Data Mean
General							
Oil and Grease	mg/l	—	13	—	ND	18	5.4
Total Coliform	MPN/100ml	—	1	—	ND	ND	ND
Fecal Coliform	MPN/100ml	—	1	—	ND	ND	ND
Enterococcus	MPN/100ml	—	1	—	ND	ND	ND
Tributyltin	µg/L	—	6	—	ND	0.012	0.0045
Bicarbonate	mg/l	—	5	—	140	171	156
Carbonate	mg/l	—	5	—	ND	ND	ND
Hardness	mg/l	—	6	—	54	1800	487
Alkalinity	mg/l	—	6	—	30	92	49
Magnesium	mg/l	—	5	—	278	624	354
Potassium	mg/l	—	5		96	272	134
Chloride	mg/l	—	11	—	60	12800	4753
Salinity	‰	—	2	—	26.5	33.5	30
Sulfate	mg/l	—	11	—	22	1620	527
Dissolved Oxygen	mg/l	—	2	—	6.10	6.72	6.41
Immediate Oxygen Demand	mg/l	—	5	—	ND	1.2	1.0
BOD	mg/l	—	10		3.2	183	70
COD	mg/l	—	5	—	105	170	128
Total Dissolved Solids	mg/l	—	13	—	98	22500	5851
Volatile Solids	%	—	5		0.16	0.41	0.23
Total Suspended Solids	mg/l	—	2	—	89	120	105
Volatile Suspended Solids	mg/l	—	6	—	ND	47	25
Total Organic Carbon	mg/l	—	5	—	6	21	17
Total Phosphorus	mg/l	—	13	—	0.18	2.9	1.0
Orthophosphate	mg/l	—	8	—	ND	0.4	0.13
Ammonia	mg/l	—	6	—	ND	2.4	1.3
Ammonia-N	mg/l	—	2	—	ND	ND	ND
NH3 + NH4	mg/l	—	2	—	0.812	0.947	0.879
Nitrate	mg/l	—	4	—	ND	22	12
Organic Nitrogen	mg/l	—	5		1.8	4	3.0
TKN	mg/l	—	8	—	0.18	6.4	2.3
Specific Conductance	µhos/cm	—	8	—	390	78000	20860
MBAS	mg/l	—	6	—	0.051	0.43	0
Bromide	mg/l	—	0	—	ND	ND	ND
pH	su	-	10	—	7.01	8.43	7.44
*VOCs**							
Chloromethane	µg/l	—	5	—	ND	ND	ND
Bromomethane	µg/l	—	5	—	ND	ND	ND
Dichlorodifluoromethane	µg/l	—	5	—	ND	ND	ND
Vinyl Chloride	µg/l	525	5	0	ND	ND	ND
Chloroethane	µg/l	—	5	—	ND	ND	ND
Methylene Chloride	µg/l	1600	5	0	ND	ND	ND
Trichlorofluoromenthane	µg/l	—	5	—	ND	ND	ND
1,1-Dichloroethene	µg/l	—	5	—	ND	ND	ND
1,1-Dichloroethane	µg/l	—	5	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/l	—	5	—	ND	ND	ND
Chloroform	µg/l	470	5	0	ND	ND	ND
1,2-Dichloroethane	µg/l	99	5	0	ND	ND	ND
1,1,1-Trichloroethane	µg/l	—	5	—	ND	ND	ND
Carbon Tetrachloride	µg/l	4.4	5	0	ND	ND	ND
Bromodichloromethane	µg/l	—	5	—	ND	ND	ND
1,2-Dichloropropane	µg/l	39	5	0	ND	ND	ND
trans-1,3-Dichloropropene	µg/l	—	5	—	ND	ND	ND
Trichloroethene	µg/l	—	5	—	ND	ND	ND
Dibromochloromethane	µg/l	—	5	—	ND	ND	ND
1,1,2-Trichloroethane	µg/l	42	5	0	ND	ND	ND
cis-1,3-Dichloropropene	µg/l	—	5	—	ND	ND	ND
2-Chloroethylvinyl ether	µg/l	—	5	—	ND	ND	ND
Bromoform	µg/l	360	5	0	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/l	11	5	0	ND	ND	ND
Tetrachloroethene	µg/l	—	11	—	ND	46	5.8
Chlorobenzene	µg/l	21000	5	0	ND	ND	ND
1,3-Dichlorobenzene	µg/l	2600	5	0	ND	ND	ND
1,2-Dichlorobenzene	µg/l	17000	5	0	ND	ND	ND
1,4-Dichlorobenzene	µg/l	2600	5	0	ND	ND	ND
Benzene	µg/l	71	5	0	ND	ND	ND
Ethylbenzene	µg/l	29000	5	0	ND	ND	ND
Toluene	µg/l	200000	11	0	ND	21	2.7
Total Xylenes	µg/l	—	5	—	ND	ND	ND
*Semi-Volatile Organics**							
Naphthalene	µg/l	--	6	—	ND	ND	ND
1,2,3-Trichloropropane	µg/l	—	6	—	ND	ND	ND
4-Chloro-3-methylphenol	µg/l	—	0	—	ND	ND	ND

Table 4-13

Summary of Water Quality Sampling
Wet Weather Data - Ballona Channel - Saltwater
After 1991

Parameter	Units	CTR Acute SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
2-Chlorophenol	µg/l	400	0	0	ND	ND	ND
2,4-Dichlorophenol	µg/l	790	0	0	ND	ND	ND
2,4-Dimethylphenol	µg/l	2300	0	0	ND	ND	ND
Metals							
Total Antimony	µg/l	—	7	—	ND	ND	ND
Total Arsenic	µg/l	—	7	.	ND	ND	ND
Dissolved Arsenic	µg/l	69	5	0	ND	ND	ND
Total Beryllium	µg/l	—	7	—	ND	ND	ND
Total Cadmium	µg/l	—	7	—	ND	ND	ND
Dissolved Cadmium	µg/l	42	5	0	ND	ND	ND
Total Chromium	µg/l	—	7		ND	ND	ND
Dissolved Chromium[b]	µg/l	1100	5	0	ND	ND	ND
Total Copper	µg/l	—	7	.	ND	30	10
Dissolved Copper	µg/l	4.8	5	1	ND	13	10
Total Iron	µg/l	—	0	—	ND	ND	ND
Dissolved Iron	µg/l	—	5	—	190	880	640
Total Lead	µg/l	—	7	—	ND	ND	ND
Dissolved Lead	µg/l	210	5	0	ND	ND	ND
Total Manganese	µg/l	—	0	—	ND	ND	ND
Dissolved Manganese	µg/l	—	5	—	20	130	106
Total Mercury	µg/l	—	7	—	ND	ND	ND
Dissolved Mercury	µg/l	—	5	—	ND	ND	ND
Total Nickel	µg/l	—	7	—	ND	13	1.9
Dissolved Nickel	µg/l	74	5	0	ND	ND	ND
Total Selenium	µg/l	—	7	—	ND	ND	ND
Total Silver	µg/l	—	7	—	ND	ND	ND
Total Thallium	µg/l	—	7	—	ND	ND	ND
Total Zinc	µg/l	—	8	—	0.015	123	49
Dissolved Zinc	µg/l	90	5	4	ND	100	10
Pesticides and PCBs							
Aldrin	µg/l	1.3	5	0	ND	ND	ND
alpha-BHC	µg/l	0.013	5	0	ND	ND	ND
beta-BHC	µg/l	0.046	5	0	ND	ND	ND
Lindane	µg/l	0.16	5	0	ND	ND	ND
Chlordane	µg/l	0.09	5	0	ND	ND	ND
Dieldrin	µg/l	0.71	5	0	ND	ND	ND
Endrin	µg/l	0.037	5	0	ND	ND	ND
Toxaphene	µg/l	0.21	5	0	ND	ND	ND
Heptachlor	µg/l	0.053	5	0	ND	ND	ND
Heptachlor Epoxide	µg/l	0.053	5	0	ND	ND	ND
O,P'-DDT	µg/l	—	5	—	ND	ND	ND
P,P'-DDT	µg/l	0.13	5	0	ND	ND	ND
O,P'-DDD	µg/l	—	5	—	ND	ND	ND
P,P'-DDD	µg/l	0.00084	5	0	ND	ND	ND
P,P'-DDE	µg/l	0.00059	5	0	ND	ND	ND
Total Pesticides	µg/l	—	5	—	ND	ND	ND
PCB-1016[c]	µg/l	0.03	5	0	ND	ND	ND
PCB-1221[c]	µg/l	0.03	5	0	ND	ND	ND
PCB-1232[c]	µg/l	0.03	5	0	ND	ND	ND
PCB-1242[c]	µg/l	0.03	5	0	ND	ND	ND
PCB-1248[c]	µg/l	0.03	5	0	ND	ND	ND
PCB-1254[c]	µg/l	0.03	5	0	ND	ND	ND
PCB-1260[c]	µg/l	0.03	5	0	ND	ND	ND
Total Chlorinated Hydrocarbons Detected	µg/l	—	5	—	ND	ND	ND

Notes:

— - No Criteria

NA - Not Analyzed

ND - Not Detected

1992 Chambers = 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel. The Chambers 1993 Report does not indicate whether the metals values reported are dissolved or total. Here they are assumed to represent dissolved metals concentrations.

1995-1996 CDM = 1996, August 14. Camp Dresser & McKee. Ballona Creek Water and Sediment Quality Sediment Quality Report, 1995/1996, Wet Weather Season, Playa Vista, California.

1996-1998 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a]CTR criteria are from human health organisms only criteria.

[b] Criteria for hexavalent chromium was used for chromium

[c]CTR criteria is from the chronic saltwater criteria.

Table 4-14

Summary of Water Quality Sampling
Wet Weather Data - Ballona Wetlands - Saltwater
After 1991

Parameter	Units	CTR Acute SW Criteria	Total Number of Samples	Total Number of Samples Over Criteria	All Data		
					Minimum	Maximum	Mean
General							
Hydrogen Sulfide	mg/L	—	1	—	0.1	0.1	0.1
Total Hardness	mg/L	---	2	—	346	1980	1163
pH	--	—	2	—	8.02	8.43	8.225
Specific Conductance	umhos/cm	—	2	—	1310	20500	10905
TOC	mg/L	-	2	—	5.6	6.6	6.1
Total Suspended Solids	mg/L	—	2	---	73	187	130
Turbidity	mg/L	—	2	—	35	141	88
VOCs							
MTBE	µg/L	—	1	—	1.1	1.1	1.1
Metals							
Total Antimony	µg/L	—	1	—	1	1	1
Dissolved Arsenic	µg/L	69	2	0	3.02	6.79	4.905
Total Arsenic	µg/L	—	2	—	4.73	7.06	5.895
Dissolved Barium	µg/L		2	—	18.6	43	30.8
Total Barium	µg/L	—	2	---	31.8	100	65.9
Dissolved Chromium [a]	µg/L	1100	2	0	2.18	4.37	3.275
Total Chromium	µg/L	—	2	—	3.3	11.7	7.5
Total Cobalt	µg/L	—	2	—	1.45	3.59	2.52
Dissolved Copper	µg/L	4.8	2	1	3.25	7.19	5.22
Total Copper	µg/L	—	2	—	13.5	24.6	19.05
Total Lead	µg/L	221	2	0	12.9	17.6	15.25
Dissolved Molybdenum	µg/L	—	2	---	4.19	5.1	4.645
Total Molybdenum	µg/L	—	2	—	3.36	5.2	4.28
Dissolved Nickel	µg/L	74	2	0	2.23	2.74	2.485
Total Nickel	µg/L	—	2	—	4.27	9.94	7.105
Dissolved Selenium	µg/L	290	2	0	4.78	23.3	14.04
Total Selenium	µg/L	—	2	---	2.43	21	11.715
Dissolved Vanadium	µg/L	—	2	—	3.28	5.2	4.24
Total Vanadium	µg/L	—	2	—	7.62	22.2	14.91
Dissolved Zinc	µg/L	90	2	0	14.6	19.9	17.25
Total Zinc	µg/L	---	2	—	29.2	131	80.1

Notes:

--- No Criteria
NA - Not Analyzed
ND - Not Detected
2000 GS = 2000. GeoSyntec Consultants. Data.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a]Hexavalent chromium criteria is used for chromium.

Table 4-15

Summary of Sediment Quality Sampling Data
Santa Monica Bay
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs ª 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
General							
THPH	mg/kg	—	13	—	62.4	874	323
Oil and Grease	mg/kg	—	4	—	120	1510	620
Tributyltin	mg/kg	—	17	—	ND	0.03	0.006
Dibutyltin	mg/kg	—	13	—	ND	0.0138	0.0034
Monobutyltin	mg/kg	—	13	—	ND	0.0146	0.0026
Hydrogen Sulfide	mg/kg	—	1	—	0.79	0.79	0.79
Moisture	%	—	2	—	27	36.8	32
Spec. Cond.	mmhos/cm	—	2	—	15	63	27
Alkalinity as CaCO3	mg/kg	—	2	—	360	1100	730
Hardness as CaCO3	mg/kg	—	2	—	2500	3300	2900
Total Alkalinity	mg/kg	—	1	—	3310	3310	3310
Total Dissolved Solids	mg/kg	—	2	—	16000	22000	19000
Solids (%) (Dry Wt.)	%	—	13	—	60	83.2	75
Total Sulfides	mg/kg	—	15	—	13.8	1560	585
Water Soluble Sulfides	mg/kg	—	13	—	ND	0.2	0.2
Volatile Solids	mg/kg	—	3	—	8000	40,000	21467
TOC	mg/kg	—	16	—	2600	27600	9388
Immediate Oxygen Demand	mg/kg	—	3	—	ND	9500	3600.00
Chemical Oxygen Demand	mg/kg	—	3	—	4100	31000	14167
Orthophosphate	mg/kg	—	2	—	14	26	20
Total Phosphorus	mg/kg	—	1	—	2.1	2.1	2.1
Organic Nitrogen	mg/kg	—	3	—	177	930	446
Nitrogen	mg/kg		2	—	240	940	590
Nitrate	mg/kg	—	2	—	ND	40	10
Calcium	mg/kg	—	2	—	14,600	18,100	16,350
Chloride	mg/kg	—	3	—	5,350	23,400	11,833
Fluoride	mg/kg	—	2	—	ND	ND	ND
Magnesium	mg/kg	—	1	—	2,120	2,120	2,120
Potassium	mg/kg	—	3	—	959	3,290	1,906
Sulfate	mg/kg	—	3	—	790	2,910	1,558
Sodium	mg/kg	-	2	—	4,410	8,110	6,260
VOCs							
Chloromethane	µg/kg	—	1	—	ND	ND	ND
Bromomethane	µg/kg	—	1	—	ND	ND	ND
Dichlorodifluoromethane	µg/kg	—	1	—	ND	ND	ND
Vinyl Chloride	µg/kg	—	1	—	ND	ND	ND
Chloroethane	µg/kg	—	1	—	ND	ND	ND
Methylene Chloride	µg/kg	—	1	—	ND	ND	ND
Trichlorofluoromenthane	µg/kg	—	1	—	ND	ND	ND
1,1-Dichloroethene	µg/kg	—	1	—	ND	ND	ND
1,1-Dichloroethane	µg/kg	—	1	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/kg	—	1	—	ND	ND	ND
Chloroform	µg/kg	—	1	—	13	13	13
1,2-Dichloroethane	µg/kg	—	1	—	ND	ND	ND
1,1,1-Trichloroethane	µg/kg	—	1	—	ND	ND	ND
Carbon Tetrachloride	µg/kg	—	1	—	ND	ND	ND
Bromodichloromethane	µg/kg	—	1	—	ND	ND	ND
1,2-Dichloropropane	µg/kg	—	1	—	ND	ND	ND
trans-1,3-Dichloropropene	µg/kg	—	1	—	ND	ND	ND
ᵇ Trichloroethene	µg/kg	41	1	0	ND	ND	ND
Dibromochloromethane	µg/kg	—	1	—	ND	ND	ND
1,1,2-Trichloroethane	µg/kg	—	1	—	ND	ND	ND
cis-1,3-Dichloropropene	µg/kg	—	1	—	ND	ND	ND
2-Chloroethylvinylether	µg/kg	—	1	—	ND	ND	ND
Bromoform	µg/kg	—	1	—	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/kg	—	1	—	ND	ND	ND
ᵇ Tetrachloroethene	µg/kg	57	1	0	ND	ND	ND
Benzene	µg/kg	—	1	—	ND	ND	ND
Chlorobenzene	µg/kg	—	1	—	ND	ND	ND
1,2-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
1,3-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
1,4-Dichlorobenzene	µg/kg	—	1	—	ND	ND	ND
ᵇ Ethylbenzene	µg/kg	4	1	0	ND	ND	ND
Toluene	µg/kg	—	1	—	ND	ND	ND
ᵇ Total Xylenes	µg/kg	4	1	0	ND	ND	ND
SVOCs							
bis(2-Ethylhexyl)phthalate	µg/kg	—	13	—	ND	ND	ND
ᵇ Butylbenzylphthalate	µg/kg	63	13	6	ND	2,500	292
ᵇ Di-n-butylphthalate	µg/kg	58	13	0	ND	ND	ND
ᵇ Diethylphthalate	µg/kg	6	13	0	ND	ND	ND

Table 4-15

Summary of Sediment Quality Sampling Data
Santa Monica Bay
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
[b] Dimethylphthalate	µg/kg	6	13	1	ND	1,390	107
[b] Di-n-octylphthalate	µg/kg	61	13	0	ND	ND	ND
4-chloro-3-methlyphenol	µg/kg	—	13	—	ND	ND	ND
[b] 4-methlyphenol	µg/kg	100	13	0	ND	ND	ND
[b] 2-chlorophenol	µg/kg	8	13	0	ND	ND	ND
[b] 2,4-dichlorophenol	µg/kg	5	13	0	ND	ND	ND
[b] 2,4-dimethlyphenol	µg/kg	18	13	0	ND	ND	ND
2,4-dinitrophenol	µg/kg	—	13	—	ND	ND	ND
2-methyl-4,6-dinitrophenol	µg/kg	—	13	—	ND	ND	ND
2-nitrophenol	µg/kg	—	13	—	ND	ND	ND
4-nitrophenol	µg/kg	—	13	—	ND	ND	ND
[b] Pentachlorophenol	µg/kg	17	13	0	ND	ND	ND
[b] Phenol	µg/kg	130	13	0	ND	ND	ND
[b] 2,4,6-trichlorophenol	µg/kg	6	13	0	ND	ND	ND
Napthalene	µg/kg	390.64	13	0	ND	ND	ND
Acenaphthylene	µg/kg	127.87	13	0	ND	ND	ND
Acenaphthene	µg/kg	88.9	13	0	ND	ND	ND
Fluorene	µg/kg	144.35	13	0	ND	ND	ND
Phenanthrene	µg/kg	543.53	13	1	ND	933	131
Anthracene	µg/kg	245	13	1	ND	1,430	128
Fluoranthene	µg/kg	1493.54	13	0	ND	1,310	282
Pyrene	µg/kg	1397.6	13	1	ND	2,030	420
Benzo(a)anthracene	µg/kg	692.53	13	1	ND	1,900	228
Chrysene	µg/kg	845.98	13	0	ND	726	176
Benzo(b)anthracene	µg/kg	—	13	—	ND	1,030	152
[b] Benzo(k)fluoranthene	µg/kg	1800	13	0	ND	695	161
Benzo(a)pyrene	µg/kg	763.22	13	1	ND	792	139
Dibenzo(a,h)anthracene	µg/kg	134.61	13	1	ND	843	65
[b] Indeno(1,2,3-c,d)pyrene	µg/kg	600	13	0	ND	ND	ND
Benzo(g,h,i)perylene	µg/kg	670	13	0	ND	ND	ND
Metals							
Arsenic	mg/kg	41.6	17	0	1.2	5.6	2.5
[b] Barium	mg/kg	48	15	5	14.5	76.3	39
Boron	mg/kg	—	2	—	5	17.7	11
Beryllium	mg/kg	—	13	—	0.101	0.32	0.17
Cadmium	mg/kg	4.21	17	0	ND	0.794	0.44
Chromium	mg/kg	160.4	17	0	7.9	37.7	19
[b] Cobalt	mg/kg	10	13	1	2.51	13.6	4.7
Copper	mg/kg	108.2	17	0	5.3	41.5	19
Iron	mg/kg	—	4	—	ND	21,700	10,345
Lead	mg/kg	112.18	17	4	22.6	298	88
[b] Manganese	mg/kg	260	16	0	ND	207	26
Mercury	mg/kg	0.696	17	0	ND	0.22	0.10
Molybdenum	mg/kg	—	13	—	0.39	2.78	1.04
Nickel	mg/kg	42.8	17	0	4.82	20.5	11
[b] Selenium	mg/kg	1	7	0	ND	0.6	0.13
Silver	mg/kg	1.77	11	0	ND	1.69	0.37
[b] Vanadium	mg/kg	57	13	0	12.9	35.8	21
Zinc	mg/kg	271	17	0	31.2	243	104
Pesticides and PCBs							
[b] Aldrin	µg/kg	9.5	14	0	ND	ND	ND
alpha-BHC	µg/kg	—	14	—	ND	ND	ND
beta-BHC	µg/kg	—	14	—	ND	ND	ND
Lindane	µg/kg	0.99	14	0	ND	ND	ND
Alpha-Chlordane	µg/l	—	2	—	ND	6	3.0
Gamma-Chlordane	µg/l	—	2	—	2.7	6	4.4
Chlordane	µg/kg	4.79	15	2	ND	56.7	52
Dieldrin	µg/kg	4.3	14	0	ND	ND	ND
Endrin	µg/kg	—	14	—	ND	ND	ND
Endrin Aldehyde	µg/l	—	2	—	ND	ND	ND
Toxaphene	µg/kg	—	14	—	ND	ND	ND
[b] Heptachlor	µg/kg	0.3	14	0	ND	ND	ND
Heptachlor Epoxide	µg/kg	—	16	—	ND	2.5	0.18
O,P'-DDT	µg/kg	—	14	—	ND	ND	ND
P,P'-DDT	µg/kg	4.77	17	2	ND	30	2.4
Total DDT	µg/kg	51.7	2	0	6	27.3	17
O,P'-DDD	µg/kg	—	16	—	ND	ND	ND
P,P'-DDD	µg/kg	7.81	17	0	ND	5.3	0.7
P,P'-DDE	µg/kg	374.17	17	0	ND	17.7	5.2

Table 4-15

Summary of Sediment Quality Sampling Data
Santa Monica Bay
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
Total Pesticides	µg/kg	—	16	—	ND	32.8	2.0
PCB-1016	µg/kg	188.79	14	0	ND	ND	ND
PCB-1221	µg/kg	188.79	14	0	ND	ND	ND
PCB-1232	µg/kg	188.79	14	0	ND	ND	ND
PCB-1242	µg/kg	188.79	14	0	ND	ND	ND
PCB-1248	µg/kg	188.79	14	0	ND	103	55
PCB-1254	µg/kg	188.79	16	0	ND	57.9	43
PCB-1260	µg/kg	188.79	14	0	ND	ND	ND
Total PCBs	µg/kg	188.79	0	0	ND	ND	ND
Total Chlorinated Hydrocarbons Detected	µg/kg	—	1	0	ND	ND	ND
All remaining Pesticides	µg/kg	—	2	0	3	14.5	8.75

Notes:

— - No Guidance Value

NA - Not Analyzed

ND - Not Detected

1992 Chambers Group = 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetland Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.

1995 ABT = 1995, October 17. Advanced Biological Testing. Draft Report of Results of Chemical and Physical Testing of Sediments from Marina Del Rey South Entrance.

1996-1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.

PEL - Probable Effects Level, level above which adverse effects are frequently expected

1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

Table 4-16

Summary of Sediment Quality Sampling Data
Ballona Channel - Saltwater
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
General							
Oil and Grease	mg/kg	—	9	—	ND	27800	4400
TRPH	mg/kg	—	2	—	53	2300	1177
TPH - Gas	mg/kg	—	3	—	ND	ND	ND
MTBE	mg/kg	—	2	—	ND	ND	ND
TPH - Diesel	mg/kg	—	3	—	ND	210	74
Cyanide	mg/kg	—	2	—	0.75	1.7	1.2
Silica	mg/kg	—	2	—	290	1200	745
Strontium 90	pCi/g	—	1	—	0.12	0.12	0.12
Hydrogen Sulfide	mg/kg	—	4	—	0.65	1.79	1.10
Tributyltin	mg/kg	—	7	—	ND	0.63	0.24
Bicarbonate Alkalinity	mg/kg	—	2	—	4000	8000	6000
Carbonate Alkalinity	mg/kg	—	2	—	ND	200	100
Alkalinity as CaCO3	mg/kg	—	1	—	730	730	730
Hydroxide Alkalinity	mg/kg	—	2	—	ND	ND	ND
Total Alkalinity	mg/kg	—	4	—	6920	25100	15980
Volatile Solids	mg/kg	—	7	—	13000	112000	52200
Hardness as CaCO3	mg/kg	—	1	—	2200	2200	2200
Total Hardness	mg/kg	—	1	—	33000	33000	33000
Total Organic Carbon	mg/kg	—	7	—	1.55	29500	5673
Immediate Oxygen Demand	mg/kg	—	5	—	34	2500	586
Chemical Oxygen Demand	mg/kg	—	5	—	16200	56800	42240
Total Phosphorus	mg/kg	—	6	—	1.5	400	96
Total Phosphate	mg/kg	—	1	—	1.2	1.2	1.2
Orthophosphate	mg/kg	—	4	—	ND	37	9
Nitrogen	mg/kg	—	1	—	190	190	190
Organic Nitrogen	mg/kg	—	5	—	170	9190	2565
TIN	mg/kg	—	2	—	ND	ND	ND
TKN	mg/kg	—	3	—	160	1100	504
Nitrate - N	mg/kg	—	4	—	ND	350	88
Nitrite - N	mg/kg	—	2	—	ND	ND	ND
Ammonia - N	mg/kg	—	3	—	ND	5.0	2
Chloride	mg/kg	—	8	—	780	14500	9204
Calcium	mg/kg	—	5	—	5900	10900	8640
Magnesium	mg/kg	—	7	—	211	14300	5416
Potassium	mg/kg	—	8	—	1600	8460	3796
Sodium	mg/kg	—	3	—	5010	6500	5703
Fluoride	mg/kg	—	1	—	ND	ND	ND
Sulfate	mg/kg	—	8	—	490	2150	1245
Salinity	mg/kg	—	2	—	8800	15500	12150
pH	su	—	3	—	7.84	8	8
Bromide	mg/kg	—	2	—	ND	ND	ND
Sulfides	mg/kg	—	1	—	85	85	85
Moisture	%	—	1	—	24.4	24.4	24
Spec. Cond.	mmhos/cm	—	1	—	26	26	26
Total Dissolved Solids	mg/kg	—	1	—	21000	21000	21000
VOCs							
Chloromethane	mg/kg	—	4	—	ND	ND	ND
Bromomethane	µg/kg	—	4	—	ND	ND	ND
Dichlorodifluoromethane	µg/kg	—	4	—	ND	ND	ND
Vinyl Chloride	µg/kg	—	4	—	ND	ND	ND
Chloroethane	µg/kg	—	4	—	ND	ND	ND
Methylene Chloride	µg/kg	—	7	—	ND	ND	ND
Trichlorofluoromethane	µg/kg	—	4	—	ND	ND	ND
1,1-Dichloroethene	µg/kg	—	4	—	ND	ND	ND
1,1-Dichloroethane	µg/kg	—	4	—	ND	ND	ND
trans-1,2-Dichloroethene	µg/kg	—	4	—	ND	ND	ND
Chloroform	µg/kg	—	7	—	ND	ND	ND
1,2-Dichloroethane	µg/kg	—	7	—	ND	ND	ND
1,1,1-Trichloroethane	µg/kg	—	7	—	ND	ND	ND
Carbon Tetrachloride	µg/kg	—	4	—	ND	ND	ND
Bromodichloromethane	µg/kg	—	4	—	ND	ND	ND
1,2-Dichloropropane	µg/kg	—	4	—	ND	ND	ND
trans-1,3-Dichloropropene	µg/kg	—	4	—	ND	ND	ND
[b] Trichloroethene	µg/kg	41	4	0	ND	ND	ND
Dibromochloromethane	µg/kg	—	4	—	ND	ND	ND
1,1,2-Trichloroethane	µg/kg	—	4	—	ND	ND	ND
cis-1,3-Dichloropropene	µg/kg	—	4	—	ND	ND	ND
2-Chloroethylvinyl ether	µg/kg	—	4	—	ND	ND	ND
Bromoform	µg/kg	—	4	—	ND	ND	ND
1,1,2,2-Tetrachloroethane	µg/kg	—	4	—	ND	ND	ND

Table 4-16

Summary of Sediment Quality Sampling Data
Ballona Channel - Saltwater
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs * 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data Minimum	All Data Maximum	All Data Mean
[b] Tetrachloroethene	µg/kg	57	4	0	ND	ND	ND
Benzene	µg/kg		7	—	ND	ND	ND
Chlorobenzene	µg/kg	—	4	—	ND	ND	ND
1,2-Dichlorobenzene	µg/kg	—	4	—	ND	ND	ND
1,3-Dichlorobenzene	µg/kg	—	4	—	ND	ND	ND
1,4 Dichlorobenzene	µg/kg	—	4	—	ND	ND	ND
[b] Ethylbenzene	µg/kg	4	7	0	ND	ND	ND
Toluene	µg/kg	—	7	—	ND	963	144
[b] Total Xylenes	µg/kg	4	4	2	ND	33	13
SVOCs							
Total phenols	µg/kg	—	3	—	ND	3.1	1.5
4-Chloro-3-methylphenol	µg/kg	—	3	—	ND	ND	ND
[b] 2-Chlorophenol	µg/kg	8	3	0	ND	ND	ND
[b] 2,4-Dichlorophenol	µg/kg	5	3	0	ND	ND	ND
[b] 2,4-Dimethylphenol	µg/kg	18	3	0	ND	ND	ND
2,4-Dinitrophenol	µg/kg	—	3	—	ND	ND	ND
2-Methyl-4,6-dinitrophenol	µg/kg	—	3	—	ND	ND	ND
2-Nitrophenol	µg/kg	—	3	—	ND	ND	ND
4-Nitrophenol	µg/kg	—	3	—	ND	ND	ND
[b] Pentachlorophenol	µg/kg	17	3	0	ND	ND	ND
[b] Phenol	µg/kg	130	3	0	ND	ND	ND
[b] 2,4,6-Trichlorophenol	µg/kg	6	3	0	ND	ND	ND
Metals							
Aluminum	mg/kg	—	2	—	2900	9500	6200
Antimony	mg/kg	—	1	—	ND	ND	ND
Arsenic	mg/kg	41.6	9	0	ND	6.95	3.9
[b] Barium	mg/kg	48	1	0	41.1	41.1	41
Beryllium	mg/kg	—	3	—	ND	ND	ND
Boron	mg/kg		3	—	6.03	57	35
Cadmium	mg/kg	4.21	9	0	ND	1.58	0.68
Chromium	mg/kg	160.4	9	0	9.6	45.2	25
Copper	mg/kg	108.2	9	0	8.1	42.3	27
Iron	mg/kg	—	7	—	7200	54400	22271
Lead	mg/kg	112.18	9	3	14	161	68
[b] Manganese	mg/kg	260	7	1	76.5	433	178
Mercury	mg/kg	0.696	9	0	ND	0.17	0.08
Nickel	mg/kg	42.8	9	1	7.2	66.9	23
[b] Selenium	mg/kg	1	4	0	ND	0.33	0.2
Silver	mg/kg	1.77	4	0	ND	0.663	0.17
Thallium	mg/kg	—	3	—	ND	ND	ND
Zinc	mg/kg	271	9	0	38	202	127
Pesticides and PCBs							
[b] Aldrin	µg/kg	9.5	4	0	ND	ND	ND
alpha-BHC	µg/kg	—	4	—	ND	ND	ND
beta-BHC	µg/kg	—	7		ND	ND	ND
delta-BHC	µg/kg	—	3	—	ND	ND	ND
Lindane	µg/kg	0.99	4	0	ND	ND	ND
Chlordane	µg/kg	4.76	5	4	ND	210	102
alpha-Chlordane	µg/kg	—	1	—	6.6	6.6	6.6
gamma-Chlordane	µg/kg	—	1	—	7.7	7.7	7.7
Dieldrin	µg/kg	4.3	4	0	ND	ND	ND
Endrin	µg/kg	—	4	—	ND	ND	ND
Endrin Aldehyde	µg/kg	—	1	—	ND	ND	ND
Toxaphene	µg/kg	—	4	—	ND	ND	ND
[b] Heptachlor	µg/kg	0.3	4	0	ND	ND	ND
Heptachlor Epoxide	µg/kg	—	5	—	ND	ND	ND
O,P'-DDT	µg/kg	—	4	—	ND	ND	ND
P,P'-DDT	µg/kg	4.77	6	4	ND	160	52
O,P'-DDD	µg/kg	—	7	—	ND	ND	ND
P,P'-DDD	µg/kg	7.81	9	3	ND	120	17
O,P'-DDE	µg/kg	—	3	—	ND	ND	ND
P,P'-DDE	µg/kg	374.17	9	0	ND	190	41
Total DDT	µg/kg	51.7	1	0	17.8	17.8	18
Total Pesticides	µg/kg	—	4	—	ND	600	292
PCB-1016	µg/kg	188.79	4	0	ND	ND	ND
PCB-1221	µg/kg	188.79	4	0	ND	ND	ND
PCB-1232	µg/kg	188.79	4	0	ND	ND	ND
PCB-1242	µg/kg	188.79	4	0	ND	ND	ND
PCB-1248	µg/kg	188.79	4	0	ND	ND	ND
PCB-1254	µg/kg	188.79	8	0	ND	20	3

Table 4-16

Summary of Sediment Quality Sampling Data
Ballona Channel - Saltwater
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
PCB-1260	µg/kg	188.79	4	0	ND	ND	ND
Total Chlorinated Hydrocarbons Detected	µg/kg	---	4	—	ND	600	292
All remaining Pesticides	µg/kg	—	1	—	14.3	14.3	14

Notes:
--- - No Guidance Value
NA - Not Analyzed
ND - Not Detected
1992 Chambers= 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.
1996-1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
1996-1998 CDM = 1996, August 14. Camp Dresser & McKee. Ballona Creek Water and Sediment Quality Sediment Quality Report, 1995/1996, Wet Weather Season, Playa Vista, California and 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

Table 4-17

Summary of Sediment Quality Sampling Data
Ballona Wetlands - Saltwater
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs * 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data Minimum	All Data Maximum	All Data Mean
General							
Oil and Grease	mg/kg	—	1	—	62	62	62
TRPH	mg/kg	—	1	—	50	50	50
TPH - Gas	mg/kg	—	1	—	ND	ND	ND
MTBE	mg/kg	—	1	—	ND	ND	ND
TPH - Diesel	mg/kg	—	1	—	ND	ND	ND
Cyanide	mg/kg	—	1	—	ND	ND	ND
Silica	mg/kg	—	1	—	1500	1500	1500
Strontium 90	pCi/g	—	1	—	0.23	0.23	0.2
Bicarbonate Alkalinity	mg/kg	—	5	—	800	53000	16240
Carbonate Alkalinity	mg/kg	—	5	—	ND	900	290
Hydroxide Alkalinity	mg/kg	—	5	—	ND	ND	ND
Volatile Solids	mg/kg	—	5	—	28000	83000	56200
Ammonia - N	mg/kg	—	5	—	ND	ND	ND
Bromide	mg/kg	—	5	—	ND	ND	ND
Chloride	mg/kg	—	5	—	460	6700	3650
Nitrate - N	mg/kg	—	5	—	ND	ND	ND
Nitrite - N	mg/kg	—	5	—	ND	ND	ND
Orthophosphate	mg/kg	—	5	—	ND	ND	ND
Salinity	mg/kg	—	5	—	ND	17000	8960
Sulfate	mg/kg	—	5	—	260	1400	730
TIN	mg/kg	—	5	—	ND	ND	ND
TKN	mg/kg	—	5	—	190	680	520
TOC	mg/kg	—	8	—	2080	45000	14740
Total Phosphorus	mg/kg	—	5	—	240	380	280
pH	su	—	5	—	7.3	8.7	8.2
Calcium	mg/kg	—	5	—	3900	30000	15200
Magnesium	mg/kg	—	5	—	5500	7700	6700
Potassium	mg/kg	—	5	—	2700	5000	3700
Sodium	mg/kg	—	5	—	5500	6500	3860
Tributyltin	µg/kg	—	0	—	ND	ND	ND
VOCs							
Methylene chloride	µg/kg	—	1	—	ND	ND	ND
1,2-Dichloroethane	µg/kg	—	1	—	ND	ND	ND
Chloroform	µg/kg	—	1	—	ND	ND	ND
1,1,1-Trichloroethane	µg/kg	—	1	—	ND	ND	ND
Benzene	µg/kg	—	2	—	ND	15	7.5
Toluene	µg/kg	—	2	—	ND	7.9	4.0
[b] Ethylbenzene	µg/kg	4	1	0	ND	ND	ND
[b] m,p-Xylene	µg/kg	4	1	0	ND	ND	ND
Acetone	µg/kg	—	1	—	ND	ND	ND
Carbon Disulfide	µg/kg	—	1	—	ND	ND	ND
p-Isopropyltoluene	µg/kg	—	1	—	ND	ND	ND
SVOCs							
Total phenols	µg/kg	—	1	—	4.5	4.5	4.5
4-Chloro-3-methylphenol	µg/kg	—	1	—	ND	ND	ND
[b] 2-Chlorophenol	µg/kg	8	1	0	ND	ND	ND
[b] 2,4-Dichlorophenol	µg/kg	5	1	0	ND	ND	ND
[b] 2,4-Dimethylphenol	µg/kg	18	1	0	ND	ND	ND
2,4-Dinitrophenol	µg/kg	—	1	—	ND	ND	ND
2-Methyl-4,6-dinitrophenol	µg/kg	—	1	—	ND	ND	ND
2-Nitrophenol	µg/kg	—	1	—	ND	ND	ND
4-Nitrophenol	µg/kg	—	1	—	ND	ND	ND
[b] Pentachlorophenol	µg/kg	17	1	0	ND	ND	ND
[b] Phenol	µg/kg	130	1	0	ND	ND	ND
[b] 2,4,6-Trichlorophenol	µg/kg	6	1	0	ND	ND	ND
Metals							
Aluminum	mg/kg	—	5	—	7500	12000	9200
Antimony	mg/kg	—	3	—	ND	0.568	0.27
Arsenic	mg/kg	41.6	8	0	ND	4.21	2.9
[b] Barium	mg/kg	48	3	2	47.3	147	112.4
Beryllium	mg/kg	—	8	—	ND	0.651	0.16
Boron	mg/kg	—	5	—	50	59	55.6
Cadmium	mg/kg	4.21	8	0	ND	2.24	0.9
Chromium	mg/kg	160.4	8	0	11.4	26.4	18.5
[b] Cobalt	mg/kg	10	3	0	3.44	8.27	6.5
Copper	mg/kg	108.2	8	0	14.1	63	28.8
Iron	mg/kg	—	5	—	12000	18000	15600

Table 4-17

Summary of Sediment Quality Sampling Data
Ballona Wetlands - Saltwater
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
Lead	mg/kg	112.18	8	2	3.2	258	67
[b] Manganese	mg/kg	260	5	0	150	260	190
Mercury	mg/kg	0.696	8	0	0.028	0.184	0.07
Molybdenum	mg/kg	—	3	—	0.31	1.54	1.11
Nickel	mg/kg	42.8	8	0	7.66	29	19.7
[b] Selenium	mg/kg	1	8	0	ND	ND	ND
Silver	mg/kg	1.77	8	0	ND	1.21	0.26
Thallium	mg/kg	—	8	—	ND	0.376	0.10
[b] Vanadium	mg/kg	57	3	0	17.9	32.7	27
Zinc	mg/kg	271	8	2	40	359	128
Pesticides and PCBs							
beta-BHC	µg/kg	—	1	—	ND	ND	ND
delta-BHC	µg/kg	—	1	—	ND	ND	ND
O,P'-DDD	µg/kg		1	—	ND	ND	ND
P,P'-DDD	µg/kg	—	4	—	ND	ND	ND
O,P'-DDE	µg/kg	—	1	—	ND	ND	ND
P,P'-DDE	µg/kg	374.17	4	0	ND	ND	ND
P,P'-DDT	µg/kg	4.77	3	1	ND	6.9	2.3
PCB-1254	µg/kg	188.79	1	0	ND	ND	ND
PCB-1260	µg/kg	188.79	3	0	ND	92	31
Chlordane	µg/kg	4.79	3	1	ND	84	28

Notes:
- — - No Guidance Value
- NA - Not Analyzed
- ND - Not Detected
- 1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
- 2000 GS = 2000. GeoSyntec Consultants. Data.
- PEL - Probable Effects Level, level above which adverse effects are frequently expected
- 1997 ABCL – 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

Table 4-18

Summary of Sediment/Upland Soil Quality Sampling Data
Ballona Wetlands - Saltwater
After 1991

Parameter	Units	NOAA SQuIRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data Minimum	All Data Maximum	All Data Mean
General							
Oil and Grease	mg/kg	—	1	0	43	43	43
TRPH	mg/kg	—	1	0	40	40	40
TPH - Gas	mg/kg	—	1	0	ND	ND	ND
MTBE	mg/kg	—	1	0	ND	ND	ND
TPH - Diesel	mg/kg	—	1	0	6.8	6.8	6.8
Tributyl Tin	µg/kg	—	0	0	ND	ND	ND
Cyanide	mg/kg	-	1	0	ND	ND	ND
Silica	mg/kg	—	1	0	300	300	300
Strontium 90	pCi/g	—	1	0	0.1	0.1	0.1
Bicarbonate Alkalinity	mg/kg	-	2	0	4600	13000	8,800
Carbonate Alkalinity	mg/kg	—	2	0	ND	270	135
Hydroxide Alkalinity	mg/kg	—	2	0	ND	ND	ND
Volatile Solids	mg/kg	—	2	0	33000	56000	44,500
Ammonia - N	mg/kg	—	4	0	ND	ND	ND
Bromide	mg/kg	—	4	0	ND	130	39
Chloride	mg/kg	—	4	0	3600	31000	12,050
Nitrate - N	mg/kg	-	4	0	ND	ND	ND
Nitrite - N	mg/kg	—	4	0	ND	ND	ND
Orthophosphate	mg/kg	—	4	0	ND	ND	ND
Salinity	g/kg	—	4	0	7.7	57	22.83
Sulfate	mg/kg	—	4	0	1700	4100	3,150
TIN	mg/kg	—	4	0	ND	ND	ND
TKN	mg/kg	—	4	0	110	520	300
TOC	mg/kg	—	4	0	ND	29000	12,400
Total Phosphorus	mg/kg	—	4	0	200	440	310
pH	su	—	4	0	7.7	8.1	7.9
Calcium	mg/kg	—	2	0	7800	12000	9,900
Magnesium	mg/kg	—	2	0	8400	9000	8,700
Potassium	mg/kg	—	2	0	4500	4700	4,600
Sodium	mg/kg	—	2	0	5300	7300	6,300
VOCs							
Methylene chloride	µg/kg	—	1	0	ND	ND	ND
1,2-Dichloroethane	µg/kg	—	1	0	ND	ND	ND
Chloroform	µg/kg	—	1	0	ND	ND	ND
1,1,1-Trichloroethane	µg/kg	—	1	0	ND	ND	ND
Benzene	µg/kg	—	1	0	ND	ND	ND
Toluene	µg/kg	—	1	0	ND	ND	ND
[b] Ethylbenzene	µg/kg	4	1	0	ND	ND	ND
SVOCs							
Total phenols	µg/kg	—	1	0	1.2	1.2	1.20
4-Chloro-3-methylphenol	µg/kg	—	1	0	ND	ND	ND
[b] 2-Chlorophenol	µg/kg	8	1	0	ND	ND	ND
[b] 2,4-Dichlorophenol	µg/kg	5	1	0	ND	ND	ND
[b] 2,4-Dimethylphenol	µg/kg	18	1	0	ND	ND	ND
2,4-Dinitrophenol	µg/kg	—	1	0	ND	ND	ND
2-Methyl-4,6-dinitrophenol	µg/kg	—	1	0	ND	ND	ND
2-Nitrophenol	µg/kg	—	1	0	ND	ND	ND
4-Nitrophenol	µg/kg	—	1	0	ND	ND	ND
[b] Pentachlorophenol	µg/kg	17	1	0	ND	ND	ND
[b] Phenol	µg/kg	130	1	0	ND	ND	ND
[b] 2,4,6-Trichlorophenol	µg/kg	6	1	0	ND	ND	ND
Metals							
Aluminum	mg/kg	--	2	0	12000	13000	12,500
Arsenic	mg/kg	41.6	2	0	ND	5.4	2.7
Beryllium	mg/kg	—	2	0	ND	ND	ND
Boron	mg/kg	—	2	0	67	70	68.5
Cadmium	mg/kg	4.21	2	0	ND	ND	ND
Chromium	mg/kg	160.4	2	0	22	25	23.5
Copper	mg/kg	108.2	2	0	23	28	25.5
Iron	mg/kg	—	2	0	22000	24000	23,000
Lead	mg/kg	112.18	2	0	4.3	24	14.15
Manganese	mg/kg	—	2	0	360	440	400
Mercury	mg/kg	0.696	2	0	0.05	0.094	0.07
Nickel	mg/kg	42.8	2	0	30	35	32.5
[b] Selenium	mg/kg	1	2	0	ND	ND	ND
Silver	mg/kg	1.77	2	0	ND	ND	ND
Thallium	mg/kg	—	2	0	ND	ND	ND
Zinc	mg/kg	271	2	0	59	83	71

Table 4-18

Summary of Sediment/Upland Soil Quality Sampling Data
Ballona Wetlands - Saltwater
After 1991

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	Total Number of Samples	Total Number of Samples Over Guidance Values	All Data		
					Minimum	Maximum	Mean
Pesticides and PCBs							
beta-BHC	µg/kg	—	1	0	ND	ND	ND
delta-BHC	µg/kg	—	1	0	ND	ND	ND
O,P'-DDD	µg/kg	—	1	0	ND	ND	ND
P,P'-DDD	µg/kg	7.81	1	0	ND	ND	ND
O,P'-DDE	µg/kg	—	1	0	ND	ND	ND
P,P'-DDE	µg/kg	374.17	1	0	ND	ND	ND
(Aroclor) PCB-1254	µg/kg	188.79	1	0	ND	ND	ND

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

PEL - Probable Effects Level, level above which adverse effects are frequently expected

1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

* Indicates exceeds guidance values

Appendix A
Existing Data

Appendix A-1

Advanced Biological Testing Existing Data

Table A-1.1

Summary of 1995
Playa Vista Sediment Quality Sampling
Santa Monica Bay
ABT

Parameter	Units	NOAA SQuiRT Marine Sediment PELs[a] 1999	1995 ABT ABT VCH95-1 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-2 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-3 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-4 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-5 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-6 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-7 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-8 MDR Mouth 10/17/95	1995 ABT ABT VCH95-9 MDR Mouth 10/17/95
General											
TRPH	mg/kg	—	62.4	171	127	337	874	186	259	411	482
Tributlytin	µg/kg	—	2.71	3.39	0	8.24	5.93	1.32	2.29	4.34	8.85
Dibutyltin	µg/kg	—	0	3.5	0	5.41	7.24	1.38	0	13.8	5.45
Monobutyltin	µg/kg	—	0	2.79	0	5.56	3.77	0	0	4.93	14.6
Solids (%) (Dry Wt.)	%	—	70.2	76.1	82.9	79.5	65.3	83.2	81.2	81.1	60
Total Sulfides	mg/kg	—	26.1	1020	33.3	1060	1170	55.9	13.8	1000	1560
Water Soluble Sulfides	mg/kg	—	0	0	0	0	0	0	0	0	0.2
Total Organic Carbon	%	—	0.82	0.84	0.27	1.02	2.76	0.45	0.26	0.52	0.5
SVOCs											
Bis(2-ethylhexyl)phthalate	µg/kg	—	0	0	0	0	0	0	0	0	0
[b] Butylbenzylphthalate	µg/kg	63	83.80 *	0	74.4 *	223 *	496 *	0	425 *	0	2500 *
[b] Di-n-butylphthalate	µg/kg	58	0	0	0	0	0	0	0	0	0
[b] Diethylphthalate	µg/kg	6	0	0	0	0	0	0	0	0	0
[b] Dimethylphthalate	µg/kg	6	0	0	0	0	0	0	1390 *	0	0
[b] Di-n-octylphthalate	µg/kg	61	0	0	0	0	0	0	0	0	0
Napthalene	µg/kg	390.64	0	0	0	0	0	0	0	0	0
Acenaphthylene	µg/kg	127.87	0	0	0	0	0	0	0	0	0
Acenaphthene	µg/kg	88.9	0	0	0	0	0	0	0	0	0
Fluorene	µg/kg	144.35	0	0	0	0	0	0	0	0	0
Phenanthrene	µg/kg	543.53	0	31.9	0	162	633 *	279	0	0	0
Anthracene	µg/kg	245	0	0	0	0	226	0	0	0	1430 *
Fluoranthene	µg/kg	1493.54	0	82.4	33.9	321	1310	496	241	197	252
Pyrene	µg/kg	1397.6	34	88.4	36.6	336	1240	511	220	174	2030 *
Benz(a)anthracene	µg/kg	692.53	34.6	29.6	0	135	467	190	0	0	1300 *
Chrysene	µg/kg	845.98	0	54.8	0	197	726	332	0	0	697
Benzo(b)anthracene	µg/kg	—	0	38.4	0	128	343	163	0	0	1030
[b] Benzo(k)fluoranthene	µg/kg	1800	0	57	0	196	695	244	0	0	685
Benzo(a)pyrene	µg/kg	763.22	0	0	0	0	559	224	0	0	792 *
Dibenz(a,h)anthracene	µg/kg	134.61	0	0	0	0	0	0	0	0	843 *
[b] Indeno (1,2,3-c,d)pyrene	µg/kg	600	0	0	0	0	0	0	0	0	0
Benzo(g,h,i)perylene	µg/kg	670	0	0	0	0	0	0	0	0	0
4-chloro-3-methlyphenol	µg/kg	—	0	0	0	0	0	0	0	0	0
[b] 4-methylphenol	µg/kg	100	0	0	0	0	0	0	0	0	0
[b] 2-chlorophenol	µg/kg	8	0	0	0	0	0	0	0	0	0
[b] 2,4-dichlorophenol	µg/kg	5	0	0	0	0	0	0	0	0	0
[b] 2,4-dimethlyphenol	µg/kg	18	0	0	0	0	0	0	0	0	0
2,4-dinitrophenol	µg/kg	—	0	0	0	0	0	0	0	0	0
2-methyl-4,6-dinitrophenol	µg/kg	—	0	0	0	0	0	0	0	0	0
2-nitrophenol	µg/kg	—	0	0	0	0	0	0	0	0	0
4-nitrophenol	µg/kg	—	0	0	0	0	0	0	0	0	0
[b] Pentachlorophenol	µg/kg	17	0	0	0	0	0	0	0	0	0
[b] Phenol	µg/kg	130	0	0	0	0	0	0	0	0	0
[b] 2,4,6-trichlorophenol	µg/kg	6	0	0	0	0	0	0	0	0	0

Table A-1.1

Summary of 1995
Playa Vista Sediment Quality Sampling
Santa Monica Bay
ABT

Parameter	Units	NOAA SQuiRT Marine Sediment PELs[a] 1999	1995 ABT ABT VCH95-1 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-2 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-3 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-4 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-5 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-6 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-7 BC Mouth Breakwater 10/17/95	1995 ABT ABT VCH95-8 MDR Mouth 10/17/95	1995 ABT ABT VCH95-9 MDR Mouth 10/17/95
Metals											
Arsenic	mg/kg	41.6	1.2	2.1	1.28	1.23	3.83	2.07	1.8	1.63	2.87
[b] Barium	mg/kg	48	14.5	20.4	20.4	27.2	62.9 *	24.2	36.9	36.9	62.5 *
Beryllium	mg/kg	—	0.103	0.118	0.101	0.108	0.239	0.101	0.133	0.15	0.227
Cadmium	mg/kg	4.21	0	0	0	0.289	0.499	0	0	0.609	0.5
Chromium	mg/kg	160.4	11.9	12	14.8	13.6	26.5	10.5	15	17.5	27.2
[b] Cobalt	mg/kg	10	2.62	2.51	2.53	13.8 *	5.5	2.85	3.53	3.77	5.27
Copper	mg/kg	108.2	5.74	6.61	9.81	15.6	37.2	12	16.9	20.8	41.5
Lead	mg/kg	112.18	22.6	55.8	42.2	55.3	148 *	47.2	70.8	76.6	175 *
Mercury	mg/kg	0.696	0.094	0.047	0.036	0.084	0.156	0.041	0.042	0.067	0.127
Molybdenum	mg/kg	—	0.402	0.478	0.408	0.8	2.11	0.474	0.387	0.804	2.78
Nickel	mg/kg	42.8	6.88	6.86	6.66	8.4	15.9	7.24	8.7	9.096	15.2
[b] Selenium	mg/kg	1	NA	NA	NA	NA	NA	NA	NA	NA	0
Silver	mg/kg	1.77	NA	NA	NA	NA	0.251	0.963	0	0	0
[b] Vanadium	mg/kg	57	19.1	13.9	12.8	14.6	29.4	31.1	17	19.2	26.6
Zinc	mg/kg	271	33.2	39.7	45.8	92.1	204	200	80.9	107	243
Pesticides and PCBs											
4,4' - DDD	µg/kg	7.81	4.53	3.39	0	5.58	7.04	0	3.36	3.48	15 *
4,4' - DDE	µg/kg	374.17	3.94	5.32	0	4.63	7.96	0	2.96	3.86	177
4,4' - DDT	µg/kg	4.77	0	0	0	0	0	0	0	0	30 *
[b] Aldrin	µg/kg	9.5	0	0	0	0	0	0	0	0	0
alpha-BHC	µg/kg	—	0	0	0	0	0	0	0	0	0
beta-BHC	µg/kg	—	0	0	0	0	0	0	0	0	0
delta-BHC	µg/kg	—	0	0	0	0	0	0	0	0	0
Lindane	µg/kg	0.99	0	0	0	0	0	0	0	0	0
Chlordane	µg/kg	4.79	0	0	0	0	0	0	0	0	58.7 *
Dieldrin	µg/kg	4.3	0	0	0	0	0	0	0	0	0
Endrin	µg/kg	—	0	0	0	0	0	0	0	0	0
Endosulfan I	µg/kg	—	0	0	0	0	0	0	0	0	0
Endosulfan II	µg/kg	—	0	0	0	0	0	0	0	0	0
Endosulfan Sulfate	µg/kg	—	0	0	0	0	0	0	0	0	0
Endrin Aldehyde	µg/kg	—	0	0	0	0	0	0	0	0	0
Methoxychlor	µg/kg	—	0	0	0	0	0	0	0	0	0
Toxaphene	µg/kg	—	0	0	0	0	0	0	0	0	0
[b] Heptachlor	µg/kg	0.3	0	0	0	0	0	0	0	0	0
Heptachlor Epoxide	µg/kg	—	0	0	0	0	0	0	0	0	0
PCB-1016	µg/kg	188.79	0	0	0	0	0	0	0	0	0
PCB-1221	µg/kg	188.79	0	0	0	0	0	0	0	0	0
PCB-1232	µg/kg	188.79	0	0	0	0	0	0	0	0	0
PCB-1242	µg/kg	188.79	0	0	0	0	0	0	0	0	0
PCB-1248	µg/kg	188.79	0	0	0	0	0	0	0	0	103
PCB-1254	µg/kg	188.79	37	47.3	57.9	49.1	0	0	0	0	0
PCB-1260	µg/kg	188.79	0	0	0	0	0	0	0	0	0

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1995 ABT = 1995, October 17. Advanced Biological Testing. Draft Report of Results of Chemical and Physical Testing of Sediments from Marina Del Rey South Entrance.
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables. NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division. National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed
* Indicates exceeds guidance values

Table A-1.1

Summary of 1995
Playa Vista Sediment Quality Sampling
Santa Monica Bay
ABT

Parameter	Units	NOAA SQuiRT Marine Sediment PELs[1] 1999	1995 ABT ABT VCH95-10 MDR Mouth 10/17/95	1995 ABT ABT VCH95-11 MDR Mouth 10/17/95	1995 ABT ABT VCH95-12 MDR Mouth 10/17/95	1995 ABT ABT VCH95-13 MDR Mouth 10/17/95	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
General										
TRPH	mg/kg	—	480	418	119	272	62.4	874	322.95	13 / 13
Tributyltin	µg/kg	—	4.22	3.79	0	4.15	ND	8.65	3.79	11 / 13
Dibutyltin	µg/kg	—	2.36	2.99	0	2.64	ND	13.6	3.44	9 / 13
Monobutyltin	µg/kg	—	2.58	0	0	0	ND	14.6	2.63	6 / 13
Solids (%) (Dry Wt.)	%	—	74.1	66.8	78.7	79.5	60	83.2	75.28	13 / 13
Total Sulfides	mg/kg	—	74.1	993	407	870	13.8	1560	637.17	13 / 13
Water Soluble Sulfides	mg/kg	—	0	0	0	0	ND	0.2	0.02	1 / 13
Total Organic Carbon	%	—	1.5	2.28	0.65	3.55	0.26	2.75	0.96	13 / 13
SVOCs										
Bis(2-ethylhexyl)phthalate	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
[b] Butylbenzylphthalate	µg/kg	63	0	0	0	0	ND	2500	292.48	6 / 13
[b] Di-n-butylphthalate	µg/kg	58	0	0	0	0	ND	ND	ND	0 / 13
[b] Diethylphthalate	µg/kg	6	0	0	0	0	ND	ND	ND	0 / 13
[b] Dimethylphthalate	µg/kg	6	0	0	0	0	ND	1390	106.92	1 / 13
[b] Di-n-octylphthalate	µg/kg	61	0	0	0	0	ND	ND	ND	0 / 13
Napthalene	µg/kg	390.64	0	0	0	0	ND	ND	ND	0 / 13
Acenaphthylene	µg/kg	127.87	0	0	0	0	ND	ND	ND	0 / 13
Acenaphthene	µg/kg	88.9	0	0	0	0	ND	ND	ND	0 / 13
Fluorene	µg/kg	144.35	0	0	0	0	ND	ND	ND	0 / 13
Phenanthrene	µg/kg	543.53	293	0	0	0	ND	933	130.68	5 / 13
Anthracene	µg/kg	245	0	0	0	0	ND	1430	128.15	2 / 13
Fluoranthene	µg/kg	1493.54	482	254	0	0	ND	1310	282.25	10 / 13
Pyrene	µg/kg	1397.6	447	347	0	0	ND	2030	420.46	11 / 13
Benz(a)anthracene	µg/kg	692.53	204	0	0	0	ND	1900	227.71	7 / 13
Chrysene	µg/kg	845.98	282	0	0	0	ND	726	178.06	6 / 13
Benzo(b)anthracene	µg/kg	—	279	0	0	0	ND	1030	152.42	6 / 13
[b] Benzo(k)fluoranthene	µg/kg	1900	213	0	0	0	ND	695	160.59	6 / 13
Benzo(a)pyrene	µg/kg	763.22	238	0	0	0	ND	792	139.46	4 / 13
Dibenz(a,h)anthracene	µg/kg	134.61	0	0	0	0	ND	843	64.85	1 / 13
[b] Indeno (1,2,3-c,d)pyrene	µg/kg	600	0	0	0	0	ND	ND	ND	0 / 13
Benzo(g,h,i)perylene	µg/kg	670	0	0	0	0	ND	ND	ND	0 / 13
4-chloro-3-methlyphenol	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
[b] 4-methlyphenol	µg/kg	100	0	0	0	0	ND	ND	ND	0 / 13
[b] 2-chlorophenol	µg/kg	8	0	0	0	0	ND	ND	ND	0 / 13
[b] 2,4-dichlorophenol	µg/kg	5	0	0	0	0	ND	ND	ND	0 / 13
[b] 2,4-dimethlyphenol	µg/kg	18	0	0	0	0	ND	ND	ND	0 / 13
2,4-dinitrophenol	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
2-methyl-4,6-dinitrophenol	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
2-nitrophenol	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
4-nitrophenol	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
[c] Pentachlorophenol	µg/kg	17	0	0	0	0	ND	ND	ND	0 / 13
[c] Phenol	µg/kg	130	0	0	0	0	ND	ND	ND	0 / 13
[c] 2,4,6-trichlorophenol	µg/kg	6	0	0	0	0	ND	ND	ND	0 / 13

Table A-1.1

Summary of 1995
Playa Vista Sediment Quality Sampling
Santa Monica Bay
ABT

Parameter	Units	NOAA SQuiRT Marine Sediment PELs[a] 1999	1995 ABT ABT VCH95-10 MDR Mouth 10/17/95	1995 ABT ABT VCH95-11 MDR Mouth 10/17/95	1995 ABT ABT VCH95-12 MDR Mouth 10/17/95	1995 ABT ABT VCH95-13 MDR Mouth 10/17/95	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
Metals										
Arsenic	mg/kg	41.6	2.43	5.6	1.93	3.36	1.2	5.6	2.41	13 / 13
[b] Barium	mg/kg	48	45.7	76.3 *	19.3	48.9 *	14.5	76.3	38.16	13 / 13
Beryllium	mg/kg	—	0.165	0.32	0.158	0.247	0.101	0.32	0.17	13 / 13
Cadmium	mg/kg	4.21	0.44	0.482	0	0.239	ND	0.609	0.24	7 / 13
Chromium	mg/kg	160.4	16.9	37.7	12.8	28.1	10.5	37.7	18.81	13 / 13
[b] Cobalt	mg/kg	10	4.18	6.56	3.56	4.99	2.51	13.6	4.74	13 / 13
Copper	mg/kg	108.2	24.6	39.1	8.6	32.7	5.74	41.5	20.86	13 / 13
Lead	mg/kg	112.18	82.5	298 *	23.3	152 *	22.6	296	96.10	13 / 13
Mercury	mg/kg	0.696	0.078	0.22	0.055	0.21	0.036	0.22	0.10	13 / 13
Molybdenum	mg/kg	—	0.761	2.07	0.757	1.33	0.387	2.78	1.04	13 / 13
Nickel	mg/kg	42.8	11.1	20.5	10.5	15.1	6.68	20.5	10.93	13 / 13
[b] Selenium	mg/kg	1	0	0	0	0	ND	ND	ND	0 / 5
Silver	mg/kg	1.77	0	1.69	0	0	ND	1.69	0.32	3 / 9
[b] Vanadium	mg/kg	57	21.6	35.8	15.4	16.4	12.9	35.8	21.15	13 / 13
Zinc	mg/kg	271	96.8	187	46.5	66.3	33.2	243	110.95	13 / 13
Pesticides and PCBs										
4,4' - DDD	µg/kg	7.81	5.4	9.88 *	0	0	ND	15	4.44	9 / 13
4,4' - DDE	µg/kg	374.17	5.24	10.5	0	3.43	ND	17.7	5.04	10 / 13
4,4' - DDT	µg/kg	4.77	0	0	0	0	ND	30	2.31	1 / 13
[b] Aldrin	µg/kg	9.5	0	0	0	0	ND	ND	ND	0 / 13
alpha-BHC	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
beta-BHC	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
delta- BHC	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
Lindane	µg/kg	0.99	0	0	0	0	ND	ND	ND	0 / 13
Chlordane	µg/kg	4.79	0	0	0	0	ND	56.7	4.36	1 / 13
Dieldrin	µg/kg	4.3	0	0	0	0	ND	ND	ND	0 / 13
Endrin	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
Endosulfan I	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
Endosulfan II	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
Endosulfan Sulfate	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
Endrin Aldehyde	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
Methoxychlor	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
Toxaphene	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
[b] Heptachlor	µg/kg	0.3	0	0	0	0	ND	ND	ND	0 / 13
Heptachlor Epoxide	µg/kg	—	0	0	0	0	ND	ND	ND	0 / 13
PCB-1016	µg/kg	188.79	0	0	0	0	ND	ND	ND	0 / 13
PCB-1221	µg/kg	188.79	0	0	0	0	ND	ND	ND	0 / 13
PCB-1232	µg/kg	188.79	0	0	0	0	ND	ND	ND	0 / 13
PCB-1242	µg/kg	188.79	0	0	0	0	ND	ND	ND	0 / 13
PCB-1248	µg/kg	188.79	41.3	33.8	0	0	ND	103	13.70	3 / 13
PCB-1254	µg/kg	188.79	0	0	0	0	ND	57.9	14.72	4 / 13
PCB-1260	µg/kg	188.79	0	0	0	0	ND	ND	ND	0 / 13

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1995 ABT = 1995, October 17. Advanced Biological Testing. Draft Report of Results of Chemical and Physical Testing of Sediments from Marina Del Rey South Entrance.
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed
* Indicates exceeds guidance values

Appendix A-2

Camp Dresser & McKee Existing Data

Table A-2.1

Summary of 2002-2003
Playa Vista Water Quality Sampling
Dry Weather - Freshwater Marsh
CDM

Parameters	Units	CTR Chronic[1] FW Criteria	2002 CDM CDM Central Drain Inlet (SP-2) 04/25/02	2002 CDM CDM Jefferson Drain Inlet (SP-3) 04/25/02	2002 CDM CDM S. Jefferson Drain Outlet (SP-4) 04/25/02	2002 CDM CDM Central Drain Inlet (SP-2) 06/28/02	2002 CDM CDM Jefferson Drain Inlet (SP-3) 06/28/02	2003 CDM CDM S. Jefferson Drain Outlet (SP-4) 06/28/02	2003 CDM CDM Central Drain Inlet (SP-2) 04/02/03	2003 CDM CDM Jefferson Drain Inlet (SP-3) 04/02/03	2003 CDM CDM S. Jefferson Drain Outlet (SP-4) 04/02/03
General											
Enterococci	MPN/100 ml	—	NA	NA	NA	NA	NA	NA	36.3	5.2	52.6
Fecal Coliforms	MPN/100 ml	—	NA	NA	NA	NA	NA	NA	8	4	2
Total Coliforms	MPN/100 ml	—	NA	NA	NA	NA	NA	NA	23	17	13
Bicarbonate Alkalinity (as $CaCO_3$)	mg/l	—	NA	NA	NA	NA	NA	NA	143	42	58
Carbonate Alkalinity (as $CaCO_3$)	mg/l	—	NA	NA	NA	NA	NA	NA	0	30	20
Hydroxide Alkalinity (as $CaCO_3$)	mg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
Total Alkalinity (as $CaCO_3$)	mg/l	—	NA	NA	NA	NA	NA	NA	143	72	78
Total Dissolved Solids	mg/l	—	NA	NA	NA	NA	NA	NA	520	392	392
Total Suspended Solids	mg/l	—	29	26	14	NA	NA	NA	20	39	0
Total Settleable Solids	mg/l	—	0	0	0	NA	NA	NA	NA	NA	0
Total Organic Carbon	mg/l	—	NA	NA	NA	NA	NA	NA	32.7	25.5	25.8
Turbidity	NTU	—	27	24	19	NA	NA	NA	NA	NA	NA
Salinity	g/l	—	NA	NA	NA	1.7	1.8	2	0	0	0
Residual Chlorine	mg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
Total Cyanide	mg/l	—	0.0038	0	0	NA	NA	NA	NA	NA	NA
Sulfides	mg/l	—	0	0.034	0	NA	NA	NA	NA	NA	NA
Hardness	mg/l	—	NA	NA	NA	680	740	800	186	156	158
pH	su	—	8.16	8.25	8.26	NA	NA	NA	NA	NA	NA
Total Phenols	mg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
BOD_5	mg/l	—	1.2	1.3	1.5	NA	NA	NA	11	0	0
Chemical Oxygen Demand	mg/l	—	NA	NA	NA	NA	NA	NA	34	33	32
MBAS	mg/l	—	0.22	0.2	0.19	NA	NA	NA	NA	NA	NA
TPH-Extractable	ug/l	—	NA	NA	NA	NA	NA	NA	0	0	0
TPH-Recoverable (TRPH)	mg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
TPH-Volatile	mg/l	—	17	22	18	NA	NA	NA	0	0	0
Total Oil and Grease	mg/l	—	3.3	0.42	0.44	NA	NA	NA	0	0	0
Ammonia	mg/l	—	NA	NA	NA	NA	NA	NA	0.43	0.02	0.02
Nitrate	mg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
Nitrite	mg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
Orthophosphate	mg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
TKN	mg/l	—	NA	NA	NA	NA	NA	NA	0.68	0.72	0.37
Total Phosphorus	mg/l	—	NA	NA	NA	NA	NA	NA	0.64	0.44	0.15
Dissolved Sodium	mg/l	—	NA	NA	NA	NA	NA	NA	75.9	76.2	76.8
Total Sodium	mg/l	—	NA	NA	NA	NA	NA	NA	106	89.5	89.5
VOCs											
1,1,1,2-Tetrachloroethane	ug/l	—	0	0	0	NA	NA	NA	0	0	0
1,1,1-Trichloroethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
c 1,1,2,2-Tetrachloroethane	µg/l	11	0	0	0	NA	NA	NA	0	0	0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
c 1,1,2-Trichloroethane	µg/l	42	0	0	0	NA	NA	NA	0	0	0
1,1-Dichloroethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
c 1,1-Dichloroethene	µg/l	3.2	0	0	0	NA	NA	NA	0	0	0
1,1-Dichloropropene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
1,2,3-Trichlorobenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
1,2,3-Trichloropropane	µg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
1,2,4-Trichlorobenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
1,2,4-Trimethylbenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
1,2-Dibromo-3-chloropropane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
1,2-Dibromoethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
c 1,2-Dichloroethane	µg/l	99	0	0	0	NA	NA	NA	0	0	0
c 1,2-Dichlorobenzene	µg/l	1700	0	0	0	NA	NA	NA	0	0	0

Table A-2.1

Summary of 2002-2003
Playa Vista Water Quality Sampling
Dry Weather - Freshwater Marsh
CDM

Parameters	Units	CTR Chronic* FW Criteria	2002 CDM CDM Central Drain Inlet (SP-2) 04/25/02	2002 CDM CDM Jefferson Drain Inlet (SP-3) 04/25/02	2002 CDM CDM S. Jefferson Drain Outlet (SP-4) 04/25/02	2002 CDM CDM Central Drain Inlet (SP-2) 06/28/02	2002 CDM CDM Jefferson Drain Inlet (SP-3) 06/28/02	2003 CDM CDM S. Jefferson Drain Outlet (SP-4) 06/28/02	2003 CDM CDM Central Drain Inlet (SP-2) 04/02/03	2003 CDM CDM Jefferson Drain Inlet (SP-3) 04/02/03	2003 CDM CDM S. Jefferson Drain Outlet (SP-4) 04/02/03
1,2-Dichloropropane	µg/l	39	0	0	0	NA	NA	NA	0	0	0
1,3-Dichlorobenzene	µg/l	2600	0	0	0	NA	NA	NA	0	0	0
1,3-Dichloropropane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
1,3,5-Trimethylbenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
1,4-Dichlorobenzene	µg/l	2600	0	0	0	NA	NA	NA	0	0	0
2,2-Dichloropropane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
2-Butanone	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
2-Chloroethyl-vinyl-ether	µg/l	—	0	0	0	NA	NA	NA	0	0	0
2-Chlorotoluene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
2-Hexanone	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Acetone	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
Acrolein	µg/l	780	0	0	0	NA	NA	NA	NA	NA	NA
Acrylonitrole	µg/l	0.66	0	0	0	NA	NA	NA	NA	NA	NA
Bromodichloromethane	µg/l	46	0	0	0	NA	NA	NA	0	0	0
Bromochloromethane	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
Bromobenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Bromomethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Benzene	µg/l	71	0	0	0	NA	NA	NA	0	0	0
Bromoform	µg/l	360	0	0	0	NA	NA	NA	0	0	0
Chlorodibromomethane	µg/l	34	0	0	0	NA	NA	NA	0	0	NA
Chlorobenzene	µg/l	21000	0	0	0	NA	NA	NA	0	0	0
Carbon Tetrachloride	µg/l	4.4	0	0	0	NA	NA	NA	0	0	0
Chloroethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Chloroform	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Chloromethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Carbon Disulfide	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
Dibromomethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Dichlorodifluoromethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Ethylbenzene	µg/l	29000	0	0	0	NA	NA	NA	0	0	0
Hexachlorobutadiene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Isopropylbenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Methyl isobutyl ketone	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
m,p-Xylene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Methyl-tert-butyl-ether	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
Methylene Chloride	µg/l	1600	0	0	0	NA	NA	NA	0	0	0
Naphthalene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
n-Butylbenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
n-Propylbenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
p-Isopropyltoluene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
o-Xylene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
sec-Butylbenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
tert-Butylbenzene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Styrene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Trichloroethene	µg/l	81	0	0	0	NA	NA	NA	0	0	0
Trichlorofluoromethane	µg/l	—	0	0	0	NA	NA	NA	0	0	0
Toluene	µg/l	200,000	0.25	0.14	0.19	NA	NA	NA	0	0	0
Tetrachloroethene	µg/l	8.85	0	0	0	NA	NA	NA	0	0	0
Vinyl Acetate	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
Vinyl Chloride	µg/l	525	0	0	0	NA	NA	NA	0	0	0
Total Xylenes	µg/l	—	0	0	0	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	µg/l	—	0	0	0	NA	NA	NA	0	0	0

Table A-2.1

Summary of 2002-2003
Playa Vista Water Quality Sampling
Dry Weather - Freshwater Marsh
CDM

Parameters	Units	CTR Chronic[a] FW Criteria	2002 CDM CDM Central Drain Inlet (SP-2) 04/25/02	2002 CDM CDM Jefferson Drain Inlet (SP-3) 04/25/02	2002 CDM CDM S. Jefferson Drain Outlet (SP-4) 04/25/02	2002 CDM CDM Central Drain Inlet (SP-2) 06/28/02	2002 CDM CDM Jefferson Drain Inlet (SP-3) 06/28/02	2003 CDM CDM S. Jefferson Drain Outlet (SP-4) 06/28/02	2003 CDM CDM Central Drain Inlet (SP-2) 04/02/03	2003 CDM CDM Jefferson Drain Inlet (SP-3) 04/02/03	2003 CDM CDM S. Jefferson Drain Outlet (SP-4) 04/02/03
cis-1,3-Dichloropropene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
[c] trans-1,2-Dichloroethene	µg/l	140000	0	0	0	NA	NA	NA	0	0	0
trans-1,3-Dichloropropene	µg/l	—	0	0	0	NA	NA	NA	0	0	0
SVOCs											
[c] Acenaphthene	µg/l	2700	NA	NA	NA	NA	NA	NA	0	0	0
Acenaphthylene	µg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
[c] Anthracene	µg/l	110000	NA	NA	NA	NA	NA	NA	0	0	0
[c] Benzo(a)anthracene	µg/l	0.049	NA	NA	NA	NA	NA	NA	0	0	0
[c] Benzo(a)pyrene	µg/l	0.049	NA	NA	NA	NA	NA	NA	0	0	0
[c] Benzo(b)fluoranthene	µg/l	0.049	NA	NA	NA	NA	NA	NA	0	0	0
Benzo(g,h,i)perylene	µg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
[c] Benzo(k)fluoranthene	µg/l	0.049	NA	NA	NA	NA	NA	NA	0	0	0
[c] Chrysene	µg/l	0.049	NA	NA	NA	NA	NA	NA	0	0	0
[c] Dibenzo(a,h)anthracene	µg/l	0.049	NA	NA	NA	NA	NA	NA	0	0	0
[c] Fluoranthene	µg/l	370	NA	NA	NA	NA	NA	NA	0	0	0
[c] Fluorene	µg/l	14000	NA	NA	NA	NA	NA	NA	0	0	0
[c] Indeno(1,2,3-c,d)pyrene	µg/l	0.049	NA	NA	NA	NA	NA	NA	NA	NA	0
Naphthalene	µg/l	—	NA	NA	NA	NA	NA	NA	NA	NA	0
[c] Phenanthrene	µg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
[c] Pyrene	µg/l	11000	NA	NA	NA	NA	NA	NA	0	0	0
Metals [b]											
Dissolved Antimony	µg/l	—	NA	NA	NA	1.1	1.2	1.6	NA	NA	NA
Total Antimony	µg/l	—	1.1	1.1	1.1	1	1.1	1.6	NA	NA	NA
Dissolved Arsenic	µg/l	150	NA	NA	NA	8.4	6.8	7.2	7.8	6.2	6
Total Arsenic	µg/l	—	11	10	11	8.9	7.6	7.9	8.5	6.2	6.1
Dissolved Beryllium	µg/l	—	NA	NA	NA	0	0	0	NA	NA	NA
Total Beryllium	µg/l	—	0	0	0	0	0	0	NA	NA	NA
Dissolved Cadmium	µg/l	6.2	NA	NA	NA	0.11	0.12	0.12	0.2	0	0
Total Cadmium	µg/l	—	0.18	0.18	0.17	0.12	0.14	0.14	0.2	0	0
Dissolved Chromium	µg/l	550	NA	NA	NA	0.72	0.62	0.79	1.2	0	0
Total Chromium	µg/l	—	0.42	0.58	0.79	0.56	0.87	0.8	1.7	1.5	0.8
Dissolved Chromium (VI)	µg/l	11	0	0	0	0	0	0	0.17	0.22	NA
Total Chromium (VI)	µg/l		NA	NA	NA	NA	NA	NA	NA	NA	0.19
Dissolved Copper	µg/l	29.0	NA	NA	NA	5.3	6.7	6.4	4	4.6	3.2
Total Copper	µg/l	—	13	14	16	9.7	8.3	7.8	6.1	5.9	3.5
Dissolved Iron	µg/l	—	NA	NA	NA	NA	NA	NA	0.13	0.09	0.06
Total Iron	µg/l	—	NA	NA	NA	NA	NA	NA	0.67	0.46	0.09
Dissolved Lead	µg/l	11.0	NA	NA	NA	0.83	2.9	0.46	0	0	0
Total Lead	µg/l	—	0.29	0.68	0.34	0	0.32	0.23	1.4	1.8	0
Dissolved Manganese	µg/l	—	NA	NA	NA	NA	NA	NA	35	14	17
Total Manganese	µg/l	—	NA	NA	NA	NA	NA	NA	310	27	20
Dissolved Mercury	µg/l	—	NA	NA	NA	0	0	0	0	0	0
Total Mercury	µg/l	—	0	0	0	0	0	0	0	0	0
Dissolved Nickel	µg/l	170.0	NA	NA	NA	3.8	3.7	3.4	2.5	2	1.9
Total Nickel	µg/l	—	4.9	5.6	5.5	3	3.6	3.4	3.4	2.4	2
Dissolved Selenium	µg/l	71	NA	NA	NA	0	0	0	0	0	0
Total Selenium	µg/l	5	0	0	0	0	0	0	0	0	0
Dissolved Silver	µg/l	—	NA	NA	NA	0	0	0	0	0	0
Total Silver	µg/l	—	0	0	0	0	0	0	0.2	0	0
Dissolved Thallium	µg/l	—	NA	NA	NA	0	0	0	NA	NA	NA
Total Thallium	µg/l	—	0	0	0	0	0	0	NA	NA	NA
Dissolved Zinc	µg/l	81	NA	NA	NA	28	21	14	5.9	3.4	12

Table A-2.1

Summary of 2002-2003
Playa Vista Water Quality Sampling
Dry Weather - Freshwater Marsh
CDM

Parameters	Units	CTR Chronic[a] FW Criteria	2002 CDM CDM Central Drain Inlet (SP-2) 04/25/02	2002 CDM CDM Jefferson Drain Inlet (SP-3) 04/25/02	2002 CDM CDM S. Jefferson Drain Outlet (SP-4) 04/25/02	2002 CDM CDM Central Drain Inlet (SP-2) 06/28/02	2002 CDM CDM Jefferson Drain Inlet (SP-3) 06/28/02	2003 CDM CDM S. Jefferson Drain Outlet (SP-4) 06/28/02	2003 CDM CDM Central Drain Inlet (SP-2) 04/02/03	2003 CDM CDM Jefferson Drain Inlet (SP-3) 04/02/03	2003 CDM CDM S. Jefferson Drain Outlet (SP-4) 04/02/03
Total Zinc	µg/l	---	7.3	11	9.3	7.6	16	7.1	13	15	1.7
Pesticides [b]											
[c] P,P'-DDD	µg/l	0.0083	NA	NA	NA	NA	NA	NA	0	0	0
[c] P,P'-DDE	µg/l	0.0059	NA	NA	NA	NA	NA	NA	0	0	0
P,P'-DDT	µg/l	0.001	NA	NA	NA	NA	NA	NA	0	0	0
[d] Aldrin	µg/l	1.3	NA	NA	NA	NA	NA	NA	0	0	0
[c] alpha-BHC	µg/l	0.0039	NA	NA	NA	NA	NA	NA	0	0	0
[c] beta-BHC	µg/l	0.014	NA	NA	NA	NA	NA	NA	0	0	0
delta-BHC	µg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
alpha-Chlordane	µg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
Dieldrin	µg/l	0.0019	NA	NA	NA	NA	NA	NA	0	0	0
Endosulfan I	µg/l	0.0087	NA	NA	NA	NA	NA	NA	0	0	0
Endosulfan II	µg/l	0.0087	NA	NA	NA	NA	NA	NA	0	0	0
[d] Endosulfan Sulfate	µg/l	110	NA	NA	NA	NA	NA	NA	0	0	0
Endrin	µg/l	0.0023	NA	NA	NA	NA	NA	NA	0	0	0
[c] Endrin Aldehyde	µg/l	0.76	NA	NA	NA	NA	NA	NA	0	0	0
Endrin Ketone	µg/l	—	NA	NA	NA	NA	NA	NA	NA	NA	0
[c] gamma-BHC (lindane)	µg/l	0.16	NA	NA	NA	NA	NA	NA	0	0	0
gamma-Chlordane	µg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
Heptachlor Epoxide	µg/l	0.0036	NA	NA	NA	NA	NA	NA	0	0	0
Heptachlor	µg/l	0.0036	NA	NA	NA	NA	NA	NA	0	0	0
Methoxychlor	µg/l	—	NA	NA	NA	NA	NA	NA	0	0	0
Aroclor-1016	µg/l	0.014	NA	NA	NA	NA	NA	NA	0	0	0
Aroclor-1221	µg/l	0.014	NA	NA	NA	NA	NA	NA	0	0	0
Aroclor-1232	µg/l	0.014	NA	NA	NA	NA	NA	NA	0	0	0
Aroclor-1242	µg/l	0.014	NA	NA	NA	NA	NA	NA	0	0	0
Aroclor-1248	µg/l	0.014	NA	NA	NA	NA	NA	NA	0	0	0
Aroclor-1254	µg/l	0.014	NA	NA	NA	NA	NA	NA	0	0	0
Aroclor-1260	µg/l	0.014	NA	NA	NA	NA	NA	NA	0	0	0
PCBs	µg/l	0.014	NA	NA	NA	NA	NA	NA	NA	NA	0

Notes:

2002 CDM = 2002, April 25 and June 28. Camp Dresser & McKee. Freshwater Marsh Water Quality Sampling, Dry Weather, Playa Vista, California.

Final CTR FW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a] Per the CTR, because the salinity is between 1 and 10 ppt, the applicable criteria are the more stringent of the freshwater or saltwater criteria.

[b] CTR Criteria was calculated using the mean hardness for all freshwater dry weather samples collected in the Freshwater Marsh. Since the mean hardness was 449 mg/l (greater than the maximum set by the CTR), a hardness of 400 mg/l was used.

[c] CTR criteria shown are for the protection of human health due to the consumption of aquatic organisms living in waters with carcinogenic constituents. CTR does not designate freshwater chronic criteria for these constituents.

[d] CTR criteria shown are the freshwater acute criteria for the protection of aquatic life. CTR does not designate freshwater chronic criteria for these constituents

Table A-2.1

Summary of 2002-2003
Playa Vista Water Quality Sampling
Dry Weather - Freshwater Marsh
CDM

Parameters	Units	CTR Chronic[a] FW Criteria	Dry Weather				
			Minimum	Maximum	Mean	Median	Hits / Total
General							
Enterococci	MPN/100 ml	—	5.2	52.6	31.37	36	3 / 3
Fecal Coliforms	MPN/100 ml	—	2	8	4.67	4	3 / 3
Total Coliforms	MPN/100 ml	—	13	23	17.67	17	3 / 3
Bicarbonate Alkalinity (as $CaCO_3$)	mg/l	—	42	143	81.00	58	3 / 3
Carbonate Alkalinity (as $CaCO_3$)	mg/l	—	ND	30	16.67	20	2 / 3
Hydroxide Alkalinity (as $CaCO_3$)	mg/l	—	ND	ND	ND	ND	0 / 3
Total Alkalinity (as $CaCO_3$)	mg/l	—	72	143	97.67	78	3 / 3
Total Dissolved Solids	mg/l	—	392	520	434.67	392	3 / 3
Total Suspended Solids	mg/l	—	ND	39	21.33	23	5 / 6
Total Settleable Solids	mg/l	—	ND	ND	ND	ND	0 / 4
Total Organic Carbon	mg/l	—	25.5	32.7	28.00	26	3 / 3
Turbidity	NTU	—	19	27	23.33	24	3 / 3
Salinity	g/l	—	ND	2.0	0.92	1	3 / 6
Residual Chlorine	mg/l	—	ND	ND	ND	ND	0 / 3
Total Cyanide	mg/l	—	ND	0.0038	0.00	0	1 / 3
Sulfides	mg/l	—	ND	0.034	0.01	0	1 / 3
Hardness	mg/l	—	156	800	453.33	433	6 / 6
pH	su	—	8.16	8.26	8.22	8	3 / 3
Total Phenols	mg/l	—	ND	ND	ND	ND	0 / 3
BOD_5	mg/l	—	ND	11	2.50	1	4 / 6
Chemical Oxygen Demand	mg/l	—	32	34	33.00	33	3 / 3
MBAS	mg/l	—	0.19	0.22	0.20	0	3 / 3
TPH-Extractable	ug/l	—	ND	ND	ND	ND	0 / 3
TPH-Recoverable (TRPH)	mg/l	—	ND	ND	ND	ND	0 / 3
TPH-Volatile	mg/l	—	ND	22	9.5	9	3 / 6
Total Oil and Grease	mg/l	—	ND	0.44	0.19	0	3 / 6
Ammonia	mg/l	—	0.02	0.43	0.16	0	3 / 3
Nitrate	mg/l	—	ND	ND	ND	ND	0 / 3
Nitrite	mg/l	—	ND	ND	ND	ND	0 / 3
Orthophosphate	mg/l	—	ND	ND	ND	ND	0 / 3
TKN	mg/l	—	0.37	0.72	0.59	[illegible]	3 / 3
Total Phosphorus	mg/l	—	0.15	0.64	0.41	0	3 / 3
Dissolved Sodium	mg/l	—	75.9	76.8	76.30	76	3 / 3
Total Sodium	mg/l	—	89.5	106	95.00	90	3 / 3
VOCs							
1,1,1,2-Tetrachloroethane	µg/l	—	ND	ND	ND	ND	0 / 6
1,1,1-Trichloroethane	µg/l	—	ND	ND	ND	ND	0 / 6
[c] 1,1,2,2-Tetrachloroethane	µg/l	11	ND	ND	ND	ND	0 / 6
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	—	ND	ND	ND	ND	0 / 3
[c] 1,1,2-Trichloroethane	µg/l	42	ND	ND	ND	ND	0 / 6
1,1-Dichloroethane	µg/l	—	ND	ND	ND	ND	0 / 6
[c] 1,1-Dichloroethene	µg/l	3.2	ND	ND	ND	ND	0 / 6
1,1-Dichloropropene	µg/l	—	ND	ND	ND	ND	0 / 6
1,2,3-Trichlorobenzene	µg/l	—	ND	ND	ND	ND	0 / 6
1,2,3-Trichloropropane	µg/l	—	ND	ND	ND	ND	0 / 3
1,2,4-Trichlorobenzene	µg/l	—	ND	ND	ND	ND	0 / 6
1,2,4-Trimethylbenzene	µg/l	—	ND	ND	ND	ND	0 / 6
1,2-Dibromo-3-chloropropane	µg/l	—	ND	ND	ND	ND	0 / 6
1,2-Dibromoethane	µg/l	—	ND	ND	ND	ND	0 / 6
[c] 1,2-Dichloroethane	µg/l	99	ND	ND	ND	ND	0 / 6
[b] 1,2-Dichlorobenzene	µg/l	1700	ND	ND	ND	ND	0 / 6

Table A-2.1

Summary of 2002-2003
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Dry Weather - Freshwater Marsh
CDM

Parameters	Units	CTR Chronic[a] FW Criteria	Dry Weather				
			Minimum	Maximum	Mean	Median	Hits / Total
1,2-Dichloropropane	µg/l	39	ND	ND	ND	ND	0 / 6
1,3-Dichlorobenzene	µg/l	2600	ND	ND	ND	ND	0 / 6
1,3-Dichloropropane	µg/l	—	ND	ND	ND	ND	0 / 6
1,3,5-Trimethylbenzene	µg/l	—	ND	ND	ND	ND	0 / 6
1,4-Dichlorobenzene	µg/l	2600	ND	ND	ND	ND	0 / 6
2,2-Dichloropropane	µg/l	—	ND	ND	ND	ND	0 / 6
2-Butanone	µg/l	—	ND	ND	ND	ND	0 / 3
2-Chloroethyl-vinyl-ether	µg/l	—	ND	ND	ND	ND	0 / 6
2-Chlorotoluene	µg/l	—	ND	ND	ND	ND	0 / 6
2-Hexanone	µg/l	—	ND	ND	ND	ND	0 / 3
4-Chlorotoluene	µg/l	—	ND	ND	ND	ND	0 / 6
Acetone	µg/l	—	ND	ND	ND	ND	0 / 3
Acrolein	µg/l	780	ND	ND	ND	ND	0 / 3
Acrylonitrole	µg/l	0.66	ND	ND	ND	ND	0 / 3
Bromodichloromethane	µg/l	46	ND	ND	ND	ND	0 / 6
Bromochloromethane	µg/l	—	ND	ND	ND	ND	0 / 3
Bromobenzene	µg/l	—	ND	ND	ND	ND	0 / 6
Bromomethane	µg/l	—	ND	ND	ND	ND	0 / 6
Benzene	µg/l	71	ND	ND	ND	ND	0 / 6
Bromoform	µg/l	360	ND	ND	ND	ND	0 / 6
Chlorodibromomethane	µg/l	34	ND	ND	ND	ND	0 / 5
Chlorobenzene	µg/l	21000	ND	ND	ND	ND	0 / 6
Carbon Tetrachloride	µg/l	4.4	ND	ND	ND	ND	0 / 6
Chloroethane	µg/l	—	ND	ND	ND	ND	0 / 6
Chloroform	µg/l	—	ND	ND	ND	ND	0 / 6
Chloromethane	µg/l	—	ND	ND	ND	ND	0 / 6
Carbon Disulfide	µg/l	—	ND	ND	ND	ND	0 / 3
Dibromomethane	µg/l	—	ND	ND	ND	ND	0 / 6
Dichlorodifluoromethane	µg/l	—	ND	ND	ND	ND	0 / 6
Ethylbenzene	µg/l	29000	ND	ND	ND	ND	0 / 6
Hexachlorobutadiene	µg/l	—	ND	ND	ND	ND	0 / 6
Isopropylbenzene	µg/l	—	ND	ND	ND	ND	0 / 6
Methyl Isobutyl ketone	µg/l	—	ND	ND	ND	ND	0 / 3
m,p-Xylene	µg/l	—	ND	ND	ND	ND	0 / 6
Methyl-tert-butyl-ether	µg/l	—	ND	ND	ND	ND	0 / 3
Methylene Chloride	µg/l	1600	ND	ND	ND	ND	0 / 6
Napthalene	µg/l	—	ND	ND	ND	ND	0 / 6
n-Butylbenzene	µg/l	—	ND	ND	ND	ND	0 / 6
n-Propylbenzene	µg/l	—	ND	ND	ND	ND	0 / 6
p-Isopropyltoluene	µg/l	—	ND	ND	ND	ND	0 / 6
o-Xylene	µg/l	—	ND	ND	ND	ND	0 / 6
sec-Butylbenzene	µg/l	—	ND	ND	ND	ND	0 / 6
tert-Butylbenzene	µg/l	—	ND	ND	ND	ND	0 / 6
Styrene	µg/l	—	ND	ND	ND	ND	0 / 6
Trichloroethene	µg/l	81	ND	ND	ND	ND	0 / 6
Trichlorofluoromethane	µg/l	—	ND	ND	ND	ND	0 / 6
Toluene	µg/l	200,000	ND	0.25	0.10	C	3 / 6
Tetrachloroethene	µg/l	8.85	ND	ND	ND	ND	0 / 6
Vinyl Acetate	µg/l	—	ND	ND	ND	ND	0 / 3
Vinyl Chloride	µg/l	525	ND	ND	ND	ND	0 / 6
Total Xylenes	µg/l	—	ND	ND	ND	ND	0 / 3
cis-1,2-Dichloroethene	µg/l	—	ND	ND	ND	ND	0 / 6

Table A-2.1

Summary of 2002-2003
Playa Vista Water Quality Sampling
Dry Weather - Freshwater Marsh
CDM

Parameters	Units	CTR Chronic[a] FW Criteria	Dry Weather				
			Minimum	Maximum	Mean	Median	Hits / Total
cis-1,3-Dichloropropene	µg/l	—	ND	ND	ND	ND	0 / 6
[c] trans-1,2-Dichloroethene	µg/l	140000	ND	ND	ND	ND	0 / 6
trans-1,3-Dichloropropene	µg/l	—	ND	ND	ND	ND	0 / 6
SVOCs							
[c] Acenaphthene	µg/l	2700	ND	ND	ND	ND	0 / 3
Acenaphthylene	µg/l	—	ND	ND	ND	ND	0 / 3
[c] Anthracene	µg/l	110000	ND	ND	ND	ND	0 / 3
[c] Benzo(a)anthracene	µg/l	0.049	ND	ND	ND	ND	0 / 3
[c] Benzo(a)pyrene	µg/l	0.049	ND	ND	ND	ND	0 / 3
[c] Benzo(b)fluoranthene	µg/l	0.049	ND	ND	ND	ND	0 / 3
Benzo(g,h,i)perylene	µg/l	—	ND	ND	ND	ND	0 / 3
[c] Benzo(k)fluoranthene	µg/l	0.049	ND	ND	ND	ND	0 / 3
[c] Chrysene	µg/l	0.049	ND	ND	ND	ND	0 / 3
[c] Dibenzo(a,h)anthracene	µg/l	0.049	ND	ND	ND	ND	0 / 3
[c] Fluoranthene	µg/l	370	ND	ND	ND	ND	0 / 3
[c] Fluorene	µg/l	14000	ND	ND	ND	ND	0 / 3
[c] Indeno(1,2,3-c,d)pyrene	µg/l	0.049	ND	ND	ND	ND	0 / 1
Naphthalene	µg/l	—	ND	ND	ND	ND	0 / 1
[c] Phenanthrene	µg/l	—	ND	ND	ND	ND	0 / 3
[c] Pyrene	µg/l	11000	ND	ND	ND	ND	0 / 3
Metals [b]							
Dissolved Antimony	µg/l	—	1.1	1.6	1.30	1	3 / 3
Total Antimony	µg/l	—	1.0	1.6	1.17	1	6 / 6
Dissolved Arsenic	µg/l	150	6.0	8.4	7.07	7	6 / 6
Total Arsenic	µg/l	—	6.1	11	8.57	9	9 / 9
Dissolved Beryllium	µg/l	—	ND	ND	ND	ND	0 / 3
Total Beryllium	µg/l	—	ND	ND	ND	ND	0 / 6
Dissolved Cadmium	µg/l	6.2	ND	0.2	0.09	0	4 / 6
Total Cadmium	µg/l	—	ND	0.2	0.13	0	7 / 9
Dissolved Chromium	µg/l	550	ND	1.2	0.56	1	4 / 6
Total Chromium	µg/l	—	0.42	1.7	0.89	1	9 / 9
Dissolved Chromium (VI)	µg/l	11	ND	0.22	0.05	0	3 / 8
Total Chromium (VI)	µg/l		0.19	0.19	0.19	0	1 / 1
Dissolved Copper	µg/l	29.0	3.2	6.7	5.03	5	6 / 6
Total Copper	µg/l	—	3.5	16	9.37	8	9 / 9
Dissolved Iron	µg/l	—	0.06	0.13	0.09	0	3 / 3
Total Iron	µg/l	—	0.09	0.67	0.41	0	3 / 3
Dissolved Lead	µg/l	11.0	ND	2.9	0.70	0	3 / 6
Total Lead	µg/l	—	ND	1.8	0.56	0	7 / 9
Dissolved Manganese	µg/l	—	14	35	22.00	17	3 / 3
Total Manganese	µg/l	—	20	310	119.00	27	3 / 3
Dissolved Mercury	µg/l	—	ND	ND	ND	ND	0 / 6
Total Mercury	µg/l	—	ND	ND	ND	ND	0 / 9
Dissolved Nickel	µg/l	170.0	1.9	3.8	2.88	3	6 / 6
Total Nickel	µg/l	—	2.0	5.8	3.76	3	9 / 9
Dissolved Selenium	µg/l	71	ND	ND	ND	ND	0 / 6
Total Selenium	µg/l	5	ND	ND	ND	ND	0 / 9
Dissolved Silver	µg/l	—	ND	ND	ND	ND	0 / 6
Total Silver	µg/l	—	ND	0.2	0.02	0	1 / 9
Dissolved Thallium	µg/l	—	ND	ND	ND	ND	0 / 3
Total Thallium	µg/l	—	ND	ND	ND	ND	0 / 6
Dissolved Zinc	µg/l	81	1.2	28	12.25	10	6 / 6

Table A-2.1

Summary of 2002-2003
Playa Vista Water Quality Sampling
Dry Weather - Freshwater Marsh
CDM

Parameters	Units	CTR Chronic[a] FW Criteria	Dry Weather				
			Minimum	Maximum	Mean	Median	Hits / Total
Total Zinc	µg/l	—	1.7	16	9.78	9	9 / 9
Pesticides [b]							
[c] P,P'-DDD	µg/l	0.0083	ND	ND	ND	ND	0 / 3
[c] P,P'-DDE	µg/l	0.0059	ND	ND	ND	ND	0 / 3
P,P'-DDT	µg/l	0.001	ND	ND	ND	ND	0 / 3
[d] Aldrin	µg/l	1.3	ND	ND	ND	ND	0 / 3
[c] alpha-BHC	µg/l	0.0039	ND	ND	ND	ND	0 / 3
[c] beta-BHC	µg/l	0.014	ND	ND	ND	ND	0 / 3
delta-BHC	µg/l	—	ND	ND	ND	ND	0 / 3
alpha-Chlordane	µg/l	—	ND	ND	ND	ND	0 / 3
Dieldrin	µg/l	0.0019	ND	ND	ND	ND	0 / 3
Endosulfan I	µg/l	0.0087	ND	ND	ND	ND	0 / 3
Endosulfan II	µg/l	0.0087	ND	ND	ND	ND	0 / 3
[d] Endosulfan Sulfate	µg/l	110	ND	ND	ND	ND	0 / 3
Endrin	µg/l	0.0023	ND	ND	ND	ND	0 / 3
[c] Endrin Aldehyde	µg/l	0.76	ND	ND	ND	ND	0 / 3
Endrin Ketone	µg/l	—	ND	ND	ND	ND	0 / 1
[d] gamma-BHC (lindane)	µg/l	0.16	ND	ND	ND	ND	0 / 3
gamma-Chlordane	µg/l	—	ND	ND	ND	ND	0 / 3
Heptachlor Epoxide	µg/l	0.0036	ND	ND	ND	ND	0 / 3
Heptachlor	µg/l	0.0036	ND	ND	ND	ND	0 / 3
Methoxychlor	µg/l	—	ND	ND	ND	ND	0 / 3
Aroclor-1016	µg/l	0.014	ND	ND	ND	ND	0 / 3
Aroclor-1221	µg/l	0.014	ND	ND	ND	ND	0 / 3
Aroclor-1232	µg/l	0.014	ND	ND	ND	ND	0 / 3
Aroclor-1242	µg/l	0.014	ND	ND	ND	ND	0 / 3
Aroclor-1248	µg/l	0.014	ND	ND	ND	ND	0 / 3
Aroclor-1254	µg/l	0.014	ND	ND	ND	ND	0 / 3
Aroclor-1260	µg/l	0.014	ND	ND	ND	ND	0 / 3
PCBs	µg/l	0.014	ND	ND	ND	ND	0 / 1

Notes:

2002 CDM = 2002, April 25 and June 28. Camp Dresser & McKee

Final CTR FW Criteria = 2000, May 18. Federal Register Volume

Priority Toxic Pollutants for the State of California.

[a] Per the CTR, because the salinity is between 1 and 10 ppt, the a

[b] CTR Criteria was calculated using the mean hardness for all fres

maximum set by the CTR), a hardness of 400 mg/l was used.

[c] CTR criteria shown are for the protection of human health due to

[d] CTR criteria shown are the freshwater acute criteria for the prote

ND - Not Detected

0 - Not Detected

Table A-2.2

Summary of 1996-1998
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
CDM

Parameters	Units	CTR Chronic SW Criteria	1996 CDM CDM WB Walk Brdge 1/15/96	1996 CDM CDM SWM SW Marsh 1/15/96	1996 CDM CDM SS1 Saline Sta. 1/15/96	1996 CDM CDM SS2 Saline Sta. 1/15/96	1996 CDM CDM SWM-COMP* SW Marsh 4/17/98	1996 CDM CDM SS1-COMP* Salinity 1 4/17/98	1998 CDM CDM PVB06-WM Ballona Ch. 7/20/98	1998 CDM CDM PVB07-WM Flap Gates 7/20/98
General										
Cyanide	mg/l	1.0	NA	NA	NA	NA	NA	NA	NA	0.0017
Oil and Grease	mg/l	—	0	0	0	0	0	0	NA	0
TRPH	mg/l	—	NA	NA	NA	NA	NA	NA	NA	0
TPH - Gas	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
MTBE	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
TPH - Diesel	mg/l	—	NA	NA	NA	NA	NA	NA	NA	0
Total Phenols	mg/l	—	NA	NA	NA	NA	NA	NA	NA	0.0019
Total Coliform	MPN/100ml	—	NA	NA	NA	NA	NA	NA	300	7
Fecal Coliform	MPN/100ml	—	NA	NA	NA	NA	NA	NA	80	4
Ammonia	mg/l	—	0	0	3.94	0	NA	NA	NA	NA
Dissolved Calcium	mg/l	—	30,000	370,000	300000	260000	200	210	330	360
Total Calcium	mg/l	—	NA	NA	NA	NA	NA	NA	340	360
Dissolved Magnesium	mg/l	—	570,000	900,000	600000	490000	610	630	1000	1100
Total Magnesium	mg/l	—	NA	NA	NA	NA	NA	NA	1000	1100
Dissolved Potassium	mg/l	—	NA	NA	NA	NA	NA	NA	320	330
Total Potassium	mg/l	—	NA	NA	NA	NA	NA	NA	320	340
Dissolved Sodium	mg/l	—	NA	NA	NA	NA	NA	NA	8200	8400
Total Sodium	mg/l	—	NA	NA	NA	NA	NA	NA	8100	8400
Bicarbonate	mg/l	—	NA	NA	NA	NA	NA	NA	110	120
Carbonate	mg/l	—	NA	NA	NA	NA	NA	NA	0	0
Hydroxide Alkalinity	mg/l	—	NA	NA	NA	NA	NA	NA	0	0
Chloride	mg/l	—	11,000	12,000	13000	6500	NA	NA	23000	19000
Nitrate	mg/l	—	3.5	3.4	2.8	3.9	NA	0	NA	NA
Sulfate	mg/l	—	1500	1500	1600	1300	NA	NA	2800	2800
Alkalinity	mg/l	—	180	160	160	180	NA	NA	NA	NA
Hardness	mg/l	—	3100	4200	3200	2600	NA	NA	NA	NA
Total Phosphate	mg/l	—	0.18	0.13	0.15	0.16	0.15	0.16	0	0
Orthophosphate	mg/l	—	0	0	0	0	0	0	0	0
Tributyltin	µg/l	—	0	0	0	0	NA	NA	NA	NA
COD	mg/l	—	NA	NA	NA	NA	NA	NA	1100	1800
pH	su	—	7.92	7.94	7.94	8.02	7.97	7.96	NA	NA
NH3-N	mg/l	—	NA	NA	NA	NA	0	0	0	0
Nitrate-N	mg/l	—	NA	NA	NA	NA	NA	NA	0	0
Nitrite-N	mg/l	—	NA	NA	NA	NA	NA	NA	0	0
TKN	mg/l	—	0.56	0	0.56	0.56	1.9	1.1	1.1	0.84
Total Inorganic Nitrogen	mg/l	—	NA	NA	NA	NA	NA	NA	0	0
Specific Conductance	µmhos/cm	—	42000	43000	47000	37000	50000	52000	NA	NA
Total Dissolved Solids	mg/l	—	21000	21000	22000	17000	23000	23000	35000	33000
Total Suspended Solids	mg/l	—	NA	NA	NA	NA	46	40	27	28
Volatile Suspended Solids	mg/l	—	0	0	0	0	NA	NA	NA	NA
Volatile Solids	mg/l	—	NA	NA	NA	NA	NA	NA	6500	6000
MBAS	mg/l	—	0.12	0.17	0.13	0.15	NA	NA	NA	NA
Total Organic Carbon	mg/l	—	NA	NA	NA	NA	NA	NA	1.7	1.2
BOD	mg/l	—	12	0	4.7	0	7.9	4.2	0	0
Bromide	mg/l	—	NA	NA	NA	NA	NA	NA	110	0
Salinity	‰	—	NA	NA	NA	NA	NA	NA	27	26
Silica	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
Strontium 90	pci/l	—	NA	NA	NA	NA	NA	NA	NA	1.76

Table A-2.2

Summary of 1996-1998
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
CDM

Parameters	Units	CTR Chronic SW Criteria	1996 CDM CDM WB Walk Brdge 1/15/96	1996 CDM CDM SWM SW Marsh 1/15/96	1996 CDM CDM SS1 Saline Sta. 1/15/96	1996 CDM CDM SS2 Saline Sta. 1/15/96	1996 CDM CDM SWM-COMP[a] SW Marsh 4/17/96	1996 CDM CDM SS1-COMP[a] Salinity 1 4/17/96	1998 CDM CDM PVB06-WM Ballona Ch. 7/20/98	1998 CDM CDM PVB07-WM Flap Gates 7/20/98
Volatile Organics [b]										
Tetrachloroethene	µg/l	8.85	0	0	0	0	NA	NA	NA	NA
Toluene	µg/l	200,000	0	0	0	0	NA	NA	NA	0
Methylene Chloride	µg/l	1,600	NA	NA	NA	NA	NA	NA	NA	0
1,2-Dichloroethane	µg/l	99	NA	NA	NA	NA	NA	NA	NA	0
Chloroform	µg/l	470	NA	NA	NA	NA	NA	NA	NA	0
1,1,1-Trichloroethane	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
Benzene	µg/l	71	NA	NA	NA	NA	NA	NA	NA	0
Ethylbenzene	µg/l	29,000	NA	NA	NA	NA	NA	NA	NA	0
Semi-Volatile Organic [b]										
Naphthalene	µg/l	—	0	0	3.1	0	NA	NA	NA	NA
1,2,3-Trichloropropane	µg/l	—	0	0	2.[illegible]	0	NA	NA	NA	NA
4-Chloro-3-methylphenol	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
2-Chlorophenol	µg/l	400	NA	NA	NA	NA	NA	NA	NA	0
2,4-Dichlorophenol	µg/l	790	NA	NA	NA	NA	NA	NA	NA	0
2,4-Dimethyl phenol	µg/l	2,300	NA	NA	NA	NA	NA	NA	NA	0
2,4-Dinitrophenol	µg/l	14,000	NA	NA	NA	NA	NA	NA	NA	0
2-Methyl-4,6-dinitrophenol	µg/l	765	NA	NA	NA	NA	NA	NA	NA	0
2-Nitrophenol	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
4-Nitrophenol	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
Pentachlorophenol	µg/l	7.9	NA	NA	NA	NA	NA	NA	NA	0
Phenol	µg/l	4,600,000	NA	NA	NA	NA	NA	NA	NA	0
2,4,6-Trichlorophenol	µg/l	6.5	NA	NA	NA	NA	NA	NA	NA	0
Metals [c]										
Dissolved Aluminum	µg/l	—	NA	NA	NA	NA	NA	NA	0	0
Total Aluminum	µg/l	—	NA	NA	NA	NA	NA	NA	0	0
Dissolved Arsenic	µg/l	36	NA	NA	NA	NA	NA	NA	0	0
Total Arsenic	µg/l	—	0	0	0	0	0	NA	0	0
Total Antimony	µg/l	—	0	0	0	0	0	0	NA	NA
Dissolved Beryllium	µg/l	—	NA	NA	NA	NA	NA	NA	0	0
Total Beryllium	µg/l	—	0	0	0	0	0	0	0	0
Dissolved Boron	µg/l	—	NA	NA	NA	NA	NA	NA	3700	3900
Total Boron	µg/l	—	NA	NA	NA	NA	NA	NA	3500	3700
Dissolved Cadmium	µg/l	9.3	NA	NA	NA	NA	NA	NA	0	0
Total Cadmium	µg/l	—	0	0	0	0	0	1.7	0	0
Dissolved Chromium[c]	µg/l	50	NA	NA	NA	NA	NA	NA	0	0
Total Chromium	µg/l	—	0	0	0	0	7.05	6.05	NA	NA
Total Chromium +6	µg/l	—	NA	NA	NA	NA	NA	NA	0	0
Dissolved Copper	µg/l	3.1	NA	NA	NA	NA	NA	NA	0	120 *
Total Copper	µg/l	—	0	0	0	0	10.8	10.15	120	120
Dissolved Iron	µg/l	—	NA	NA	NA	NA	NA	NA	14	600
Total Iron	µg/l	—	NA	NA	NA	NA	NA	NA	320	490
Dissolved Lead	µg/l	8.1	NA	NA	NA	NA	NA	NA	0	0
Total Lead	µg/l	—	0	55	43	42	36.5	40.5	0	0
Dissolved Manganese	µg/l	—	NA	NA	NA	NA	NA	NA	0	0
Total Manganese	µg/l	—	NA	NA	NA	NA	NA	NA	0	0
Dissolved Mercury	µg/l	—	NA	NA	NA	NA	NA	NA	0	0
Total Mercury	µg/l	—	0	0	0	0	0	0	0.35	0.35
Dissolved Nickel	µg/l	8.2	NA	NA	NA	NA	NA	NA	0	0
Total Nickel	µg/l	—	0	0	0	0	0	0	0	0
Dissolved Selenium	µg/l	71	NA	NA	NA	NA	NA	NA	390 *	440 *
Total Selenium	µg/l	71	0	0	0	0	3.9	3.5	350 *	450 *
Dissolved Silver	µg/l	—	NA	NA	NA	NA	NA	NA	0	0

Table A-2.2

Summary of 1996-1998
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
CDM

Parameters	Units	CTR Chronic SW Criteria	1996 CDM CDM WB Walk Brdge 1/15/96	1996 CDM CDM SWM SW Marsh 1/15/96	1996 CDM CDM SS1 Saline Sta. 1/15/96	1996 CDM CDM SS2 Saline Sta. 1/15/96	1996 CDM CDM SWM-COMP[a] SW Marsh 4/17/96	1996 CDM CDM SS1-COMP[a] Salinity 1 4/17/96	1998 CDM CDM PVB06-WM Ballona Ch. 7/20/98	1998 CDM CDM PVB07-WM Flap Gates 7/20/98
Total Silver	µg/l	—	0	0	0	0	0	0	0	0
Dissolved Thallium	µg/l	—	NA	NA	NA	NA	NA	NA	0	0
Total Thallium	µg/l	—	0	0	0	0	0	0	0	0
Dissolved Zinc	µg/l	81	NA	NA	NA	NA	NA	NA	210 *	170 *
Total Zinc	µg/l	—	0	0	0	0	0	0	170	160
Pesticides [b]										
beta-BHC	µg/l	0.046	NA	NA	NA	NA	NA	NA	NA	0
delta-BHC	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
O,P'-DDD	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
P,P'-DDD	µg/l	0.00084	NA	NA	NA	NA	NA	NA	NA	0
O,P'-DDE	µg/l	—	NA	NA	NA	NA	NA	NA	NA	0
P,P'-DDE	µg/l	0.00059	NA	NA	NA	NA	NA	NA	NA	0
(Aroclor) PCB-1254	µg/l	0.30	NA	NA	NA	NA	NA	NA	NA	0

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

1996 CDM = 1996, August 14. Camp Dresser & McKee. Ballona Creek Water and Sediment Quality Monitoring Report. 1995/1996, Wet Weather Season, Playa Vista, California.

1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a] Sample result is estimated for chromium, copper, lead and selenium to be between the method detection limit and the reported quantitation limit. Average of the these values is shown.

[b] CTR criteria are from human health organisms only criteria, except for pentachlorophenol.

[c] Criteria for hexavalent chromium was used for chromium

* Indicates exceeds any of the listed criteria or guidance values.

Table A-2.2

Summary of 1996-1998
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
CDM

Parameters	Units	CTR Draft SW Criteria	COP Objectives	COP Chronic Toxicity	Dry Weather			
					Minimum	Maximum	Mean	Hits / Total
Miscellaneous								
Cyanide	mg/l	1	0.004	0.01	0.0017	0.0017	0.0017	1 / 1
Oil and Grease	mg/l	—	25	—	ND	ND	ND	0 / 7
TRPH	mg/l	—	—	—	ND	ND	ND	0 / 1
TPH - Gas	µg/l	—	—	—	ND	ND	ND	0 / 1
MTBE	µg/l	—	—	—	ND	ND	ND	0 / 1
TPH - Diesel	mg/l	—	—	—	ND	ND	ND	0 / 1
Total Phenols	mg/l	—	—	—	0.0019	0.0019	0.0019	1 / 1
Total Coliform	MPN/100ml	—	1000	—	7	300	154	2 / 2
Fecal Coliform	MPN/100ml	—	200	—	4	80	42	2 / 2
Ammonia	mg/l	—	2.4	4	ND	0.94	0.24	1 / 4
Dissolved Calcium	mg/l	—	—	—	200	370,000	120,138	8 / 8
Total Calcium	mg/l	—	—	—	340	360	350	2 / 2
Dissolved Magnesium	mg/l	—	—	—	610	800,000	306,668	8 / 8
Total Magnesium	mg/l	—	—	—	1,000	1,100	1,050	2 / 2
Dissolved Potassium	mg/l	—	—	—	320	330	325	2 / 2
Total Potassium	mg/l	—	—	—	320	340	330	2 / 2
Dissolved Sodium	mg/l	—	—	—	8,200	8,400	8,300	2 / 2
Total Sodium	mg/l	—	—	—	8,100	8,400	8,250	2 / 2
Bicarbonate	mg/l	—	—	—	110	120	115	2 / 2
Carbonate	mg/l	—	—	—	ND	ND	ND	0 / 2
Hydroxide Alkalinity	mg/l	—	—	—	ND	ND	ND	0 / 2
Chloride	mg/l	—	—	—	8,500	20,000	13,917	6 / 6
Nitrate	mg/l	—	—	—	ND	3.9	2.7	4 / 5
Sulfate	mg/l	—	—	—	1,300	2,800	1,917	6 / 6
Alkalinity	mg/l	—	—	—	160	180	175	4 / 4
Hardness	mg/l	—	—	—	2,600	4,200	3,275	4 / 4
Total Phosphate	mg/l	—	—	—	ND	0.18	0.12	6 / 8
Orthophosphate	mg/l	—	—	—	ND	ND	ND	0 / 8
Tributyltin	µg/l	—	0.0014	—	ND	ND	ND	0 / 4
COD	mg/l	—	—	—	1,100	1,800	1,450	2 / 2
pH	su	—	—	—	7.92	8.02	7.96	6 / 6
NH3-N	mg/l	—	2.4	—	ND	ND	ND	0 / 4
Nitrate-N	mg/l	—	—	—	ND	ND	ND	0 / 2
Nitrite-N	mg/l	—	—	—	ND	ND	ND	0 / 2
TKN	mg/l	—	—	—	ND	1.8	0.82	7 / 8
Total Inorganic Nitrogen	mg/l	—	—	—	ND	ND	ND	0 / 2
Specific Conductance	umhos/cm	—	—	—	37,000	52,000	45,167	6 / 6
Total Dissolved Solids	mg/l	—	—	—	17,000	35,000	24,375	8 / 8
Total Suspended Solids	mg/l	—	—	—	27	46	35.25	4 / 4
Volatile Suspended Solids	mg/l	—	—	—	ND	ND	ND	0 / 4
Volatile Solids	mg/l	—	—	—	6,000	6,500	6,250	2 / 2
MBAS	mg/l	—	—	—	0.12	0.17	0.14	4 / 4
Total Organic Carbon	mg/l	—	—	—	1.2	1.7	1.45	2 / 2
BOD	mg/l	—	—	—	ND	12	3.6	4 / 8
Bromide	mg/l	—	—	—	ND	110	55	1 / 2
Salinity	g/l	—	—	—	26	27	26.5	2 / 2
Silica	µg/l	—	—	—	ND	ND	ND	0 / 1
Strontium 90	pci/l	—	—	—	1.76	1.76	1.76	1 / 1

Table A-2.2

Summary of 1996-1998
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
CDM

Parameters	Units	CTR Draft SW Criteria	COP Objectives	COP Chronic Toxicity	Dry Weather			
					Minimum	Maximum	Mean	Hits / Total
Volatile Organics [b]								
Tetrachloroethene	µg/l	8.85	99	—	ND	ND	ND	0 / 4
Toluene	µg/l	200000	85000	—	ND	ND	ND	0 / 5
Methylene chloride	µg/l	1600	—	—	ND	ND	ND	0 / 1
1,2-Dichloroethane	µg/l	99	130	—	ND	ND	ND	0 / 1
Chloroform	µg/l	470	130	—	ND	ND	ND	0 / 1
1,1,1-Trichloroethane	µg/l	—	540000	—	ND	ND	ND	0 / 1
Benzene	µg/l	71	5.9	—	ND	ND	ND	0 / 1
Ethylbenzene	µg/l	29000	4100	—	ND	ND	ND	0 / 1
Semi-Volatile Organic [b]								
Naphthalene	µg/l	—	—	—	ND	3.1	0.78	1 / 4
1,2,3-Trichloropropane	µg/l	—	—	—	ND	2.1	0.53	1 / 4
4-Chloro-3-methylphenol	µg/l	—	—	—	ND	ND	ND	0 / 1
2-Chlorophenol	µg/l	400	—	—	ND	ND	ND	0 / 1
2,4-Dichlorophenol	µg/l	790	—	—	ND	ND	ND	0 / 1
2,4-Dimethylphenol	µg/l	2300	—	—	ND	ND	ND	0 / 1
2,4-Dinitrophenol	µg/l	14000	4	—	ND	ND	ND	0 / 1
2-Methyl-4,6-dinitrophenol	µg/l	765	220	—	ND	ND	ND	0 / 1
2-Nitrophenol	µg/l	—	—	—	ND	ND	ND	0 / 1
4-Nitrophenol	µg/l	—	—	—	ND	ND	ND	0 / 1
Pentachlorophenol	µg/l	7.9	—	—	ND	ND	ND	0 / 1
Phenol	µg/l	4600000	—	—	ND	ND	ND	0 / 1
2,4,6-Trichlorophenol	µg/l	6.5	0.29	—	ND	ND	ND	0 / 1
Metals [a]								
Dissolved Aluminum	µg/l	—	—	—	ND	ND	ND	0 / 2
Total Aluminum	µg/l	—	—	—	ND	ND	ND	0 / 2
Dissolved Arsenic	µg/l	36	32	19	ND	ND	ND	0 / 2
Total Arsenic	µg/l	—	—	—	ND	ND	ND	0 / 8
Total Antimony	µg/l	—	—	—	ND	ND	ND	0 / 6
Dissolved Beryllium	µg/l	—	0.033	—	ND	ND	ND	0 / 2
Total Beryllium	µg/l	—	—	—	ND	ND	ND	0 / 8
Dissolved Boron	µg/l	—	—	—	3,700	3,900	3,800	2 / 2
Total Boron	µg/l	—	—	—	3,500	3,700	3,600	2 / 2
Dissolved Cadmium	µg/l	9.3	4	8	ND	ND	ND	1 / 2
Total Cadmium	µg/l	—	—	—	ND	1.7	0.21	1 / 8
Dissolved Chromium [c]	µg/l	50	8	18	ND	ND	ND	1 / 2
Total Chromium	µg/l	—	—	—	ND	7.05	2.18	2 / 6
Total Chromium +6	µg/l	—	—	—	ND	ND	ND	0 / 2
Dissolved Copper	µg/l	3.1	12	5	ND	120	60	2 / 2
Total Copper	µg/l	—	—	—	ND	120	32.62	2 / 8
Dissolved Iron	µg/l	—	—	—	14	600	307	2 / 2
Total Iron	µg/l	—	—	—	320	490	405	2 / 2
Dissolved Lead	µg/l	8.1	8	22	ND	ND	ND	1 / 2
Total Lead	µg/l	—	—	—	ND	56	27.13	5 / 8
Dissolved Manganese	µg/l	—	—	—	ND	ND	ND	0 / 2
Total Manganese	µg/l	—	—	—	ND	ND	ND	0 / 2
Dissolved Mercury	µg/l	—	0.16	0.4	ND	ND	ND	1 / 2
Total Mercury	µg/l	—	—	—	ND	0.35	0.0875	2 / 8
Dissolved Nickel	µg/l	8.2	20	48	ND	ND	ND	1 / 2
Total Nickel	µg/l	—	—	—	ND	ND	ND	0 / 8
Dissolved Selenium	µg/l	71	60	—	390	440	415	2 / 2
Total Selenium	µg/l	71	—	—	ND	460	102.18	4 / 8
Dissolved Silver	µg/l	—	2.8	3	ND	ND	ND	0 / 2

Table A-2.2

Summary of 1996-1998
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
CDM

Parameters	Units	CTR Draft SW Criteria	COP Objectives	COP Chronic Toxicity	Dry Weather			
					Minimum	Maximum	Mean	Hits / Total
Total Silver	µg/l	—	—	—	ND	ND	ND	0 / 8
Dissolved Thallium	µg/l	—	14	—	ND	ND	ND	0 / 2
Total Thallium	µg/l	—	—	—	ND	ND	ND	0 / 8
Dissolved Zinc	µg/l	81	80	51	170	210	190	3 / 2
Total Zinc	µg/l	—	—	—	ND	170	41.25	2 / 8
Pesticides[c]								
beta-BHC	µg/l	0.046	—	—	ND	ND	ND	0 / 1
delta-BHC	µg/l	—	—	—	ND	ND	ND	0 / 1
O,P'-DDD	µg/l	—	—	—	ND	ND	ND	0 / 1
P,P'-DDD	µg/l	0.00084	—	—	ND	ND	ND	0 / 1
O,P'-DDE	µg/l	—	—	—	ND	ND	ND	0 / 1
P,P'-DDE	µg/l	0.00059	—	—	ND	ND	ND	0 / 1
(Aroclor) PCB-1254	µg/l	0.3	0.000019	—	ND	ND	ND	0 / 1

Notes:

0 - Not Detected
NA - Not Analyzed
ND - Not Detected
1996 CDM = 1996, August 14. Camp Dresser & McKee. Ballona Creek Water and Sediment Quality Monitoring Report, 1995/1996, Wet Weather Season, Playa Vista, California.
1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] Sample result is estimated for chromium, copper, lead and selenium to be between the method detection limit and the reported quantitation limit. Average of the these values is shown.
[b] CTR criteria are from human health organisms only criteria, except for pentachlorophenol.
[c] Criteria for hexavalent chromium was used for chromium
[*] Indicates exceeds any of the listed criteria or guidance values.

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	1998 CDM CDM PVB09-WS Under Culver 7/14/98	2002 CDM CDM NW-1 Red Line 8/2/02	2002 CDM CDM NW-2 Salt Marsh Effluent 8/2/02	2002 CDM CDM SW-1 Under Culver 8/2/02	2002 CDM CDM SW-2 Confluence 8/2/02
General							
Total Coliform	MPN/100ml	—	0	0	0	0	0
Fecal Coliform	MPN/100ml	—	0	0	0	0	0
Dissolved Calcium	mg/l	—	370	NA	NA	NA	NA
Total Calcium	mg/l	—	380	310	350	350	990
Dissolved Magnesium	mg/l	—	1000	NA	NA	NA	NA
Total Magnesium	mg/l	—	1100	950	1000	960	2700
Dissolved Potassium	mg/l	—	350	NA	NA	NA	NA
Total Potassium	mg/l	—	350	330	360	340	930
Dissolved Sodium	mg/l	—	8400	NA	NA	NA	NA
Total Sodium	mg/l	—	8500	8500	9100	8600	23000
Bicarbonate	mg/l	—	100	NA	NA	NA	NA
Carbonate	mg/l	—	96	NA	NA	NA	NA
Hydroxide Alkalinity	mg/l	—	0	0	0	0	0
Chloride	mg/l	—	17000	15000	17000	17000	40000
Bicarbonate Alkalinity	mg/l	—	NA	140	140	160	260
Carbonate Alkalinity	mg/l	—	NA	0	0	16	0
Sulfate	mg/l	—	3700	2200	2200	2400	7500
Total Alkalinity	mg/l	—	NA	140	140	160	260
Hardness	mg/l	—	NA	4700	5400	5800	14000
Total Phosphorus	mg/l	—	0.51	0.044	0.063	0.29	0.66
Orthophosphate	mg/l	—	0	0	0	0	0
COD	mg/l	—	610	430	440	540	2000
pH	su	—	NA	8.13	8.21	8.42	8.25
NH3-N[1]	mg/l	—	0	0.099	0	0	0.2
Nitrate-N	mg/l	—	0	0	0	0	0
Nitrite-N	mg/l	—	0	0	0	0	0
TKN	mg/l	—	1.1	2.2	2	3.1	3.4
Total Inorganic Nitrogen	mg/l	—	0	NA	NA	NA	NA
Specific Conductance	umhos/cm	—	NA	49000	49000	54000	130000
Total Dissolved Solids	mg/l	—	30000	28000	29000	32000	78000
Total Suspended Solids	mg/l	—	32	28	29	30	310
Total Volatile Solids	mg/l	—	4900	3400	3800	3900	9000
Total Organic Carbon	mg/l	—	12	3.7	3.4	11	67
BOD	mg/l	—	75.9	1.4	2	3.9	34
Bromide	mg/l	—	75	60	75	91	190
Salinity	‰	—	36	31	32	36	79
Cyanide	mg/l	—	NA	0	0	0	0
Oil and Grease	mg/l	—	NA	0.53	0.33	0.46	0.62
TPH-Recoverable	mg/l	—	NA	NA	0	0	0.46
TPH-Extractable	mg/l	—	NA	0.069	0	0.076	0.14
TPH-Volatile (C4-C12)	µg/L	—	NA	0	0	9.5	24
Total Phenols	mg/l	—	NA	0	0	0	0
Turbidity	NTU	—	NA	3.9	11	4.5	92

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	1998 CDM CDM PVB09-WS Under Culver 7/14/98	2002 CDM CDM NW-1 Red Line 8/2/02	2002 CDM CDM NW-2 Salt Marsh Effluent 8/2/02	2002 CDM CDM SW-1 Under Culver 8/2/02	2002 CDM CDM SW-2 Confluence 8/2/02
Volatile Organics [4]							
1,1,1,2-Tetrachloroethane	µg/L	—	NA	0	0	0	0
1,1,1-Trichloroethane	µg/L	—	NA	0	0	0	0
1,1,2,2-Tetrachloroethane	µg/L	11	NA	0	0	0	0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	—	NA	0	0	0	0
1,1,2-Trichloroethane	µg/L	42	NA	0	0	0	0
1,1-Dichloroethane	µg/L	—	NA	0	0	0	0
1,1-Dichloroethene	µg/L	3.2	NA	0	0	0	0
1,1-Dichloropropene	µg/L	—	NA	0	0	0	0
1,2,3-Trichlorobenzene	µg/L	—	NA	0	0	0	0
1,2,4-Trichlorobenzene	µg/L	—	NA	0	0	0	0
1,2,4-Trimethylbenzene	µg/L	—	NA	0	0	0	0
1,2-Dibromo-3-chloropropane	µg/L	—	NA	0	0	0	0
1,2-Dibromoethane	µg/L	—	NA	0	0	0	0
1,2-Dichloroethane	µg/L	99	NA	0	0	0	0
1,2-Dichlorobenzene	µg/L	—	NA	0	0	0	0
1,2-Dichloropropane	µg/L	39	NA	0	0	0	0
1,3-Dichlorobenzene	µg/L	—	NA	0	0	0	0
1,3-Dichloropropane	µg/L	—	NA	0	0	0	0
1,3,5-Trimethylbenzene	µg/L	—	NA	0	0	0	0
1,4-Dichlorobenzene	µg/L	—	NA	0	0	0	0
2,2-Dichloropropane	µg/L	—	NA	0	0	0	0
2-Butanone	µg/L	—	NA	0	0	0	0
2-Chlorotoluene	µg/L	—	NA	0	0	0	0
2-Hexanone	µg/L	—	NA	0	0	0	0
4-Chlorotoluene	µg/L	—	NA	0	0	0	0
Acetone	µg/L	—	NA	0	0	4.3	15
Bromodichloromethane	µg/L	—	NA	0	0	0	0
Bromochloromethane	µg/L	—	NA	0	0	0	0
Bromobenzene	µg/L	—	NA	0	0	0	0
Bromomethane	µg/L	—	NA	0	0	0	0
Benzene	µg/L	71	NA	0	0	0	0
Bromoform	µg/L	360	NA	0	0	0	0
Chlorodibromomethane	µg/L	34	NA	0	0	0	0
Chlorobenzene	µg/L	21000	NA	0	0	0	0
Carbon Tetrachloride	µg/L	4.4	NA	0	0	0	0
Chloroethane	µg/L	—	NA	0	0	0	0
Chloroform	µg/L	—	NA	0	0	0	0
Chloromethane	µg/L	—	NA	0	0.35	0	0.28
Carbon Disulfide	µg/L	—	NA	0	0	0	2.6
Dibromomethane	µg/L	—	NA	0	0	0	0
Dichlorodifluoromethane	µg/L	—	NA	0	0	0	0
Ethylbenzene	µg/L	29000	NA	0	0	0	0
Hexachlorobutadiene	µg/L	—	NA	0	0	0	0
Isopropylbenzene	µg/L	—	NA	0	0	0	0
Methyl Isobutyl ketone	µg/L	—	NA	0	0	0	0
m,p-Xylene	µg/L	—	NA	0	0	0	0.2
Methyl-tert-butyl-ether	µg/L	—	NA	0.28	0	0	0
Methylene Chloride	µg/L	1600	NA	0	0	0	0
n-Butylbenzene	µg/L	—	NA	0	0	0	0
n-Propylbenzene	µg/L	—	NA	0	0	0	0

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	1998 CDM CDM PVB09-WS Under Culver 7/14/98	2002 CDM CDM NW-1 Red Line 8/2/02	2002 CDM CDM NW-2 Salt Marsh Effluent 8/2/02	2002 CDM CDM SW-1 Under Culver 8/2/02	2002 CDM CDM SW-2 Confluence 8/2/02
p-Isopropyltoluene	µg/L	—	NA	0	0	0.57	0
o-Xylene	µg/L	—	NA	0	0	0	0
sec-Butylbenzene	µg/L	—	NA	0	0	0	0
tert-Butylbenzene	µg/L	—	NA	0	0	0	0
Styrene	µg/L	—	NA	0	0	0	0
Trichloroethene	µg/L	81	NA	0	0	0	0
Trichlorofluoromethane	µg/L	—	NA	0	0	0	0
Toluene	µg/L	200000	NA	0.15	0.14	0	0
Tetrachloroethene	µg/L	8.85	NA	0	0	0	0
Vinyl Acetate	µg/L	—	NA	0	0	0	0
Vinyl Chloride	µg/L	525	NA	0	0	0	0
Total Xylenes	µg/L	—	NA	0	0	0	0.2
cis-1,2-Dichloroethene	µg/L	—	NA	0	0	0	0
cis-1,3-Dichloropropene	µg/L	—	NA	0	0	0	0
trans-1,2-Dichloroethene	µg/L	—	NA	0	0	0	0
trans-1,3-Dichloropropene	µg/L	—	NA	0	0	0	0
Semi-Volatile Organics [a]							
1,2,4-Trichlorobenzene	µg/L	—	NA	0	0	0	0
1,2-Dichlorobenzene	µg/L	17000	NA	0	0	0	0
1,2-Diphenylhydrazine	µg/L	—	NA	0	0	0	0
1,3-Dichlorobenzene	µg/L	2600	NA	0	0	0	0
1,4-Dichlorobenzene	µg/L	2600	NA	0	0	0	0
2,4,5-Trichlorophenol	µg/L	—	NA	0	0	0	0
2,4,6-Trichlorophenol	µg/L	—	NA	0	0	0	0
2,4-Dichlorophenol	µg/L	790	NA	0	0	0	0
2,4-Dimethylphenol	µg/L	2300	NA	0	0	0	0
2,4-Dinitrophenol	µg/L	14000	NA	0	0	0	0
2,4-Dinitrotoluene	µg/L	—	NA	0	0	0	0
2,6-Dinitrotoluene	µg/L	—	NA	0	0	0	0
2-Chloronaphthalene	µg/L	4300	NA	0	0	0	0
2-Chlorophenol	µg/L	—	NA	0	0	0	0
2-Methylnaphthalene	µg/L	—	NA	0	0	0	0
2-Methylphenol	µg/L	—	NA	0	0	0	0
2-Naphthylamine	µg/L	—	NA	0	0	0	0
2-Nitroaniline	µg/L	—	NA	0	0	0	0
2-Nitrophenol	µg/L	—	NA	0	0	0	0
3,3'-Dichlorobenzidine	µg/L	0.077	NA	0	0	0	0
3/4-Methylphenol	µg/L	—	NA	0	0	0	0
3-Nitroaniline	µg/L	—	NA	0	0	0	0
2,6-Dinitro-2-Methylphenol	µg/L	—	NA	0	0	0	0
4-Bromophenylphenylether	µg/L	—	NA	0	0	0	0
2-Chloro-3-Methylphenol	µg/L	—	NA	0	0	0	0
4-Chloroaniline	µg/L	—	NA	0	0	0	0
4-Chlorophenylphenylether	µg/L	—	NA	0	0	0	0
4-Nitroaniline	µg/L	—	NA	0	0	0	0
4-Nitrophenol	µg/L	—	NA	0	0	0	0
Acenaphthene	µg/L	2700	NA	0	0	0	0
Acenaphthylene	µg/L	—	NA	0	0	0	0
Aniline	µg/L	—	NA	0	0	0	0
Anthracene	µg/L	110000	NA	0	0	0	0
Benzidine	µg/L	—	NA	0	0	0	0

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	1998 CDM CDM PVB09-WS Under Culver 7/14/98	2002 CDM CDM NW-1 Red Line 8/2/02	2002 CDM CDM NW-2 Salt Marsh Effluent 8/2/02	2002 CDM CDM SW-1 Under Culver 8/2/02	2002 CDM CDM SW-2 Confluence 8/2/02
Benzo(a)anthracene	µg/L	0.049	NA	0	0	0	0
Benzo(a)pyrene	µg/L	0.049	NA	0	0	0	0
Benzo(b)fluoranthene	µg/L	0.049	NA	0	0	0	0
Benzo(g,h,i)perylene	µg/L	—	NA	0	0	0	0
Benzo(k)fluoranthene	µg/L	0.049	NA	0	0	0	0
Benzoic Acid	µg/L	—	NA	0	0	0	0
Benzyl Alcohol (phenylmethanol)	µg/L	—	NA	0	0	0	0
bis(2-Chloroethoxy)methane	µg/L	—	NA	0	0	0	0
bis(2-Chloroethyl)ether	µg/L	1.4	NA	0	0	0	0
bis(2-Chloroisopropyl)ether	µg/L	170000	NA	0	0	0	0
bis(2-Ethylhexyl)phthalate	µg/L	5.9	NA	0	0	0	0
Butylbenzylphthalate	µg/L	5200	NA	0	0	0	0
Chrysene	µg/L	0.049	NA	0	0	0	0
Di-n-octylphthalate	µg/L	—	NA	0	0	0	0
Dibenzo(a,h)anthracene	µg/L	0.049	NA	0	0	0	0
Dibenzofuran	µg/L	—	NA	0	0	0	0
Di-n-butylphthalate	µg/L	12000	NA	0	0	0	0
Diethylphthalate	µg/L	120000	NA	0	0	0	0
Dimethylphthalate	µg/L	2900000	NA	0	0	0	0
Fluoranthene	µg/L	370	NA	0	0	0	0
Fluorene	µg/L	14000	NA	0	0	0	0
Hexachlorobenzene	µg/L	0.00077	NA	0	0	0	0
Hexachlorobutadiene	µg/L	50	NA	0	0	0	0
Hexachlorocyclopentadiene	µg/L	17000	NA	0	0	0	0
Hexachloroethane	µg/L	8.9	NA	0	0	0	0
Indeno(1,2,3-c,d)pyrene	µg/L	0.049	NA	0	0	0	0
Isophorone	µg/L	600	NA	0	0	0	0
N-Nitrosodimethylamine	µg/L	8.1	NA	0	0	0	0
N-Nitrosodiphenylamine	µg/L	16	NA	0	0	0	0
N-Nitrosodi-n-propylamine	µg/L	1.4	NA	0	0	0	0
Nitrobenzene	µg/L	1900	NA	0	0	0	0
Naphthalene	µg/L	—	NA	0	0	0	0
Phenanthrene	µg/L	—	NA	0	0	0	0
Pyrene	µg/L	11000	NA	0	0	0	0
Phenol	µg/L	—	NA	0	0	0	0
Metals[a]							
Dissolved Aluminum	µg/l	—	0	NA	NA	NA	NA
Total Aluminum	µg/l	—	0	0	0.18	0.42	3.1
Dissolved Antimony	µg/l	—	NA	0.47	0.41	1.1	2
Total Antimony	µg/l	—	NA	0.6	1.3	0.57	1.7
Dissolved Arsenic	µg/l	36	66 *	4.9	4.8	4.5	29
Total Arsenic	µg/l	—	59	6.3	3.2	2.1	27
Dissolved Beryllium	µg/l	—	0	0	0	0	0
Total Beryllium	µg/l	—	0	0	0	0	0
Dissolved Boron	µg/l	—	4000	NA	NA	NA	NA
Total Boron	µg/l	—	4100	3.9	4	4.3	11
Dissolved Cadmium	µg/l	9.3	0	0	0	0.08	0.11
Total Cadmium	µg/l	—	0	0	0.066	0.18	0.49
Dissolved Chromium[b]	µg/l	50	0	0	0	0.88	3.3
Total Chromium[b]	µg/l	—	0	0.75	1.4	2.4	8.7

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	1998 CDM CDM PVB09-WS Under Culver 7/14/98	2002 CDM CDM NW-1 Red Line 8/2/02	2002 CDM CDM NW-2 Salt Marsh Effluent 8/2/02	2002 CDM CDM SW-1 Under Culver 8/2/02	2002 CDM CDM SW-2 Confluence 8/2/02
Total Chromium (VI)	µg/l	—	0	NA	NA	NA	NA
Dissolved Copper	µg/l	3.1	0	8.3 *	8.4 *	8.4 *	20 *
Total Copper	µg/l	—	0	8.8	9.3	8.4	29
Dissolved Iron	µg/l	—	0	NA	NA	NA	NA
Total Iron	µg/l	—	180	0.19	0.29	0.22	2.9
Dissolved Lead	µg/l	8.1	0	0	0	0	0.45
Total Lead	µg/l	—	0	0.97	1.2	2	12
Dissolved Manganese	µg/l	—	0	NA	NA	NA	NA
Total Manganese	µg/l	—	19	0.031	0.027	0.39	0.68
Dissolved Mercury	µg/l	—	0	0	0	0	0
Total Mercury	µg/l	—	0	0	0	0	0
Dissolved Nickel	µg/l	8.2	0	2.5	2.9	2.4	8.7 *
Total Nickel	µg/l	—	0	3.4	3	2.6	13
Dissolved Selenium	µg/l	71	270 *	8.1	8.8	11	33
Total Selenium	µg/l	—	280	16	15	24	71
Dissolved Silver	µg/l	—	0	0	0	0	0.12
Total Silver	µg/l	—	0	0	0	0	0.31
Dissolved Thallium	µg/l	—	0	0.24	0	0.33	0.75
Total Thallium	µg/l	—	0	0.76	0	0	0
Dissolved Zinc	µg/l	81	19	23	14	23	48
Total Zinc	µg/l	—	17	11	13	14	38
Pesticides							
4,4'-DDD *	µg/L	0.00084	NA	0	0	0	0
4,4'-DDE *	µg/L	0.00059	NA	0	0	0	0
4,4'-DDT	µg/L	0.001	NA	0	0	0	0
Aldrin *	µg/L	0.00014	NA	0	0	0	0
alpha-BHC *	µg/L	0.013	NA	0	0	0.023 *	0.045 *
Chlordane	µg/L	0.004	NA	0	0	0	0
delta-BHC	µg/L	—	NA	0	0	0	0
Dieldrin	µg/L	0.0019	NA	0	0	0	0
Endosulfan I	µg/L	—	NA	0	0	0	0
Endosulfan II	µg/L	—	NA	0	0	0	0
Endosulfan Sulfate *	µg/L	240	NA	0	0	0	0
Endrin	µg/L	0.0023	NA	0	0	0	0
Endrin Aldehyde *	µg/L	0.81	NA	0	0	0	0
gamma-BHC (lindane)	µg/L	—	NA	0	0	0	0
Heptachlor Epoxide	µg/L	0.0036	NA	0	0	0	0
Heptachlor	µg/L	0.0036	NA	0	0	0	0
Methoxychlor	µg/L	—	NA	0	0	0	0
Aroclor-1016	µg/L	0.03	NA	0	0	0	0
Aroclor-1221	µg/L	0.03	NA	0	0	0	0
Aroclor-1232	µg/L	0.03	NA	0	0	0	0
Aroclor-1242	µg/L	0.03	NA	0	0	0	0
Aroclor-1248	µg/L	0.03	NA	0	0	0	0
Aroclor-1254	µg/L	0.03	NA	0	0	0	0
Aroclor-1260	µg/L	0.03	NA	0	0	0	0
PCBs	µg/L	0.03	NA	0	0	0	0
Azinphos-Methyl	µg/L	—	NA	0	0	0	0

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	1998 CDM CDM PVB09-WS Under Culver 7/14/98	2002 CDM CDM NW-1 Red Line 8/2/02	2002 CDM CDM NW-2 Salt Marsh Effluent 8/2/02	2002 CDM CDM SW-1 Under Culver 8/2/02	2002 CDM CDM SW-2 Confluence 8/2/02
Bolstar	µg/L	—	NA	0	0	0	0
Chlorpyrifos	µg/L	—	NA	0	0	0	0
Cuomafos	µg/L	—	NA	0	0	0	0
Demeton	µg/L	—	NA	0	0	0	0
Diazinon	µg/L	—	NA	0	0	0	0
Dichlorvos	µg/L	—	NA	0	0	0	0
Disulfoton	µg/L	—	NA	0	0	0	0
Ethoprop	µg/L	—	NA	0	0	0	0
Fensulfothior	µg/L	—	NA	0	0	0	0
Fention	µg/L	—	NA	0	0	0	0
Merphos	µg/L	—	NA	0	0	0	0
Methyl Parathion	µg/L	—	NA	0	0	0	0
Mevionphos (Phosdrin)	µg/L	—	NA	0	0	0	0
Naled	µg/L	—	NA	0	0	0	0
Phorate	µg/L	—	NA	0	0	0	0
Prothiofos	µg/L	—	NA	0	0	0	0
Ronnel	µg/L	—	NA	0	0	0	0
Tetrachlorvinphos	µg/L	—	NA	0	0	0	0
Trichloronate	µg/L	—	NA	0	0	0	0

Notes:

0 - Not Detected
ND - Not Detected
NA - Not Analyzed
1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlanc
2002 CDM = 2002, August 2. Camp Dresser & McKee. Ballona Wetlands Water Quality Samp
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131
Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] CTR criteria are from human health organisms only criteria except for pentachlorophenol.
[b] Criteria for hexavalent chromium was used for chromium
[c] Sample result is estimated for chromium, copper, lead and selenium to be between the methoi
reported quantitation limit. Average of the these values is shown.
[*] Indicates exceeds any of the listed criteria or guidance values.

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	Dry Weather			
			Minimum	Maximum	Mean	Hits / Total
General						
Total Coliform	MPN/100ml	—	ND	ND	ND	0 / 5
Fecal Coliform	MPN/100ml	—	ND	ND	ND	0 / 5
Dissolved Calcium	mg/l	—	370	370	370	1 / 1
Total Calcium	mg/l	—	310	990	476	5 / 5
Dissolved Magnesium	mg/l	—	1000	1000	1,000	1 / 1
Total Magnesium	mg/l	—	950	2700	1,342	5 / 5
Dissolved Potassium	mg/l	—	350	350	350	1 / 1
Total Potassium	mg/l	—	330	930	462	5 / 5
Dissolved Sodium	mg/l	—	8400	8400	8,400	1 / 1
Total Sodium	mg/l	—	8500	23000	11,520	5 / 5
Bicarbonate	mg/l	—	100	100	100	1 / 1
Carbonate	mg/l	—	96	96	96	1 / 1
Hydroxide Alkalinity	mg/l	—	ND	ND	ND	0 / 5
Chloride	mg/l	—	15000	40000	21,200	5 / 5
Bicarbonate Alkalinity	mg/l	—	140	260	175	4 / 4
Carbonate Alkalinity	mg/l	—	ND	16	4	1 / 4
Sulfate	mg/l	—	2200	7500	3,600	5 / 5
Total Alkalinity	mg/l	—	140	260	175.00	4 / 4
Hardness	mg/l	—	4700	14000	7,475.00	4 / 4
Total Phosphorus	mg/l	—	0.044	0.66	0.31	5 / 5
Orthophosphate	mg/l	—	ND	ND	ND	0 / 5
COD	mg/l	—	430	2000	804	5 / 5
pH	su	—	8.13	8.42	8.25	4 / 4
NH3-N	mg/l	—	ND	0.2	0.06	2 / 5
Nitrate-N	mg/l	—	ND	ND	ND	0 / 5
Nitrite-N	mg/l	—	ND	ND	ND	0 / 5
TKN	mg/l	—	1.1	3.4	2.36	5 / 5
Total Inorganic Nitrogen	mg/l	—	ND	ND	ND	0 / 1
Specific Conductance	umhos/cm	—	49000	130000	70,500	4 / 4
Total Dissolved Solids	mg/l	—	28000	78000	39,400	5 / 5
Total Suspended Solids	mg/l	—	28	310	85.8	5 / 5
Total Volatile Solids	mg/l	—	3400	9000	4,960	5 / 5
Total Organic Carbon	mg/l	—	3.4	67	19.4	5 / 5
BOD	mg/l	—	1.4	75.9	23.4	5 / 5
Bromide	mg/l	—	60	190	98.2	5 / 5
Salinity	‰	—	31	79	42.8	5 / 5
Cyanide	mg/l	—	ND	ND	ND	0 / 4
Oil and Grease	mg/l	—	0.33	0.62	0.49	4 / 4
TPH-Recoverable	mg/l	—	ND	0.46	0.15	1 / 3
TPH-Extractable	mg/l	—	ND	0.14	0.07	3 / 4
TPH-Volatile (C4-C12)	µg/L	—	ND	24	8.36	2 / 4
Total Phenols	mg/l	—	ND	ND	ND	0 / 4
Turbidity	NTU	—	3.9	92	27.85	4 / 4

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	Dry Weather			
			Minimum	Maximum	Mean	Hits / Total
Volatile Organics *						
1,1,1,2-Tetrachloroethane	µg/L	—	ND	ND	ND	0 / 4
1,1,1-Trichloroethane	µg/L	—	ND	ND	ND	0 / 4
1,1,2,2-Tetrachloroethane	µg/L	11	ND	ND	ND	0 / 4
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	—	ND	ND	ND	0 / 4
1,1,2-Trichloroethane	µg/L	42	ND	ND	ND	0 / 4
1,1-Dichloroethane	µg/L	—	ND	ND	ND	0 / 4
1,1-Dichloroethene	µg/L	3.2	ND	ND	ND	0 / 4
1,1-Dichloropropene	µg/L	—	ND	ND	ND	0 / 4
1,2,3-Trichlorobenzene	µg/L	—	ND	ND	ND	0 / 4
1,2,4-Trichlorobenzene	µg/L	—	ND	ND	ND	0 / 4
1,2,4-Trimethylbenzene	µg/L	—	ND	ND	ND	0 / 4
1,2-Dibromo-3-chloropropane	µg/L	—	ND	ND	ND	0 / 4
1,2-Dibromoethane	µg/L	—	ND	ND	ND	0 / 4
1,2-Dichloroethane	µg/L	99	ND	ND	ND	0 / 4
1,2-Dichlorobenzene	µg/L	—	ND	ND	ND	0 / 4
1,2-Dichloropropane	µg/L	39	ND	ND	ND	0 / 4
1,3-Dichlorobenzene	µg/L	—	ND	ND	ND	0 / 4
1,3-Dichloropropane	µg/L	—	ND	ND	ND	0 / 4
1,3,5-Trimethylbenzene	µg/L	—	ND	ND	ND	0 / 4
1,4-Dichlorobenzene	µg/L	—	ND	ND	ND	0 / 4
2,2-Dichloropropane	µg/L	—	ND	ND	ND	0 / 4
2-Butanone	µg/L	—	ND	ND	ND	0 / 4
2-Chlorotoluene	µg/L	—	ND	ND	ND	0 / 4
2-Hexanone	µg/L	—	ND	ND	ND	0 / 4
4-Chlorotoluene	µg/L	—	ND	ND	ND	0 / 4
Acetone	µg/L	—	ND	15	5	2 / 4
Bromodichloromethane	µg/L	—	ND	ND	ND	0 / 4
Bromochloromethane	µg/L	—	ND	ND	ND	0 / 4
Bromobenzene	µg/L	—	ND	ND	ND	0 / 4
Bromomethane	µg/L	—	ND	ND	ND	0 / 4
Benzene	µg/L	71	ND	ND	ND	0 / 4
Bromoform	µg/L	360	ND	ND	ND	0 / 4
Chlorodibromomethane	µg/L	34	ND	ND	ND	0 / 4
Chlorobenzene	µg/L	21000	ND	ND	ND	0 / 4
Carbon Tetrachloride	µg/L	4.4	ND	ND	ND	0 / 4
Chloroethane	µg/L	—	ND	ND	ND	0 / 4
Chloroform	µg/L	—	ND	ND	ND	0 / 4
Chloromethane	µg/L	—	ND	0.35	0	2 / 4
Carbon Disulfide	µg/L	—	ND	2.6	1	1 / 4
Dibromomethane	µg/L	—	ND	ND	ND	0 / 4
Dichlorodifluoromethane	µg/L	—	ND	ND	ND	0 / 4
Ethylbenzene	µg/L	29000	ND	ND	ND	0 / 4
Hexachlorobutadiene	µg/L	—	ND	ND	ND	0 / 4
Isopropylbenzene	µg/L	—	ND	ND	ND	0 / 4
Methyl Isobutyl ketone	µg/L	—	ND	ND	ND	0 / 4
m,p-Xylene	µg/L	—	ND	0.2	0	1 / 4
Methyl-tert-butyl-ether	ug/L	—	ND	0.23	0	1 / 4
Methylene Chloride	µg/L	1600	ND	ND	ND	0 / 4
n-Butylbenzene	µg/L	—	ND	ND	ND	0 / 4
n-Propylbenzene	µg/L	—	ND	ND	ND	0 / 4

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	Dry Weather			
			Minimum	Maximum	Mean	Hits / Total
p-Isopropyltoluene	µg/L	—	ND	0.57	0	1 / 4
o-Xylene	µg/L	—	ND	ND	ND	0 / 4
sec-Butylbenzene	µg/L	—	ND	ND	ND	0 / 4
tert-Butylbenzene	µg/L	—	ND	ND	ND	0 / 4
Styrene	µg/L	—	ND	ND	ND	0 / 4
Trichloroethene	µg/L	81	ND	ND	ND	0 / 4
Trichlorofluoromethane	µg/L	—	ND	ND	ND	0 / 4
Toluene	µg/L	200000	ND	0.15	0	2 / 4
Tetrachloroethene	µg/L	8.85	ND	ND	ND	0 / 4
Vinyl Acetate	µg/L	—	ND	ND	ND	0 / 4
Vinyl Chloride	µg/L	525	ND	ND	ND	0 / 4
Total Xylenes	µg/L	—	ND	0.2	0	1 / 4
cis-1,2-Dichloroethene	µg/L	—	ND	ND	ND	0 / 4
cis-1,3-Dichloropropene	µg/L	—	ND	ND	ND	0 / 4
trans-1,2-Dichloroethene	µg/L	—	ND	ND	ND	0 / 4
trans-1,3-Dichloropropene	µg/L	—	ND	ND	ND	0 / 4
Semi-Volatile Organics [a]						
1,2,4-Trichlorobenzene	µg/L	—	ND	ND	ND	0 / 4
1,2-Dichlorobenzene	µg/L	17000	ND	ND	ND	0 / 4
1,2-Diphenylhydrazine	µg/L	—	ND	ND	ND	0 / 4
1,3-Dichlorobenzene	µg/L	2600	ND	ND	ND	0 / 4
1,4-Dichlorobenzene	µg/L	2600	ND	ND	ND	0 / 4
2,4,5-Trichlorophenol	µg/L	—	ND	ND	ND	0 / 4
2,4,6-Trichlorophenol	µg/L	—	ND	ND	ND	0 / 4
2,4-Dichlorophenol	µg/L	790	ND	ND	ND	0 / 4
2,4-Dimethylphenol	µg/L	2300	ND	ND	ND	0 / 4
2,4-Dinitrophenol	µg/L	14000	ND	ND	ND	0 / 4
2,4-Dinitrotoluene	µg/L	—	ND	ND	ND	0 / 4
2,6-Dinitrotoluene	µg/L	—	ND	ND	ND	0 / 4
2-Chloronaphthalene	µg/L	4300	ND	ND	ND	0 / 4
2-Chlorophenol	µg/L	—	ND	ND	ND	0 / 4
2-Methylnaphthalene	µg/L	—	ND	ND	ND	0 / 4
2-Methylphenol	µg/L	—	ND	ND	ND	0 / 4
2-Naphthylamine	µg/L	—	ND	ND	ND	0 / 4
2-Nitroaniline	µg/L	—	ND	ND	ND	0 / 4
2-Nitrophenol	µg/L	—	ND	ND	ND	0 / 4
3,3'-Dichlorobenzidine	µg/L	0.077	ND	ND	ND	0 / 4
3/4-Methylphenol	µg/L	—	ND	ND	ND	0 / 4
3-Nitroaniline	µg/L	—	ND	ND	ND	0 / 4
2,6-Dinitro-2-Methylphenol	µg/L	—	ND	ND	ND	0 / 4
4-Bromophenylphenylether	µg/L	—	ND	ND	ND	0 / 4
2-Chloro-3-Methylphenol	µg/L	—	ND	ND	ND	0 / 4
4-Chloroaniline	µg/L	—	ND	ND	ND	0 / 4
4-Chlorophenylphenylether	µg/L	—	ND	ND	ND	0 / 4
4-Nitroaniline	µg/L	—	ND	ND	ND	0 / 4
4-Nitrophenol	µg/L	—	ND	ND	ND	0 / 4
Acenaphthene	µg/L	2700	ND	ND	ND	0 / 4
Acenaphthylene	µg/L	—	ND	ND	ND	0 / 4
Aniline	µg/L	—	ND	ND	ND	0 / 4
Anthracene	µg/L	110000	ND	ND	ND	0 / 4
Benzidine	µg/L	—	ND	ND	ND	0 / 4

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	Dry Weather			
			Minimum	Maximum	Mean	Hits / Total
Benzo(a)anthracene	µg/L	0.049	ND	ND	ND	0 / 4
Benzo(a)pyrene	µg/L	0.049	ND	ND	ND	0 / 4
Benzo(b)fluoranthene	µg/L	0.049	ND	ND	ND	0 / 4
Benzo(g,h,i)perylene	µg/L	—	ND	ND	ND	0 / 4
Benzo(k)fluoranthene	µg/L	0.049	ND	ND	ND	0 / 4
Benzoic Acid	µg/L	—	ND	ND	ND	0 / 4
Benzyl Alcohol (phenylmethanol)	µg/L	—	ND	ND	ND	0 / 4
bis(2-Chloroethoxy)methane	µg/L	—	ND	ND	ND	0 / 4
bis(2-Chloroethyl)ether	µg/L	1.4	ND	ND	ND	0 / 4
bis(2-Chloroisopropyl)ether	µg/L	170000	ND	ND	ND	0 / 4
bis(2-Ethylhexyl)phthalate	µg/L	5.9	ND	ND	ND	0 / 4
Butylbenzylphthalate	µg/L	5200	ND	ND	ND	0 / 4
Chrysene	µg/L	0.049	ND	ND	ND	0 / 4
Di-n-octylphthalate	µg/L	—	ND	ND	ND	0 / 4
Dibenzo(a,h)anthracene	µg/L	0.049	ND	ND	ND	0 / 4
Dibenzofuran	µg/L	—	ND	ND	ND	0 / 4
Di-n-butylphthalate	µg/L	12000	ND	ND	ND	0 / 4
Diethylphthalate	µg/L	120000	ND	ND	ND	0 / 4
Dimethylphthalate	µg/L	2900000	ND	ND	ND	0 / 4
Fluoranthene	µg/L	370	ND	ND	ND	0 / 4
Fluorene	µg/L	14000	ND	ND	ND	0 / 4
Hexachlorobenzene	µg/L	0.00077	ND	ND	ND	0 / 4
Hexachlorobutadiene	µg/L	50	ND	ND	ND	0 / 4
Hexachlorocyclopentadiene	µg/L	17000	ND	ND	ND	0 / 4
Hexachloroethane	µg/L	8.9	ND	ND	ND	0 / 4
Indeno(1,2,3-c,d)pyrene	µg/L	0.049	ND	ND	ND	0 / 4
Isophorone	µg/L	600	ND	ND	ND	0 / 4
N-Nitrosodimethylamine	µg/L	8.1	ND	ND	ND	0 / 4
N-Nitrosodiphenylamine	µg/L	16	ND	ND	ND	0 / 4
N-Nitrosodi-n-propylamine	µg/L	1.4	ND	ND	ND	0 / 4
Nitrobenzene	µg/L	1900	ND	ND	ND	0 / 4
Naphthalene	µg/L	—	ND	ND	ND	0 / 4
Phenanthrene	µg/L	—	ND	ND	ND	0 / 4
Pyrene	µg/L	11000	ND	ND	ND	0 / 4
Phenol	µg/L	—	ND	ND	ND	0 / 4
Metals[a]						
Dissolved Aluminum	µg/l	—	ND	ND	ND	0 / 1
Total Aluminum	µg/l	—	ND	3.1	0.74	3 / 5
Dissolved Antimony	µg/l	—	0.41	2	1.00	4 / 4
Total Antimony	µg/l	—	0.57	1.7	1.04	4 / 4
Dissolved Arsenic	µg/l	36	4.5	66	22	5 / 5
Total Arsenic	µg/l	—	2.1	59	20	5 / 5
Dissolved Beryllium	µg/l	—	ND	ND	ND	0 / 5
Total Beryllium	µg/l	—	ND	ND	ND	0 / 5
Dissolved Boron	µg/l	—	4000	4000	4,000	1 / 1
Total Boron	µg/l	—	3.9	4100	825	5 / 5
Dissolved Cadmium	µg/l	9.3	ND	0.11	0.04	2 / 5
Total Cadmium	µg/l	—	ND	0.49	0.15	3 / 5
Dissolved Chromium[b]	µg/l	50	ND	3.3	0.84	2 / 5
Total Chromium[b]	µg/l	—	ND	8.7	2.65	4 / 5

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	Dry Weather			
			Minimum	Maximum	Mean	Hits / Total
Total Chromium (VI)	µg/l	—	ND	ND	ND	1 / 1
Dissolved Copper	µg/l	3.1	ND	20	9.02	4 / 5
Total Copper	µg/l	—	ND	29	10.9	4 / 5
Dissolved Iron	µg/l	—	ND	ND	ND	0 / 1
Total Iron	µg/l	—	0.19	180	37	5 / 5
Dissolved Lead	µg/l	8.1	ND	0.45	0	1 / 5
Total Lead	µg/l	—	ND	12	3	4 / 5
Dissolved Manganese	µg/l	—	ND	ND	ND	0 / 1
Total Manganese	µg/l	—	0.027	19	4.0	5 / 5
Dissolved Mercury	µg/l	—	ND	ND	ND	0 / 5
Total Mercury	µg/l	—	ND	ND	ND	0 / 5
Dissolved Nickel	µg/l	8.2	ND	8.7	3.3	4 / 5
Total Nickel	µg/l	—	ND	13	4.4	4 / 5
Dissolved Selenium	µg/l	71	8.1	270	66	5 / 5
Total Selenium	µg/l	—	15	260	77	5 / 5
Dissolved Silver	µg/l	—	ND	0.12	0.02	1 / 5
Total Silver	µg/l	—	ND	0.31	0.06	1 / 5
Dissolved Thallium	µg/l	—	ND	0.75	0.26	3 / 5
Total Thallium	µg/l	—	ND	0.76	0.15	1 / 5
Dissolved Zinc	µg/l	81	14	48	25	5 / 5
Total Zinc	µg/l	—	11	38	19	5 / 5
Pesticides						
4,4'-DDD [a]	µg/L	0.00084	ND	ND	ND	0 / 4
4,4'-DDE [a]	µg/L	0.00059	ND	ND	ND	0 / 4
4,4'-DDT	µg/L	0.001	ND	ND	ND	0 / 4
Aldrin [a]	µg/L	0.00014	ND	ND	ND	0 / 4
alpha-BHC [a]	µg/L	0.013	ND	0.045	0.017	2 / 4
Chlordane	µg/L	0.004	ND	ND	ND	0 / 4
delta-BHC	µg/L	—	ND	ND	ND	0 / 4
Dieldrin	µg/L	0.0019	ND	ND	ND	0 / 4
Endosulfan I	µg/L	—	ND	ND	ND	0 / 4
Endosulfan II	µg/L	—	ND	ND	ND	0 / 4
Endosulfan Sulfate [a]	µg/L	240	ND	ND	ND	0 / 4
Endrin	µg/L	0.0023	ND	ND	ND	0 / 4
Endrin Aldehyde [a]	µg/L	0.81	ND	ND	ND	0 / 4
gamma-BHC (lindane)	µg/L	—	ND	ND	ND	0 / 4
Heptachlor Epoxide	µg/L	0.0036	ND	ND	ND	0 / 4
Heptachlor	µg/L	0.0036	ND	ND	ND	0 / 4
Methoxychlor	µg/L	—	ND	ND	ND	0 / 4
Aroclor-1016	µg/L	0.03	ND	ND	ND	0 / 4
Aroclor-1221	µg/L	0.03	ND	ND	ND	0 / 4
Aroclor-1232	µg/L	0.03	ND	ND	ND	0 / 4
Aroclor-1242	µg/L	0.03	ND	ND	ND	0 / 4
Aroclor-1248	µg/L	0.03	ND	ND	ND	0 / 4
Aroclor-1254	µg/L	0.03	ND	ND	ND	0 / 4
Aroclor-1260	µg/L	0.03	ND	ND	ND	0 / 4
PCBs	µg/L	0.03	ND	ND	ND	0 / 4
Azinphos-Methyl	µg/L	--	ND	ND	ND	0 / 4

Table A-2.3

Summary of 1998-2002
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
CDM

Parameters	Units	CTR Chronic SW Criteria	Dry Weather			
			Minimum	Maximum	Mean	Hits / Total
Bolstar	µg/L	—	ND	ND	ND	0 / 4
Chloropyrifos	µg/L	—	ND	ND	ND	0 / 4
Cuomafos	µg/L	—	ND	ND	ND	0 / 4
Demeton	µg/L	—	ND	ND	ND	0 / 4
Diazinon	µg/L	—	ND	ND	ND	0 / 4
Dichlorvos	µg/L	—	ND	ND	ND	0 / 4
Disulfoton	µg/L	—	ND	ND	ND	0 / 4
Ethoprop	µg/L	—	ND	ND	ND	0 / 4
Fensulfothion	µg/L	—	ND	ND	ND	0 / 4
Fention	µg/L	—	ND	ND	ND	0 / 4
Merphos	µg/L	—	ND	ND	ND	0 / 4
Methyl Parathion	µg/L	—	ND	ND	ND	0 / 4
Mevionphos (Phosdrin)	µg/L	—	ND	ND	ND	0 / 4
Naled	µg/L	—	ND	ND	ND	0 / 4
Phorate	µg/L	—	ND	ND	ND	0 / 4
Prothiofos	µg/L	—	ND	ND	ND	0 / 4
Ronnel	µg/L	—	ND	ND	ND	0 / 4
Tetrachlorvinphos	µg/L	—	ND	ND	ND	0 / 4
Trichloronate	µg/L	—	ND	ND	ND	0 / 4

Notes:
0 - Not Detected
ND - Not Detected
NA - Not Analyzed
1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
2002 CDM = 2002, August 2. Camp Dresser & McKee. Ballona Wetlands Water Quality Sampling, Dry Weather, Playa Vista, California.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] CTR criteria are from human health organisms only criteria, except for pentachlorophenol.
[b] Criteria for hexavalent chromium was used for chromium
[c] Sample result is estimated for chromium, copper, lead and selenium to be between the method detection limit and the reported quantitation limit. Average of the these values is shown.
* Indicates exceeds any of the listed criteria or guidance values.

Table A-2.4

Summary of 1995-1996
Playa Vista Water Quality Sampling
Wet Weather - Ballona Channel - Saltwater Portion
CDM

Parameters	Units	CTR Acute SW Criteria	1996 CDM CDM SWM SW Marsh 12/13/95	1996 CDM CDM SS1 Saline Sta. 12/13/95	1996 CDM CDM SS2 Saline Sta. 12/13/95	1996 CDM CDM WB Walk Brdge 1/31/96	1996 CDM CDM SWM SW Marsh 1/31/96	1996 CDM CDM SS2 Saline Sta. 1/31/96
General								
Oil and Grease	mg/l	—	0	14	0	0	0	0
Ammonia	mg/l	—	2.4	1.9	1.3	1.1	0	1
Dissolved Calcium	mg/l	—	26000	20000	13000	32000	130000	46000
Dissolved Magnesium	mg/l	—	28000	20000	5400	63000	350000	100000
Chloride	mg/l	—	500	310	60	1100	6900	3800
Nitrate	mg/l	—	22	15	10.2	NA	NA	NA
Sulfate	mg/l	—	83	69	22	140	930	410
Alkalinity	mg/l	—	43	32	30	40	92	59
Hardness	mg/l	—	160	130	54	340	1800	420
Total Phosphate	mg/l	—	2.9	2.3	2.5	0.37	0.46	0.7
Orthophosphate	mg/l	—	0.31	0.4	0.34	0	0	0
Tributyltin	µg/l	—	0	0	0	0.012	0.003	0.012
pH	su	—	7.04	7.17	7.04	7.01	7.37	7.03
NH_3-N	mg/l	—	NA	NA	NA	NA	NA	NA
TKN	mg/l	—	6.4	4.5	3.7	0.43	0.18	0.26
Specific Conductance	µmhos/cm	—	1600	1200	390	4100	23000	6600
Total Dissolved Solids	mg/l	—	1100	700	230	3200	11000	2000
Total Suspended Solids	mg/l	—	NA	NA	NA	NA	NA	NA
Volatile Suspended Solids	mg/l	—	36	21	47	0	18	30
MBAS	mg/l	—	0.081	0.23	0.051	0.43	0.18	0.26
BOD	mg/l	—	178	167	183	33.8	18.3	15
Bromide	µg/l	—	NA	NA	NA	NA	NA	NA
Salinity	µg/l	—	NA	NA	NA	NA	NA	NA
Silica	µg/l	—	NA	NA	NA	NA	NA	NA
Strontium 90	µg/l	—	NA	NA	NA	NA	NA	NA
Volatile Organics								
Tetrachloroethene	µg/l	—	48	12	5.4	0	0	0
Toluene [a]	µg/l	200,000	21	5.9	2.5	0	0	0
Semi-Volatile Organics								
Naphthalene	µg/l	—	0	0	0	0	0	0
1,2,3-Trichloropropane	µg/l	—	0	0	0	0	0	0
Total Metals								
Total Antimony	µg/l	—	0	0	0	0	0	NA
Total Arsenic	µg/l	—	0	0	0	0	0	NA
Total Beryllium	µg/l	—	0	0	0	0	0	NA
Total Cadmium	µg/l	—	0	0	0	0	0	NA
Total Chromium	µg/l	—	0	0	0	0	0	NA
Total Copper	µg/l	—	12	12	13	0	30	NA
Total Lead	µg/l	—	0	0	0	0	0	NA
Total Mercury	µg/l	—	0	0	0	0	0	NA
Total Nickel	µg/l	—	0	13	0	0	0	NA
Total Selenium	µg/l	—	0	0	0	0	0	NA
Total Silver	µg/l	—	0	0	0	0	0	NA
Total Thallium	µg/l	—	0	0	0	0	0	NA
Total Zinc	µg/l	—	96	123	57	61	21	30

Notes:
* Indicates exceeds any of the listed criteria or guidance values.
[a]CTR criteria are from human health organisms only criteria.
1996 CDM = 1996, August 14. Camp Dresser & McKee. Ballona Creek Water and Sediment Quality Monitoring Report, 1995/1996, Wet Weather Season, Playa Vista, California.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

ND - Not Detected
0 - Not Detected
NA - Not Analyzed

Table A-2.4

Summary of 1995-1996
Playa Vista Water Quality Sampling
Wet Weather - Ballona Channel - Saltwater Portion
CDM

Parameters	Units	CTR Acute SW Criteria	1995 CDM CDM SWM-COMP SW Marsh 1/31/96	1996 CDM CDM SS1-COMP Salinity 1 1/31/96	Wet Weather			
					Minimum	Maximum	Mean	Hits / Total
General								
Oil and Grease	mg/l	—	0	0	ND	14	1.75	1 / 8
Ammonia	mg/l	—	NA	NA	ND	2.4	1.28	5 / 6
Dissolved Calcium	mg/l	—	170	160	160	130000	33,416	8 / 8
Dissolved Magnesium	mg/l	—	540	510	510	350000	70,931	8 / 8
Chloride	mg/l	—	NA	NA	60	6900	2,128	6 / 6
Nitrate	mg/l	—	NA	0	ND	22	11.80	3 / 4
Sulfate	mg/l	—	NA	NA	22	930	276	6 / 6
Alkalinity	mg/l	—	NA	NA	30	92	49	6 / 6
Hardness	mg/l	—	NA	NA	54	1800	487	6 / 6
Total Phosphate	mg/l	—	0.26	0.32	0.26	2.9	1.23	8 / 8
Orthophosphate	mg/l	—	0	0	ND	0.4	0.13	3 / 8
Tributyltin	µg/l	—	NA	NA	ND	0.012	0.0045	3 / 6
pH	su	—	7.35	7.79	7.01	7.79	7.23	8 / 8
NH_3-N	mg/l	—	0	0	ND	ND	ND	0 / 2
TKN	mg/l	—	1.1	1.6	0.18	6.4	2.27	8 / 8
Specific Conductance	µmhos/cm	—	78000	52000	390	78000	20,861	8 / 8
Total Dissolved Solids	mg/l	—	240	96	98	11000	2,321	8 / 8
Total Suspended Solids	mg/l	—	89	120	89	120	105	2 / 2
Volatile Suspended Solids	mg/l	—	NA	NA	ND	47	25	5 / 6
MBAS	mg/l	—	NA	NA	0.051	0.43	0.21	6 / 6
BOD	mg/l	—	63.8	30.6	15	183	85.9	8 / 8
Bromide	µg/l	—	NA	NA	ND	ND	ND	0 / 0
Salinity	µg/l	—	NA	NA	ND	ND	ND	0 / 0
Silica	ug/l	—	NA	NA	ND	ND	ND	0 / 0
Strontium 90	ug/l	—	NA	NA	ND	ND	ND	0 / 0
Volatile Organics								
Tetrachloroethene	µg/l	—	NA	NA	ND	46	10.6	3 / 6
Toluene [a]	µg/l	200,000	NA	NA	ND	21	4.9	3 / 6
Semi-Volatile Organics								
Naphthalene	µg/l	—	NA	NA	ND	ND	ND	0 / 6
1,2,3-Trichloropropane	µg/l	—	NA	NA	ND	ND	ND	0 / 6
Total Metals								
Total Antimony	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Arsenic	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Beryllium	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Cadmium	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Chromium	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Copper	µg/l	—	0	0	ND	30	9.57	4 / 7
Total Lead	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Mercury	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Nickel	µg/l	—	0.024	0	ND	13	1.86	2 / 7
Total Selenium	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Silver	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Thallium	µg/l	—	0	0	ND	ND	ND	0 / 7
Total Zinc	µg/l	—	0.015	0.021	0.015	123	48.50	8 / 8

Notes:
* Indicates exceeds any of the listed criteria or guidance values.
[a]CTR criteria are from human health organisms only criteria.
1996 CCM = 1996, August 14. Camp Dresser & McKee. Ballona Creek Water and Sediment Quality Monitoring Report, 1995/1996, Wet Weather Season, Playa Vista, CA
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

ND - Not Detected
0 - Not Detected
NA - Not Analyzed

Table A-2.5

Summary of 1996-1998
Playa Vista Sediment Quality Sampling
Ballona Channel - Saltwater Portion
CDM

Parameter	Units	NOAA SQuIRT Marine Sediment PELs * 1999	1996 CDM CDM SWM-SED SW Marsh 1/15/96	1998 CDM CDM PVB06-SB Ballona Ch. 7/20/98	1998 CDM CDM PVB07-SS Flap Gates 7/20/98	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Hits / Total
General									
Oil and Grease	mg/kg	—	0	2450	68	ND	2450	839	2 / 3
TRPH	mg/kg	—	NA	2300	53	53	2300	1,177	2 / 2
TPH - Gas	mg/kg	—	0	0	0	ND	ND	ND	0 / 3
MTBE	mg/kg	—	NA	0	0	ND	ND	ND	0 / 2
TPH - Diesel	mg/kg	—	0	210	13	ND	210	74.3	2 / 3
Tributyl Tin	µg/kg	—	0	NA	NA	ND	ND	ND	0 / 1
Cyanide	mg/kg	—	NA	0.75	1.7	0.75	1.7	1.23	2 / 2
Silica	mg/kg	—	NA	290	1200	290	1200	745	2 / 2
Strontium 90	pCi/g	—	NA	0.115	ND	0.115	0.115	0.12	1 / 1
Bicarbonate Alkalinity	mg/kg	—	NA	8000	4000	4000	8000	6,000	2 / 2
Carbonate Alkalinity	mg/kg	—	NA	0	200	ND	200	100	1 / 2
Hydroxide Alkalinity	mg/kg	—	NA	0	0	ND	ND	ND	0 / 2
Volatile Solids	mg/kg	—	NA	47,000	21,000	21,000	47,000	34,000	2 / 2
Total Hardness	mg/kg	—	33000	NA	NA	33,000	33,000	33,000	1 / 1
Ammonia - N	mg/kg	—	0	5	0	ND	5	1.67	1 / 3
Bromide	mg/kg	—	NA	0	0	ND	ND	ND	0 / 2
Chloride	mg/kg	—	780	10,000	11,000	780	11,000	7,260	3 / 3
Nitrate - N	mg/kg	—	0	0	0	ND	ND	ND	0 / 3
Nitrite - N	mg/kg	—	NA	0	0	ND	ND	ND	0 / 2
Orthophosphate	mg/kg	—	0	0	0	ND	ND	ND	0 / 3
Salinity	g/kg	—	NA	15.5	8.8	8.8	15.5	12.15	2 / 2
Sulfate	mg/kg	—	490	690	1000	490	1000	727	3 / 3
TIN	mg/kg	—	NA	0	0	ND	ND	ND	0 / 2
TKN	mg/kg	—	252	1100	160	160	1100	504	3 / 3
TOC	mg/kg	—	NA	29500	5600	5600	29500	17,550	2 / 2
Total Phosphorus	mg/kg	—	NA	160	400	160	400	280	2 / 2
Total Phosphate	mg/kg	—	1.2	NA	NA	1.2	1.2	1.20	1 / 1
pH	su	—	7.84	8	7.9	7.84	8	7.91	3 / 3
Calcium	mg/kg	—	7000	9700	5900	5900	9700	7,533	3 / 3
Magnesium	mg/kg	—	3800	3300	6800	3300	6800	4,633	3 / 3
Potassium	mg/kg	—	NA	1600	4400	1600	4400	3,000	2 / 2
Sodium	mg/kg	—	NA	6500	5600	5600	6500	6,050	2 / 2
VOCs									
Methylene chloride	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
1,2-Dichloroethane	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
Chloroform	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
1,1,1-Trichloroethane	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
Benzene	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
Toluene	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
Ethylbenzene	µg/kg	4	0	0	0	ND	ND	ND	0 / 3
SVOCs									
Total phenols	µg/kg	—	0	1.25	3.1	ND	3.1	1.45	2 / 3
4-Chloro-3-methylphenol	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
b 2-Chlorophenol	µg/kg	8	0	0	0	ND	ND	ND	0 / 3
b 2,4-Dichlorophenol	µg/kg	5	0	0	0	ND	ND	ND	0 / 3
b 2,4-Dimethylphenol	µg/kg	18	0	0	0	ND	ND	ND	0 / 3
2,4-Dinitrophenol	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
2-Methyl-4,6-dinitrophenol	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
2-Nitrophenol	µg/kg	—	0	0	0	ND	ND	ND	0 / 3

Table A-2.5

Summary of 1996-1998
Playa Vista Sediment Quality Sampling
Ballona Channel - Saltwater Portion
CDM

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1996 CDM CDM SWM-SED SW Marsh 1/15/96	1998 CDM CDM PVB06-SB Ballona Ch. 7/20/98	1998 CDM CDM PVB07-SS Flap Gates 7/20/98	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
4-Nitrophenol	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
[b] Pentachlorophenol	µg/kg	17	0	0	0	ND	ND	ND	0 / 3
[b] Phenol	µg/kg	130	0	0	0	ND	ND	ND	0 / 3
[b] 2,4,6-Trichlorophenol	µg/kg	6	0	0	0	ND	ND	ND	0 / 3
Metals									
Aluminum	mg/kg	—	NA	2900	9500	2900	9500	6,200	2 / 2
Antimony	mg/kg	—	0	NA	NA	ND	ND	ND	0 / 1
Arsenic	mg/kg	41.6	4	3.45	0	ND	4	2.48	2 / 3
Beryllium	mg/kg	—	0	0	0	ND	ND	ND	0 / 3
Boron	mg/kg	—	NA	40.5	57	40.5	57	48.8	2 / 2
Cadmium	mg/kg	4.21	0	0.74	0	ND	0.74	0.25	1 / 3
Chromium	mg/kg	160.4	9.6	11	17	9.6	17	12.53	3 / 3
Copper	mg/kg	108.2	8.1	33.5	18	8.1	33.5	19.87	3 / 3
Iron	mg/kg	—	NA	7200	18000	7200	18000	12,600	2 / 2
Lead	mg/kg	112.18	14	42.5	14	14	42.5	23.50	3 / 3
[b] Manganese	mg/kg	260	NA	76.5	160	76.5	160	118	2 / 2
Mercury	mg/kg	0.696	0	0.049	0.049	ND	0.049	0.03	2 / 3
Nickel	mg/kg	42.8	7.2	16.5	23	7.2	23	15.6	3 / 3
[b] Selenium	mg/kg	1	0.27	0	0	ND	0.27	0.09	1 / 3
Silver	mg/kg	1.77	0	0	0	ND	ND	ND	0 / 3
Thallium	mg/kg	—	0	0	0	ND	ND	ND	0 / 3
Zinc	mg/kg	271	38	175	61	38	175	91.3	3 / 3
Pesticides and PCBs									
beta-BHC	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
delta-BHC	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
O,P'-DDD	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
P,P'-DDD	µg/kg	7.81	0	0	0	ND	ND	ND	0 / 3
O,P'-DDE	µg/kg	—	0	0	0	ND	ND	ND	0 / 3
P,P'-DDE	µg/kg	374.17	0	0	0	ND	ND	ND	0 / 3
(Aroclor) PCB-1254	µg/kg	188.79	0	0	0	ND	ND	ND	0 / 3

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

PEL - Probable Effects Level, level above which adverse effects are frequently expected

1996 CDM = 1996, August 14. Camp Dresser & McKee. Ballona Creek Water and Sediment Quality Monitoring Report, 1995/1996, Wet Weather Season, Playa Vista, California.

1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables. NOAA HAZMAT Report 99-1, Seattle, WA. Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration. 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

* Indicates exceeds guidance values

Table A-2.5

Summary of 1998
Playa Vista Sediment/Soil Quality Sampling
Ballona Wetlands - Saltwater
CDM

Parameter	Units	NOAA SQuIRT Marine Sediment PELs* 1999	1998 CDM CDM PVB12-SS Monitor Loc. 7/20/98	1998 CDM CDM PVB13-SS Farmland 7/21/98	1998 CDM CDM PVB14-SS Upland 7/15/98	1998 CDM CDM PVB15-SS Monitor Loc. 7/15/98	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
General										
Oil and Grease	mg/kg	—	NA	43	NA	NA	43	43	43	1 / 1
TRPH	mg/kg	—	NA	40	NA	NA	40	40	40	1 / 1
TPH - Gas	mg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
MTBE	mg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
TPH - Diesel	mg/kg	—	NA	6.8	NA	NA	6.8	6.8	6.8	1 / 1
Tributyl Tin	µg/kg	—	NA	NA	NA	NA	ND	ND	ND	0 / 0
Cyanide	mg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
Silica	mg/kg	—	NA	300	NA	NA	300	300	300	1 / 1
Strontium 90	pCi/g	—	NA	0.1	NA	NA	0.1	0.1	0.1	1 / 1
Bicarbonate Alkalinity	mg/kg	—	NA	13000	4600	NA	4600	13000	8,800	2 / 2
Carbonate Alkalinity	mg/kg	—	NA	0	270	NA	ND	270	135	1 / 2
Hydroxide Alkalinity	mg/kg	—	NA	0	0	NA	ND	ND	ND	0 / 2
Volatile Solids	mg/kg	—	NA	56000.0	33000	NA	33000	56000	44,500	2 / 2
Ammonia - N	mg/kg	—	0	0	0	0	ND	ND	ND	0 / 4
Bromide	mg/kg	—	0	0	26	130	ND	130	39	2 / 4
Chloride	mg/kg	—	3600	4400	9200	31000	3600	31000	12,050	4 / 4
Nitrate - N	mg/kg	—	0	0	0	0	ND	ND	ND	0 / 4
Nitrite - N	mg/kg	—	0	0	0	0	ND	ND	ND	0 / 4
Orthophosphate	mg/kg	—	0	0	0	0	ND	ND	ND	0 / 4
Salinity	g/kg	—	7.7	8.6	18	57	7.7	57	22.83	4 / 4
Sulfate	mg/kg	—	1700	4100	2800	4000	1700	4100	3,150	4 / 4
TIN	mg/kg	—	0	0	0	0	ND	ND	ND	0 / 4
TKN	mg/kg	—	110	520	260	310	110	520	300	4 / 4
TOC	mg/kg	—	29000	15000	0	5600	ND	29000	12,400	3 / 4
Total Phosphorus	mg/kg	—	350	250	440	200	200	440	310	4 / 4
pH	su	—	7.7	7.8	7.9	8.1	7.7	8.1	7.9	4 / 4
Calcium	mg/kg	—	NA	12000	7800	NA	7800	12000	9,900	2 / 2
Magnesium	mg/kg	—	NA	9000	8400	NA	8400	9000	8,700	2 / 2
Potassium	mg/kg	—	NA	4700	4500	NA	4500	4700	4,600	2 / 2
Sodium	mg/kg	—	NA	5300	7300	NA	5300	7300	6,300	2 / 2
VOCs										
Methylene chloride	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
1,2-Dichloroethane	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
Chloroform	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
1,1,1-Trichloroethane	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
Benzene	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
Toluene	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
b Ethylbenzene	µg/kg	4	NA	0	NA	NA	ND	ND	ND	0 / 1

Table A-2.6

Summary of 1998
Playa Vista Sediment/Soil Quality Sampling
Ballona Wetlands - Saltwater
CDM

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1998 CDM CDM PVB12-SS Monitor Loc. 7/20/98	1998 CDM CDM PVB13-SS Farmland 7/21/98	1998 CDM CDM PVB14-SS Upland 7/15/98	1998 CDM CDM PVB15-SS Monitor Loc. 7/15/98	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
SVOCs										
Total phenols	µg/kg	—	NA	1.2	NA	NA	1.2	1.2	1.20	1 / 1
4-Chloro-3-methylphenol	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
[b] 2-Chlorophenol	µg/kg	8	NA	0	NA	NA	ND	ND	ND	0 / 1
[b] 2,4-Dichlorophenol	µg/kg	5	NA	0	NA	NA	ND	ND	ND	0 / 1
[b] 2,4-Dimethylphenol	µg/kg	18	NA	0	NA	NA	ND	ND	ND	0 / 1
2,4-Dinitrophenol	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
2-Methyl-4,6-dinitrophenol	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
2-Nitrophenol	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
4-Nitrophenol	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
[b] Pentachlorophenol	µg/kg	17	NA	0	NA	NA	ND	ND	ND	0 / 1
[b] Phenol	µg/kg	130	NA	0	NA	NA	ND	ND	ND	0 / 1
[b] 2,4,6-Trichlorophenol	µg/kg	6	NA	0	NA	NA	ND	ND	ND	0 / 1
Metals										
Aluminum	mg/kg	—	NA	12000	13000	NA	12000	13000	12,500	2 / 2
Arsenic	mg/kg	41.6	NA	5.4	0	NA	ND	5.4	2.7	1 / 2
Beryllium	mg/kg	—	NA	0	0	NA	ND	ND	ND	0 / 2
Boron	mg/kg	—	NA	70	67	NA	67	70	68.5	2 / 2
Cadmium	mg/kg	4.21	NA	0	0	NA	ND	ND	ND	0 / 2
Chromium	mg/kg	160.4	NA	25	22	NA	22	25	23.5	2 / 2
Copper	mg/kg	108.2	NA	28	23	NA	23	28	25.5	2 / 2
Iron	mg/kg	—	NA	24000	22000	NA	22000	24000	23,000	2 / 2
Lead	mg/kg	112.18	NA	24	4.3	NA	4.3	24	14.15	2 / 2
Manganese	mg/kg	—	NA	440	360	NA	360	440	400	2 / 2
Mercury	mg/kg	0.696	NA	0.094	0.05	NA	0.05	0.094	0.07	2 / 2
Nickel	mg/kg	42.8	NA	35	30	NA	30	35	32.5	2 / 2
[b] Selenium	mg/kg	1	NA	0	0	NA	ND	ND	ND	0 / 2
Silver	mg/kg	1.77	NA	0	0	NA	ND	ND	ND	0 / 2
Thallium	mg/kg	—	NA	0	0	NA	ND	ND	ND	0 / 2
Zinc	mg/kg	271	NA	83	59	NA	59	83	71	2 / 2
Pesticides and PCBs										
beta-BHC	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
delta-BHC	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
O,P'-DDD	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
P,P'-DDD	µg/kg	7.81	NA	0	NA	NA	ND	ND	ND	0 / 1
O,P'-DDE	µg/kg	—	NA	0	NA	NA	ND	ND	ND	0 / 1
P,P'-DDE	µg/kg	374.17	NA	0	NA	NA	ND	ND	ND	0 / 1
(Aroclor) PCB-1254	µg/kg	188.79	NA	0	NA	NA	ND	ND	ND	0 / 1

Notes:

0 - Not Detected
NA - Not Analyzed
ND - Not Detected
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed
* indicates exceeds guidance values

Table A-2.7

Summary of 1998
Playa Vista Sediment Quality Sampling
Ballona Wetlands - Saltwater
CDM

Parameter	Units	NOAA SQuiRT Marine Sediment PELs * 1999	1998 CDM CDM PVB08-SS Red Line 7/14/98	1998 CDM CDM PVB09-SS Under Culver 7/14/98	1998 CDM CDM PVB10-SS Confluence 7/20/98	1998 CDM CDM PVB11-SS Gas Co. Rd. 7/21/98	1998 CDM CDM PVB11-SD Gas Co. Rd. 7/21/98	Drainage Channels Minimum	Drainage Channels Maximum	Drainage Channels Mean	Drainage Channels Hits / Total
General											
Oil and Grease	mg/kg	—	NA	NA	NA	NA	62	62	62	62	1 / 1
TRPH	mg/kg	—	NA	NA	NA	NA	50	50	50	50	1 / 1
TPH - Gas	mg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
MTBE	mg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
TPH - Diesel	mg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
Cyanide	mg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
Silica	mg/kg	—	NA	NA	NA	NA	1500	1,500	1,500	1,500	1 / 1
Strontium 90	pCi/g	—	NA	NA	NA	NA	0.23	0.23	0	0.23	1 / 1
Bicarbonate Alkalinity	mg/kg	—	9500	900	53000	800	17000	800	53,000	16,240	5 / 5
Carbonate Alkalinity	mg/kg	—	250	300	900	0	0	ND	900	290	3 / 5
Hydroxide Alkalinity	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
Volatile Solids	mg/kg	—	80000	44000	46000	83000	28000	28,000	83,000	56,200	5 / 5
Ammonia - N	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
Bromide	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
Chloride	mg/kg	—	6700	1800	5700	460	3400	460	6,700	3612	5 / 5
Nitrate - N	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
Nitrite - N	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
Orthophosphate	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
Salinity	g/kg	—	12	17	9.5	0	6.3	ND	17	8.96	4 / 5
Sulfate	mg/kg	—	520	260	840	1400	620	260	1,400	728	5 / 5
TIN	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
TKN	mg/kg	—	440	190	670	680	610	190	680	518	5 / 5
TOC	mg/kg	—	15000	13000	24000	45000	11000	11,000	45,000	21,600	5 / 5
Total Phosphorus	mg/kg	—	270	270	240	260	380	240	380	284	5 / 5
pH	su	—	8.4	8.7	8.4	7.3	8.2	7.3	9	8.2	5 / 5
Calcium	mg/kg	—	20000	4100	30000	3900	18000	3,900	30,000	15,200	5 / 5
Magnesium	mg/kg	—	6300	7300	7700	5500	6700	5,500	7,700	6,700	5 / 5
Potassium	mg/kg	—	3500	5000	3700	2700	3600	2,700	5,000	3,700	5 / 5
Sodium	mg/kg	—	5600	2500	8100	1100	4100	1,100	6,100	3,880	5 / 5
VOCs											
Methylene chloride	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
1,2-Dichloroethane	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
Chloroform	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
1,1,1-Trichloroethane	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
Benzene	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
Toluene	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
Ethylbenzene	µg/kg	4	NA	NA	NA	NA	0	ND	ND	ND	0 / 1

Table A-2.7

Summary of 1998
Playa Vista Sediment Quality Sampling
Ballona Wetlands - Saltwater
CDM

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1998 CDM CDM PVB08-SS Red Line 7/14/98	1998 CDM CDM PVB09-SS Under Culver 7/14/98	1998 CDM CDM PVB10-SS Confluence 7/20/98	1998 CDM CDM PVB11-SS Gas Co. Rd. 7/21/98	1998 CDM CDM PVB11-SD Gas Co. Rd. 7/21/98	Drainage Channels			
								Minimum	Maximum	Mean	Hits / Total
SVOCs											
Total phenols	µg/kg	—	NA	NA	NA	NA	4.5	4.5	5	4.5	1 / 1
4-Chloro-3-methylphenol	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
[b] 2-Chlorophenol	µg/kg	8	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
2,4-Dichlorophenol	µg/kg	5	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
[b] 2,4-Dimethylphenol	µg/kg	18	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
2,4-Dinitrophenol	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
2-Methyl-4,6-dinitrophenol	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
2-Nitrophenol	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
4-Nitrophenol	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
[b] Pentachlorophenol	µg/kg	17	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
[b] Phenol	µg/kg	130	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
[b] 2,4,6-Trichlorophenol	µg/kg	6	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
Metals											
Aluminum	mg/kg	—	7500	12000	7900	10000	8600	7,500	12,000	9,200	5 / 5
Arsenic	mg/kg	41.6	3.7	0	3.6	4	3	ND	4	2.86	4 / 5
Beryllium	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
Boron	mg/kg	—	59	58	55	50	66	50	59	55.6	5 / 5
Cadmium	mg/kg	4.21	0.88	0	0.68	2.1	0	ND	2	0.7	3 / 5
Chromium	mg/kg	160.4	14	18	14	26	15	14	26	17.4	5 / 5
Copper	mg/kg	108.2	18	23	18	63	20	18	63	28.4	5 / 5
Iron	mg/kg	—	12000	18000	14000	17000	17000	12,000	18,000	15,600	5 / 5
Lead	mg/kg	112.18	8.4	17	3.2	170 *	3.4	3.2	170	40.4	5 / 5
[b] Manganese	mg/kg	260	150	150	210	170	260	150	260	188	5 / 5
Mercury	mg/kg	0.696	0.042	0.054	0.028	0.17	0.062	0.028	0	0.0712	5 / 5
Nickel	mg/kg	42.8	18	23	21	29	22	18	29	22.6	5 / 5
[b] Selenium	mg/kg	1	0	0	0	0	0	ND	ND	ND	0 / 5
Silver	mg/kg	1.77	0	0	0	0	0	ND	ND	ND	0 / 5
Thallium	mg/kg	—	0	0	0	0	0	ND	ND	ND	0 / 5
Zinc	mg/kg	271	52	57	40	350 *	44	40	350	108.6	5 / 5
Pesticides and PCBs											
beta-BHC	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
delta-BHC	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
O,P'-DDD	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
P,P'-DDD	µg/kg	7.81	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
O,P'-DDE	µg/kg	—	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
P,P'-DDE	µg/kg	374.17	NA	NA	NA	NA	0	ND	ND	ND	0 / 1
(Aroclor) PCB-1254	µg/kg	188.79	NA	NA	NA	NA	0	ND	ND	ND	0 / 1

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

PEL - Probable Effects Level, level above which adverse effects are frequently expected

1998 CDM = 1998, October. Camp Dresser & McKee. Playa Vista Area A and Area B Wetlands Surface Water and Sediment Monitoring Report.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

* Indicates exceeds guidance values

Appendix A-3

Chambers Group/Soule Existing Data

Table A-3.1

Summary of 1992
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
Chambers Group

Parameters	Units	CTR Chronic SW Criteria	1993 Chambers Chambers Grp. BC Footbrdg 1A 10/24/92	1993 Chambers Chambers Grp. BC 2nd Culv. 2A 10/24/92	1993 Chambers Chambers Grp. In Wetlands 2B 10/24/92	1993 Chambers Chambers Grp. BC Footbrdg 1A 11/7/92	1993 Chambers Chambers Grp. BC 2nd Culv. 2A 11/7/92	1993 Chambers Chambers Grp. In Wetlands 2B 11/7/92
General								
Oil and Grease	mg/l	—	57	19	15	9	7	8
Magnesium	mg/l	—	448	894	900	803	604	1350
Potassium	mg/l	—	177	314	473	368	230	537
Bicarbonate	mg/l	—	163	165	153	226	211	166
Carbonate	mg/l	—	0	0	0	0	0	0
Chloride	mg/l	—	7460	12500	17800	12600	8800	17800
Sulfate	mg/l	—	1180	1430	2520	1700	1200	2350
Total Phosphorus	mg/l	—	0.53	0.19	0	0.3	0.29	0.11
Immediate Oxygen Demand	mg/l	—	0	0	0	0	0	0
COD	mg/l	—	810	180	210	170	85	185
Organic Nitrogen	mg/l	—	6.7	2.5	4.2	1.4	1	1
Total Dissolved Solids	mg/l	—	12000	20400	29900	20700	13600	27600
Volatile Solids	percent	—	0.24	0.33	0.52	0.34	0.27	0.44
Total Organic Carbon	mg/l	—	22	11	10	3.6	-- 3.8	2.4
Volatile Organics'								
Chloromethane	µg/l	—	0	0	0	0	0	0
Bromomethane	µg/l	—	0	0	0	0	0	0
Dichlorodifluoromethane	µg/l	—	0	0	0	0	0	0
Vinyl Chloride	µg/l	525	0	0	0	0	0	0
Chloroethane	µg/l	—	0	0	0	0	0	0
Methylene Chloride	µg/l	1,600	0	0	0	0	0	0
Trichlorofluoromenthane	µg/l	—	0	0	0	0	0	0
1,1-Dichloroethene	µg/l	3.2	0	0	0	0	0	0
1,1-Dichloroethane	µg/l	—	0	0	0	0	0	0
trans-1,2-Dichloroethene	µg/l	140,000	0	0	0	0	0	0
Chloroform	µg/l	470	0	0	0	0	0	0
1,2-Dichloroethane	µg/l	99	0	0	0	0	0	0
1,1,1-Trichloroethane	µg/l	—	0	0	0	0	0	0
Carbon Tetrachloride	µg/l	4.4	0	0	0	0	0	0
Bromodichloromethane	µg/l	46	0	0	0	0	0	0
1,2-Dichloropropane	µg/l	39	0	0	0	0	0	0
trans-1,3-Dichloropropene	µg/l	1,700	0	0	0	0	0	0
Trichloroethene	µg/l	81	0	0	0	0	0	0
Dibromochloromethane	µg/l	34	0	0	0	0	0	0
1,1,2-Trichloroethane	µg/l	42	0	0	0	0	0	0
cis-1,3-Dichloropropene	µg/l	1,700	0	0	0	0	0	0
2-Chloroethylvinyl ether	µg/l	—	0	0	0	0	0	0
Bromoform	µg/l	360	0	0	0	0	0	0
1,1,2,2-Tetrachloroethane	µg/l	11	0	0	0	0	0	0
Tetrachloroethene	µg/l	8.85	0	0	0	0	0	0
Chlorobenzene	µg/l	21,000	0	0	0	0	0	0
1,4-Dichlorobenzene	µg/l	2,600	0	0	0	0	0	0
Benzene	µg/l	71	0	0	0	0	0	0
1,2-Dichlorobenzene	µg/l	17,000	0	0	0	0	0	0
1,3-Dichlorobenzene	ug/l	2,600	0	0	0	0	0	0
Ethylbenzene	µg/l	29,000	0	0	0	0	0	0
Toluene	µg/l	200,000	0	0	0	0	0	0
Total Xylenes	µg/l	—	0	0	0	0	0	0

Table A-3.1

Summary of 1992
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
Chambers Group

Parameters	Units	CTR Chronic SW Criteria	1993 Chambers Chambers Grp. BC Footbrdg 1A 10/24/92	1993 Chambers Chambers Grp. BC 2nd Culv. 2A 10/24/92	1993 Chambers Chambers Grp. In Wetlands 2B 10/24/92	1993 Chambers Chambers Grp. BC Footbrdg 1A 11/7/92	1993 Chambers Chambers Grp. BC 2nd Culv. 2A 11/7/92	1993 Chambers Chambers Grp. In Wetlands 2B 11/7/92
Metals [a]								
Dissolved Arsenic	µg/l	36	0	0	0	0	0	0
Dissolved Cadmium	µg/l	9.3	0	0	0	0	0	0
Dissolved Chromium [b]	µg/l	50	4	0	0	4	0	4
Dissolved Copper	µg/l	3.1	13 *	10 *	0	0	0	0
Dissolved Iron	µg/l	—	880	430	1470	0	110	0
Dissolved Lead	µg/l	8.1	0	0	0	0	0	0
Dissolved Manganese	µg/l	—	120	50	20	20	40	0
Dissolved Mercury	µg/l	—	0	0	0	0	0	0
Dissolved Nickel	µg/l	8.2	0	0	0	0	0	0
Dissolved Zinc	µg/l	81	90 *	40	50	20	30	90 *
Pesticides and PCBs [c]								
Aldrin [d]	µg/l	3	0	0	0	0	0	0
alpha-BHC	µg/l	0.013	0	0	0	0	0	0
beta-BHC	µg/l	0.046	0	0	0	0	0	0
Lindane	µg/l	0.063	0	0	0	0	0	0
Chlordane	µg/l	0.004	0	0	0	0	0	0
Dieldrin	µg/l	0.0019	0	0	0	0	0	0
Endrin	µg/l	0.0023	0	0	0	0	0	0
Toxaphene	µg/l	0.0002	0	0	0	0	0	0
Heptachlor	µg/l	0.0036	0	0	0	0	0	0
Heptachlor Epoxide	µg/l	0.0036	0	0	0	0	0	0
O,P'-DDT	µg/l	—	0	0	0	0	0	0
P,P'-DDT	µg/l	0.001	0	0	0	0	0	0
O,P'-DDD	µg/l	—	0	0	0	0	0	0
P,P'-DDD	µg/l	0.00084	0	0	0	0	0	0
P,P'-DDE	µg/l	0.00059	0	0	0	0	0	0
Total Pesticides	µg/l	—	0	0	0	0	0	0
PCB-1016	µg/l	0.03	0	0	0	0	0	0
PCB-1221	µg/l	0.03	0	0	0	0	0	0
PCB-1232	µg/l	0.03	0	0	0	0	0	0
PCB-1242	µg/l	0.03	0	0	0	0	0	0
PCB-1248	µg/l	0.03	0	0	0	0	0	0
PCB-1254	µg/l	0.03	0	0	0	0	0	0
PCB-1260	µg/l	0.03	0	0	0	0	0	0
Total Chlorinated Hydrocarbons Detected	µg/l	—	0	0	0	0	0	0

Notes:

1993 Chambers - 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a] The Chambers 1993 Report does not indicate whether the metals values reported are dissolved or total. Here they are assumed to represent dissolved metals concentrations.

[b] Value for hexavalent chromium was used for chromium

[c] CTR criteria are from human health organisms only criteria, except for PCBs, Aldrin, Chlordane, Toxaphene, Heptachlor, and P,P'-DDT.

[d] CTR Criteria is from the acute saltwater criteria.

0 - Not Detected
NA - Not Analyzed
ND - Not Detected
* Indicates exceeds any of the listed criteria or guidance values.

Table A-3.1

Summary of 1992
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
Chambers Group

Parameters	Units	CTR Draft SW Criteria	COP Objectives	COP Chronic Toxicity	Dry Weather			
					Minimum	Maximum	Mean	Hits / Total
General								
Oil and Grease	mg/l	—	—	—	7	57	19.17	6 / 6
Magnesium	mg/l	—	—	—	448	1350	800	6 / 6
Potassium	mg/l	—	—	—	177	537	350	6 / 6
Bicarbonate	mg/l	—	—	—	153	226	181	6 / 6
Carbonate	mg/l	—	—	—	ND	ND	ND	0 / 6
Chloride	mg/l	—	—	—	7460	17800	12827	6 / 6
Sulfate	mg/l	—	—	—	1130	2520	1722	6 / 6
Total Phosphorus	mg/l	—	—	—	ND	0.53	0.24	5 / 6
Immediate Oxygen Demand	mg/l	—	—	—	ND	ND	ND	0 / 6
COD	mg/l	—	—	—	85	810	273	6 / 6
Organic Nitrogen	mg/l	—	—	—	1	6.7	2.8	6 / 6
Total Dissolved Solids	mg/l	—	—	—	12000	29900	20700	6 / 6
Volatile Solids	percent	—	—	—	0.24	0.52	0.36	6 / 6
Total Organic Carbon	mg/l	—	—	—	2.4	22	9	6 / 6
Volatile Organics[a]								
Chloromethane	µg/l	—	—	—	ND	ND	ND	0 / 6
Bromomethane	µg/l	—	—	—	ND	ND	ND	0 / 6
Dichlorodifluoromethane	µg/l	—	—	—	ND	ND	ND	0 / 6
Vinyl Chloride	µg/l	525	36	—	ND	ND	ND	0 / 6
Chloroethane	µg/l	—	—	—	ND	ND	ND	0 / 6
Methylene chloride	µg/l	1600	—	—	ND	ND	ND	0 / 6
Trichlorofluoromethane	µg/l	—	—	—	ND	ND	ND	0 / 6
1,1-Dichloroethene	µg/l	3.2	7100	—	ND	ND	ND	0 / 6
1,1-Dichloroethane	µg/l	—	—	—	ND	ND	ND	0 / 6
trans-1,2-Dichloroethene	µg/l	140000	—	—	ND	ND	ND	0 / 6
Chloroform	µg/l	470	130	—	ND	ND	ND	0 / 6
1,2-Dichloroethane	µg/l	99	130	—	ND	ND	ND	0 / 6
1,1,1-Trichloroethane	µg/l	—	540000	—	ND	ND	ND	0 / 6
Carbon Tetrachloride	µg/l	4.4	0.9	—	ND	ND	ND	0 / 6
Bromodichloromethane	µg/l	46	—	—	ND	ND	ND	0 / 6
1,2-Dichloropropane	µg/l	39	—	—	ND	ND	ND	0 / 6
trans-1,3-Dichloropropene	µg/l	1700	8.9	—	ND	ND	ND	0 / 6
Trichloroethene	µg/l	81	27	—	ND	ND	ND	0 / 6
Dibromochloromethane	µg/l	34	—	—	ND	ND	ND	0 / 6
1,1,2-Trichloroethane	µg/l	42	43000	—	ND	ND	ND	0 / 6
cis-1,3-Dichloropropane	µg/l	1700	8.9	—	ND	ND	ND	0 / 6
2-Chloroethylvinyl ether	µg/l	—	—	—	ND	ND	ND	0 / 6
Bromoform	µg/l	360	—	—	ND	ND	ND	0 / 6
1,1,2,2-Tetrachloroethane	µg/l	11	1200	—	ND	ND	ND	0 / 6
Tetrachloroethene	µg/l	8.85	99	—	ND	ND	ND	0 / 6
Chlorobenzene	µg/l	21000	570	—	ND	ND	ND	0 / 6
1,4-Dichlorobenzene	µg/l	2600	18	—	ND	ND	ND	0 / 6
Benzene	µg/l	71	5.9	—	ND	ND	ND	0 / 6
1,2-Dichlorobenzene	µg/l	17000	—	—	ND	ND	ND	0 / 6
1,3-Dichlorobenzene	µg/l	2600	—	—	ND	ND	ND	0 / 6
Ethylbenzene	µg/l	29000	4100	—	ND	ND	ND	0 / 6
Toluene	µg/l	200000	85000	—	ND	ND	ND	0 / 6
Total xylenes	µg/l	—	—	—	ND	ND	ND	0 / 6

Table A-3.1

Summary of 1992
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
Chambers Group

Parameters	Units	CTR Draft SW Criteria	COP Objectives	COP Chronic Toxicity	Dry Weather			
					Minimum	Maximum	Mean	Hits / Total
Metals[a]								
Dissolved Arsenic	µg/l	36	32	19	ND	ND	ND	0 / 6
Dissolved Cadmium	µg/l	9.3	4	8	ND	ND	ND	0 / 6
Dissolved Chromium[b]	µg/l	50	8	—	ND	4	2	3 / 6
Dissolved Copper	µg/l	3.1	12	5	ND	13	3.8	1 / 6
Dissolved Iron	µg/l	—	—		ND	1470	482	4 / 6
Dissolved Lead	µg/l	8.1	8	22	ND	ND	ND	0 / 6
Dissolved Manganese	µg/l	—	—	—	ND	120	42	5 / 6
Dissolved Mercury	µg/l	—	0.16	—	ND	ND	ND	0 / 6
Dissolved Nickel	µg/l	8.2	20	48	ND	ND	ND	0 / 6
Dissolved Zinc	µg/l	81	80	51	20	90	53	6 / 6
Pesticides and PCBs[c]								
Aldrin[d]	µg/l	3	0.000022	—	ND	ND	ND	0 / 6
alpha-BHC	µg/l	0.013	—	—	ND	ND	ND	0 / 6
beta-BHC	µg/l	0.046	—	—	ND	ND	ND	0 / 6
Lindane	µg/l	0.063	—	—	ND	ND	ND	0 / 6
Chlordane	µg/l	0.004	0.000023	—	ND	ND	ND	0 / 6
Dieldrin	µg/l	0.0019	0.00004	—	ND	ND	ND	0 / 6
Endrin	µg/l	0.0023	0.004	—	ND	ND	ND	0 / 6
Toxaphene	µg/l	0.0002	0.00021	—	ND	ND	ND	0 / 6
Heptachlor	µg/l	0.0036	0.00072	—	ND	ND	ND	0 / 6
Heptachlor Epoxide	µg/l	0.0036	—	—	ND	ND	ND	0 / 6
O,P'-DDT	µg/l	—	0.00017	—	ND	ND	ND	0 / 6
P,P'-DDT	µg/l	0.001	0.00017	—	ND	ND	ND	0 / 6
O,P'-DDD	µg/l	—	—	—	ND	ND	ND	0 / 6
P,P'-DDD	µg/l	0.00084	—	—	ND	ND	ND	0 / 6
P,P'-DDE	µg/l	0.00059	—	—	ND	ND	ND	0 / 6
Total Pesticides	µg/l	—	—	—	ND	ND	ND	0 / 6
PCB-1016	µg/l	0.03	0.000019	—	ND	ND	ND	0 / 6
PCB-1221	µg/l	0.03	0.000019	—	ND	ND	ND	0 / 6
PCB-1232	µg/l	0.03	0.000019	—	ND	ND	ND	0 / 6
PCB-1242	µg/l	0.03	0.000019	—	ND	ND	ND	0 / 6
PCB-1248	µg/l	0.03	0.000019	—	ND	ND	ND	0 / 6
PCB-1254	µg/l	0.03	0.000019	—	ND	ND	ND	0 / 6
PCB-1260	µg/l	0.03	0.000019	—	ND	ND	ND	0 / 6
Total Chlorinated Hydrocarbons Detected	µg/l	—	—	—	ND	ND	ND	0 / 6

Notes:

1993 Chambers - 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a]The Chambers 1993 Report does not indicate whether the metals values reported are dissolved or total. Here they are assumed to represent dissolved metals concentrations.

[b]Value for hexavalent chromium was used for chromium

[c]CTR criteria are from human health organisms only criteria,except for PCBs, Aldrin, Chlordane, Toxaphene, Heptachlor, and P,P'-DDT.

[d]CTR Criteria is from the acute saltwater criteria.

0 - Not Detected
NA - Not Analyzed
ND - Not Detected
* Indicates exceeds any of the listed criteria or guidance values.

Table A-3.2

Summary of 1992
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
Chambers Group

Parameters	Units	CTR Chronic SW Criteria	COP Objectives	COP Chronic Toxicity	1993 Chambers Chambers Grp. BC Mouth 0A	Dry Weather			
					11/7/92	Minimum	Maximum	Mean	Hits / Total
General									
Oil and Grease	mg/l	—	25	—	8	8	8	8	1 / 1
Magnesium	mg/l	—	—	—	942	942	942	942	1 / 1
Potassium	mg/l	—	—	—	475	475	475	475	1 / 1
Bicarbonate	mg/l	—	—	—	188	188	188	188	1 / 1
Carbonate	mg/l	—	—	—	0	ND	ND	ND	0 / 1
Chloride	mg/l	—	—	—	16100	16,100	16,100	16,100	1 / 1
Sulfate	mg/l	—	—	—	1850	1,850	1,850	1,850	1 / 1
Total Phosphorus	mg/l	—	—	—	0.17	0.17	0.17	0.17	1 / 1
Immediate Oxygen Demand	mg/l	—	—	—	0	ND	ND	ND	0 / 1
COD	mg/l	—	—	—	175	175	175	175	1 / 1
Organic Nitrogen	mg/l	—	—	—	1.2	1.2	1.2	1.2	1 / 1
Total Dissolved Solids	mg/l	—	—	—	24900	24,900	24,900	24,900	1 / 1
Volatile Solids	percent	—	—	—	0.44	0.44	0.44	0.44	1 / 1
Total Organic Carbon	mg/l	—	—	—	3	3	3	3	1 / 1
Volatile Organics [a]									
Chloromethane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
Bromomethane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
Dichlorodifluoromethane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
Vinyl Chloride	µg/l	525	36	—	0	ND	ND	ND	0 / 1
Chloroethane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
Methylene Chloride	µg/l	1600	—	—	0	ND	ND	ND	0 / 1
Trichlorofluoromenthane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
1,1-Dichloroethene	µg/l	—	7,100	—	0	ND	ND	ND	0 / 1
1,1-Dichloroethane	µg/l	46	—	—	0	ND	ND	ND	0 / 1
trans-1,2-Dichloroethene	µg/l	—	—	—	0	ND	ND	ND	0 / 1
Chloroform	µg/l	470	130	—	0	ND	ND	ND	0 / 1
1,2-Dichloroethane	µg/l	99	130	—	0	ND	ND	ND	0 / 1
1,1,1-Trichloroethane	µg/l	—	540,000	—	0	ND	ND	ND	0 / 1
Carbon Tetrachloride	µg/l	0.25	0.9	—	0	ND	ND	ND	0 / 1
Bromodichloromethane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
1,2-Dichloropropane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
trans-1,3-Dichloropropene	µg/l	—	8.9	—	0	ND	ND	ND	0 / 1
Trichloroethene	µg/l	—	27	—	0	ND	ND	ND	0 / 1
Dibromochloromethane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
1,1,2-Trichloroethane	µg/l	42	43,000	—	0	ND	ND	ND	0 / 1
cis-1,3-Dichloropropene	µg/l	—	8.9	—	0	ND	ND	ND	0 / 1
2-Chloroethylvinyl ether	µg/l	—	—	—	0	ND	ND	ND	0 / 1
Bromoform	µg/l	360	—	—	0	ND	ND	ND	0 / 1
1,1,2,2-Tetrachloroethane	µg/l	11	1,200	—	0	ND	ND	ND	0 / 1
Tetrachloroethene	µg/l	8.85	99	—	0	ND	ND	ND	0 / 1
Chlorobenzene	µg/l	680	570	—	0	ND	ND	ND	0 / 1
1,3-Dichlorobenzene	µg/l	2600	—	—	0	ND	ND	ND	0 / 1
1,2-Dichlorobenzene	µg/l	17000	—	—	0	ND	ND	ND	0 / 1
Benzene	µg/l	71	5.9	—	0	ND	ND	ND	0 / 1
1,4-Dichlorobenzene	µg/l	2600	18	—	0	ND	ND	ND	0 / 1
Ethylbenzene	µg/l	29000	4,100	—	0	ND	ND	ND	0 / 1
Toluene	µg/l	200000	85,000	—	0	ND	ND	ND	0 / 1

Table A-3.2

Summary of 1992
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
Chambers Group

Parameters	Units	CTR Chronic SW Criteria	COP Objectives	COP Chronic Toxicity	1993 Chambers Chambers Grp. BC Mouth 0A	Dry Weather			
					11/7/92	Minimum	Maximum	Mean	Hits / Total
Total Xylenes	µg/l	—	—	—	0	ND	ND	ND	0 / 1
Metals [b,c]									
Dissolved Arsenic	µg/l	36	32	19	0	ND	ND	ND	0 / 1
Dissolved Cadmium	µg/l	9.3	4	8	0	ND	ND	ND	0 / 1
Dissolved Chromium [d]	µg/l	50	8	18	0	ND	ND	ND	0 / 1
Dissolved Copper	µg/l	3.1	12	5	0	ND	ND	ND	0 / 1
Dissolved Iron	µg/l	—	—	—	50	50	50	50	1 / 1
Dissolved Lead	µg/l	8.1	8	22	0	ND	ND	ND	0 / 1
Dissolved Manganese	µg/l	—	—	—	2	2	2	2	1 / 1
Dissolved Mercury	µg/l	—	0.16	0.4	0	ND	ND	ND	0 / 1
Dissolved Nickel	µg/l	8.2	20	48	10 *	10	10	10	1 / 1
Dissolved Zinc	µg/l	81	80	51	60 *	60	60	60	1 / 1
Pesticides and PCBs [a]									
Aldrin [e]	µg/l	1.3	0.000022	—	0	ND	ND	ND	0 / 1
alpha-BHC	µg/l	0.013	—	—	0	ND	ND	ND	0 / 1
beta-BHC	µg/l	0.046	—	—	0	ND	ND	ND	0 / 1
Lindane	µg/l	—	—	—	0	ND	ND	ND	0 / 1
Chlordane	µg/l	0.004	0.000023	—	0	ND	ND	ND	0 / 1
Dieldrin	µg/l	0.0019	0.00004	—	0	ND	ND	ND	0 / 1
Endrin	µg/l	0.0023	0.004	—	0	ND	ND	ND	0 / 1
Toxaphene	µg/l	0.0002	—	—	0	ND	ND	ND	0 / 1
Heptachlor	µg/l	0.0036	0.00021	—	0	ND	ND	ND	0 / 1
Heptachlor Epoxide	µg/l	0.0036	0.00072	—	0	ND	ND	ND	0 / 1
O,P'-DDT	µg/l	—	0.00017	—	0	ND	ND	ND	0 / 1
P,P'-DDT	µg/l	0.001	0.00017	—	0	ND	ND	ND	0 / 1
O,P'-DDD	µg/l	—	—	—	0	ND	ND	ND	0 / 1
P,P'-DDD	µg/l	0.00084	—	—	0	ND	ND	ND	0 / 1
P,P'-DDE	µg/l	0.00059	—	—	0	ND	ND	ND	0 / 1
Total Pesticides	µg/l	—	—	—	0	ND	ND	ND	0 / 1
PCB-1016	µg/l	0.03	0.000019	—	0	ND	ND	ND	0 / 1
PCB-1221	µg/l	0.03	0.000019	—	0	ND	ND	ND	0 / 1
PCB-1232	µg/l	0.03	0.000019	—	0	ND	ND	ND	0 / 1
PCB-1242	µg/l	0.03	0.000019	—	0	ND	ND	ND	0 / 1
PCB-1248	µg/l	0.03	0.000019	—	0	ND	ND	ND	0 / 1
PCB-1254	µg/l	0.03	0.000019	—	0	ND	ND	ND	0 / 1
PCB-1260	µg/l	0.03	0.000019	—	0	ND	ND	ND	0 / 1
Total Chlorinated Hydrocarbons Detected	µg/l	—	—	—	0	ND	ND	ND	0 / 1

Notes:

1993 Chambers - 1993. March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.

COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.

COP Chronic Toxicity = 1997. California State Water Resources Control Board. California Ocean Plan. Table D Conservative Estimates of Chronic Toxicity.

[a] CTR criteria are from human health organisms only criteria, except for PCBs, Aldrin, Chlordane, Toxaphene, Heptachlor, and P,P'-DDT.

[b] The Chambers 1993 Report does not indicate whether the metals values reported are dissolved or total. Here they are assumed to represent dissolved metals concentrations.

[c] Values in the California Ocean Plan did not specify whether objectives were for total or dissolved metals. Dissolved metals was assumed.

[d] Values for hexavalent chromium was used for chromium.

[e] CTR Criteria is from the acute saltwater criteria.

* Indicates exceeds any of the listed criteria or guidance values.

0 - Not Detected
NA - Not Analyzed
ND - Not Detected

Table A-3.3

Summary of 1992
Playa Vista Water Quality Sampling
Wet Weather - Ballona Channel - Saltwater Portion
Chambers Group

Parameters	Units	CTR Acute SW Criteria	1993 Chambers Chambers Grp. BC Footbrdg 1A 12/5/92	1993 Chambers Chambers Grp. BC 2nd Culv. 2A 12/5/92	1993 Chambers Chambers Grp. BC Yellow Pipe 5A 12/5/92	1993 Chambers Chambers Grp. BC 1st Culv 6A 12/5/92	1993 Chambers Chambers Grp. In Wetlands 2B 12/5/92	Wet Weather Minimum	Wet Weather Maximum	Wet Weather Mean	Wet Weather Hits / Total
General											
Oil and Grease	mg/l	—	16	16	10	6	8	6	16	11.2	5 / 5
Magnesium	mg/l	—	278	278	280	309	624	278	624	354	5 / 5
Potassium	mg/l	—	96	96	96	109	272	96	272	134	5 / 5
Bicarbonate	mg/l	—	140	153	159	156	171	140	171	156	5 / 5
Carbonate	mg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Chloride	mg/l	—	4900	4800	5980	11300	12800	4,800	12,800	7,896	5 / 5
Sulfate	mg/l	—	550	500	810	660	1620	500	1,620	828	5 / 5
Total Phosphorus	mg/l	—	0.88	0.55	0.59	0.49	0.18	0.18	0.88	0.54	5 / 5
Immediate Oxygen Demand	mg/l	—	1.2	1.2	1.2	1.2	0	ND	1.2	0.96	4 / 5
COD	mg/l	—	105	115	110	140	170	105	170	128	5 / 5
Organic Nitrogen	mg/l	—	2.4	3.4	3.4	4	1.8	1.8	4	3	5 / 5
Total Dissolved Solids	mg/l	—	8700	8300	8900	9100	22500	8,300	22,500	11,500	5 / 5
Volatile Solids	%	—	0.17	0.16	0.18	0.21	0.41	0.16	0.41	0.23	5 / 5
Total Organic Carbon	mg/l	—	19	21	20	20	6	6	21	17.2	5 / 5
VOCs [a]											
Chloromethane	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Bromomethane	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Dichlorodifluoromethane	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Vinyl Chloride	µg/l	525	0	0	0	0	0	ND	ND	ND	0 / 5
Cloroethane	µg/l	34	0	0	0	0	0	ND	ND	ND	0 / 5
Methylene Chloride	µg/l	1,600	0	0	0	0	0	ND	ND	ND	0 / 5
Trichlorofluoromethane	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
1,1-Dichloroethene	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
1,1-Dichloroethane	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
trans-1,2-Dichloroethene	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Chloroform	µg/l	470	0	0	0	0	0	ND	ND	ND	0 / 5
1,2-Dichloroethane	µg/l	99	0	0	0	0	0	ND	ND	ND	0 / 5
1,1,1-Trichloroethane	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Carbon Tetrachloride	µg/l	4.4	0	0	0	0	0	ND	ND	ND	0 / 5
Bromodichloromethane	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
1,2-Dichloropropane	µg/l	39	0	0	0	0	0	ND	ND	ND	0 / 5
trans-1,3-Dichloropropene	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Trichloroethene	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Dibromochloromethane	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
1,1,2-Trichloroethane	µg/l	42	0	0	0	0	0	ND	ND	ND	0 / 5
cis-1,3-Dichloropropene	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
2-Chloroethylvinyl ether	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Bromoform	µg/l	360	0	0	0	0	0	ND	ND	ND	0 / 5
1,1,2,2-Tetrachloroethane	µg/l	11	0	0	0	0	0	ND	ND	ND	0 / 5
Tetrachloroethene	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
1,3-Dichlorobenzene	µg/l	2,600	0	0	0	0	0	ND	ND	ND	0 / 5
1,2-Dichlorobenzene	µg/l	17,000	0	0	0	0	0	ND	ND	ND	0 / 5
Benzene	µg/l	71	0	0	0	0	0	ND	ND	ND	0 / 5
Chlorobenzene	µg/l	21,000	0	0	0	0	0	ND	ND	ND	0 / 5
1,4-Dichlorobenzene	µg/l	2,600	0	0	0	0	0	ND	ND	ND	0 / 5
Ethylbenzene	µg/l	29,000	0	0	0	0	0	ND	ND	ND	0 / 5
Toluene	µg/l	200,000	0	0	0	0	0	ND	ND	ND	0 / 5
Total Xylenes	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Metals [b]											
Dissolved Arsenic	µg/l	69	0	0	0	0	0	ND	ND	ND	0 / 5
Dissolved Cadmium	µg/l	42	0	0	0	0	0	ND	ND	ND	0 / 5
Dissolved Chromium [c]	µg/l	1100	0	0	0	0	0	ND	ND	ND	0 / 5

Table A-3.3

Summary of 1992
Playa Vista Water Quality Sampling
Wet Weather - Ballona Channel - Saltwater Portion
Chambers Group

Parameters	Units	CTR Acute SW Criteria	1993 Chambers Chambers Grp. BC Footbrdg 1A 12/5/92	1993 Chambers Chambers Grp. BC 2nd Culv. 2A 12/5/92	1993 Chambers Chambers Grp. BC Yellow Pipe 5A 12/5/92	1993 Chambers Chambers Grp. BC 1st Culv 6A 12/5/92	1993 Chambers Chambers Grp. In Wetlands 2B 12/5/92	Wet Weather Minimum	Wet Weather Maximum	Wet Weather Mean	Wet Weather Hits / Total
Dissolved Copper	µg/l	4.8	13 *	10 *	13 *	12 *	0	ND	13	9.8	4 / 5
Dissolved Iron	µg/l	—	880	580	760	790	190	190	880	640	5 / 5
Dissolved Lead	µg/l	210	0	0	0	0	0	ND	ND	ND	0 / 5
Dissolved Manganese	µg/l	—	130	130	120	130	20	20	130	106	5 / 5
Dissolved Mercury	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Dissolved Nickel	µg/l	74	0	0	0	0	0	ND	ND	ND	0 / 5
Dissolved Zinc	µg/l	90	100 *	100 *	100 *	100 *	40	40	100	88	5 / 5
Pesticides and PCBs [a]											
Aldrin [d]	µg/l	1.3	0	0	0	0	0	ND	ND	ND	0 / 5
alpha-BHC	µg/l	0.013	0	0	0	0	0	ND	ND	ND	0 / 5
beta-BHC	µg/l	0.046	0	0	0	0	0	ND	ND	ND	0 / 5
Lindane	µg/l	0.016	0	0	0	0	0	ND	ND	ND	0 / 5
Chlordane	µg/l	0.09	0	0	0	0	0	ND	ND	ND	0 / 5
Dieldrin	µg/l	0.71	0	0	0	0	0	ND	ND	ND	0 / 5
Endrin	µg/l	0.037	0	0	0	0	0	ND	ND	ND	0 / 5
Toxaphene	µg/l	0.21	0	0	0	0	0	ND	ND	ND	0 / 5
Heptachlor	µg/l	0.053	0	0	0	0	0	ND	ND	ND	0 / 5
Heptachlor Epoxide	µg/l	0.053	0	0	0	0	0	ND	ND	ND	0 / 5
O,P'-DDT	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
P,P'-DDT	µg/l	0.13	0	0	0	0	0	ND	ND	ND	0 / 5
O,P'-DDD	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
P,P'-DDD	µg/l	0.00084	0	0	0	0	0	ND	ND	ND	0 / 5
P,P'-DDE	µg/l	0.00059	0	0	0	0	0	ND	ND	ND	0 / 5
Total Pesticides	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
PCB-1016	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
PCB-1221	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
PCB-1232	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
PCB-1242	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
PCB-1248	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
PCB-1254	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
PCB-1260	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5
Total Chlorinated Hydrocarbons Detected	µg/l	—	0	0	0	0	0	ND	ND	ND	0 / 5

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
1993 Chambers - 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131. Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] CTR criteria are from human health organisms only criteria, except for PCBs, Aldrin, Chlordane, Toxaphene, Heptachlor, and P,P'-DDT.
[b] The Chambers 1993 Report does not indicate whether the metals values reported are dissolved or total. Here they are assumed to represent dissolved metals concentrations.
[c] Value for hexavalent chromium was used for chromium.
[d] CTR Criteria is from the acute saltwater criteria.
* Indicates exceeds any of the listed criteria or guidance values.

Table A-3.4

Summary of 1991-1992
Playa Vista Sediment Quality Sampling
Ballona Channel - Saltwater Portion
Chambers Group

Parameter	Units	NOAA SQuiRT Marine Sediment PELs[a] 1999	1993 Chambers Soule, et. al. 12 Ped Bridge Oct-91	1993 Chambers Chambers Grp. 1A Ped Bridge 1/17/92	1993 Chambers Chambers Grp. 2A Flap Gates 1/17/92	1993 Chambers Chambers Grp. 2B Flap Gates 1/17/92	1993 Chambers Chambers Grp. 2B Culver/Lincoln 10/24/92	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
General											
Volatile Solids	%	—	NA	4.26	3.90	9.09	11.2	3.9	11.2	7.11	4 / 4
TOC	mg/kg	—	NA	1.71	1.55	3.63	4.48	1.55	4.48	2.84	4 / 4
Immediate Oxygen Demand	mg/kg	—	NA	154	158	34	36.0	34	158	108	4 / 4
Chemical Oxygen Demand	mg/kg	—	NA	54800	56800	27800	55600	27,800	56,800	48,750	4 / 4
Oil and Grease	mg/kg	—	1900	2600	3330	27800	1100	1,100	27,800	7,346	5 / 5
Total Phosphorus	mg/kg	—	NA	1.50	5.1	1.85	6.68	1.5	6.68	3.79	4 / 4
Organic Nitrogen	mg/kg	—	NA	913	9190	1050	1500	913	9,190	3,163	4 / 4
Hydrogen Sulfide	mg/kg	—	NA	0.65	1.22	0.75	1.79	0.65	1.79	1.10	4 / 4
Tributyl Tin	mg/kg	—	0	0.30	0.12	0.61	0.63	ND	0.63	0.33	5 / 5
Total Alkalinity	mg/kg	—	NA	6920	10900	25100	21000	6,920	25,100	15,980	4 / 4
Chloride	mg/kg	—	NA	7180	9150	14500	12700	7,180	14,500	10,983	4 / 4
Calcium	mg/kg	—	NA	NA	NA	NA	9700	9,700	9,700	9,700	1 / 1
Magnesium	mg/kg	—	NA	4830	4670	14300	211	211	14,300	6,003	4 / 4
Potassium	mg/kg	—	NA	2610	2540.0	8460	5610	2,540	8,460	4,805	4 / 4
Sulfate	mg/kg	—	NA	1410	1020	2150	2100	1,020	2,150	1,670	4 / 4
VOCs											
Chloromethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Bromomethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Dichlorodifluoromethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Vinyl Chloride	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Cloroethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Methylene Chloride	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Trichlorofluoromenthane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,1-Dichloroethene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,1-Dichloroethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
trans-1,2-Dichloroethene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Chloroform	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,2-Dichloroethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,1,1-Trichloroethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Carbon Tetrachloride	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Bromodichloromethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,2-Dichloropropane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
trans-1,3-Dichloropropene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
[b] Trichloroethene	µg/kg	41	NA	0	0	0	0	ND	ND	ND	0 / 4
Dibromochloromethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,1,2-Trichloroethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
cis-1,3-Dichloropropene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
2-Chloroethylvinyl ether	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Bromoform	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,1,2,2-Tetrachloroethane	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
[b] Tetrachloroethene	µg/kg	57	NA	0	0	0	0	ND	ND	ND	0 / 4
Chlorobenzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,3-Dichlorobenzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,2-Dichlorobenzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,4-Dichlorobenzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Benzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Chlorobenzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,2-Dichlorobenzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,3-Dichlorobenzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
1,4-Dichlorobenzene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
[b] Ethylbenzene	µg/kg	4	NA	0	0	0	0	ND	ND	ND	0 / 4
Toluene	µg/kg	—	NA	21	27	983	0	ND	983	258	3 / 4
[b] Total Xylenes	µg/kg	4	NA	0	18 *	33 *	0	ND	33	12.75	2 / 4

Table A-3.4

Summary of 1991-1992
Playa Vista Sediment Quality Sampling
Ballona Channel - Saltwater Portion
Chambers Group

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1993 Chambers Soule, et. al. 12 Ped Bridge Oct-91	1993 Chambers Chambers Grp. 1A Ped Bridge 1/17/92	1993 Chambers Chambers Grp. 2A Flap Gates 1/17/92	1993 Chambers Chambers Grp. 2B Flap Gates 1/17/92	1993 Chambers Chambers Grp. 2B Culver/Lincoln 10/24/92	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
Metals [c]											
Arsenic	mg/kg	41.6	3.42	3.5	5.67	6.95	5.13	3.42	6.95	4.93	5 / 5
Cadmium	mg/kg	4.21	1.06	0.93	1.58	0.67	0.45	0.45	1.58	0.94	5 / 5
Chromium	mg/kg	160.4	20.5	24.7	22.3	45.2	34.7	20.5	45.2	29.5	5 / 5
Copper	mg/kg	108.2	25.9	36.5	36.2	42.3	31.8	25.9	42.3	34.3	5 / 5
Iron	mg/kg	—	NA	12700	11800	54400	35100	11,800	54,400	28,500	4 / 4
Lead	mg/kg	112.18	161 *	115 *	73.7	19.5	48.1	19.5	161	83	5 / 5
[a] Manganese	mg/kg	260	NA	106	112	433 *	211	106	433	216	4 / 4
Mercury	mg/kg	0.696	0	0.17	0.16	0.08	0.16	ND	0.17	0.11	4 / 5
Nickel	mg/kg	42.8	10.9	13.4	13.7	30.7	21.1	10.9	30.7	18.0	5 / 5
Zinc	mg/kg	271	139	165	202	125	114	114	202	149	5 / 5
Pesticides and PCBs											
[b] Aldrin	µg/kg	9.5	NA	0	0	0	0	ND	ND	ND	0 / 4
alpha-BHC	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
beta-BHC	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Lindane	µg/kg	0.99	NA	0	0	0	0	ND	ND	ND	0 / 4
Chlordane	µg/kg	4.79	124 *	210 *	170 *	0	6 *	ND	210	102	4 / 5
Dieldrin	µg/kg	4.3	NA	0	0	0	0	ND	ND	ND	0 / 4
Endrin	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
Toxaphene	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
[b] Heptachlor	µg/kg	0.3	NA	0	0	0	0	ND	ND	ND	0 / 4
Heptachlor Epoxide	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
O,P'-DDT	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
P,P'-DDT	µg/kg	4.77	8 *	130 *	160 *	0	9 *	ND	160	61	4 / 5
O,P'-DDD	µg/kg	—	NA	0	0	0	0	ND	ND	ND	0 / 4
P,P'-DDD	µg/kg	7.81	11 *	9 *	120 *	0	2	ND	120	28	4 / 5
P,P'-DDE	µg/kg	374.17	8	190	150	0	13	ND	190	72	4 / 5
Total Pesticides	µg/kg	—	NA	539	600	0	30	ND	600	292	3 / 4
PCB-1016	µg/kg	188.79	NA	0	0	0	0	ND	ND	ND	0 / 4
PCB-1221	µg/kg	188.79	NA	0	0	0	0	ND	ND	ND	0 / 4
PCB-1232	µg/kg	188.79	NA	0	0	0	0	ND	ND	ND	0 / 4
PCB-1242	µg/kg	188.79	NA	0	0	0	0	ND	ND	ND	0 / 4
PCB-1248	µg/kg	188.79	NA	0	0	0	0	ND	ND	ND	0 / 4
PCB-1254	µg/kg	188.79	NA	0	0	0	0	ND	ND	ND	0 / 4
PCB-1260	µg/kg	188.79	NA	0	0	0	0	ND	ND	ND	0 / 4
Total Chlorinated Hydrocarbons Detected	µg/kg	—	NA	539	600	0	30	ND	600	292	3 / 4

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
SD - Storm Drain
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1993 Chambers - 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed
[c] Note: The Chambers 1993 Report does not indicate whether the metals values reported are dissolved or total. Here they are assumed to represent total metals concentrations.
* Indicates exceeds guidance values

Table A-3.5

Summary of 1991-1992
Playa Vista Sediment Quality Sampling
Santa Monica Bay
Chambers Group

Parameter	Units	NOAA SQuIRT Marine Sediment PELs [a] 1999	1993 Chambers Chambers Grp. 0A Ocean 1/17/92	1993 Chambers Soule, et. al. 1 Breakwater Oct-91	Saltwater			
					Minimum	Maximum	Mean	Hits / Total
General								
Oil and Grease	mg/kg	—	598	1510	598	1,510	1,054	1 / 2
Tributyl Tin	mg/kg	—	0.03	0	ND	0.03	0.02	1 / 2
Volatile Solids	%	—	1.64	NA	1.64	1.64	1.64	1 / 1
TOC	mg/kg	—	0.66	NA	0.66	0.66	0.66	1 / 1
Immediate Oxygen Demand	mg/kg	—	0	NA	ND	ND	ND	0 / 1
Chemical Oxygen Demand	mg/kg	—	4100	NA	4,100	4,100	4,100	1 / 1
Total Phosphorus	mg/kg	—	2.10	NA	2.1	2.1	2.1	1 / 1
Organic Nitrogen	mg/kg	—	177	NA	177	177	177	1 / 1
Hydrogen Sulfide	mg/kg	—	0.79	NA	0.79	0.79	0.79	1 / 1
Total Alkalinity	mg/kg	—	3310	NA	3,310	3,310	3,310	1 / 1
Chloride	mg/kg	—	5350	NA	5,350	5,350	5,350	1 / 1
Magnesium	mg/kg	—	2120	NA	2,120	2,120	2,120	1 / 1
Potassium	mg/kg	—	959	NA	959	959	959	1 / 1
Sulfate	mg/kg	—	790	NA	790	790	790	1 / 1
VOCs								
Chloromethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Bromomethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Dichlorodifluoromethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Vinyl Chloride	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Cloroethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Methylene Chloride	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Trichlorofluoromenthane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,1-Dichloroethene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,1-Dichloroethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
trans-1,2-Dichloroethene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Chloroform	µg/kg	—	13	NA	13	13	13	1 / 1
1,2-Dichloroethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,1,1-Trichloroethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Carbon Tetrachloride	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Bromodichloromethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,2-Dichloropropane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
trans-1,3-Dichloropropene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
[b] Trichloroethene	µg/kg	41	0	NA	ND	ND	ND	0 / 1
Dibromochloromethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,1,2-Trichloroethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
cis-1,3-Dichloropropene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
2-Chloroethylvinyl ether	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Bromoform	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,1,2,2-Tetrachloroethane	µg/kg	—	0	NA	ND	ND	ND	0 / 1
[b] Tetrachloroethene	µg/kg	57	0	NA	ND	ND	ND	0 / 1
Benzene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Chlorobenzene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,2-Dichlorobenzene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,3-Dichlorobenzene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
1,4-Dichlorobenzene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
[b] Ethylbenzene	µg/kg	4	0	NA	ND	ND	ND	0 / 1
Toluene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
[b] Total Xylenes	µg/kg	4	0	NA	ND	ND	ND	0 / 1

Table A-3.5

Summary of 1991-1992
Playa Vista Sediment Quality Sampling
Santa Monica Bay
Chambers Group

Parameter	Units	NOAA SQuIRT Marine Sediment PELs[a] 1999	1993 Chambers Chambers Grp. 0A Ocean 1/17/92	1993 Chambers Soule, et. al. 1 Breakwater Oct-91	Saltwater			
					Minimum	Maximum	Mean	Hits / Total
Metals[c]								
Arsenic	mg/kg	41.6	1.52	2.22	1.52	2.22	1.87	1 / 2
Cadmium	mg/kg	4.21	0.14	0.5	0.14	0.5	0.32	1 / 2
Chromium	mg/kg	160.4	7.9	14.3	7.9	14.3	11.1	1 / 2
Copper	mg/kg	108.2	5.3	13.8	5.3	13.8	9.55	1 / 2
Iron	mg/kg	—	4980	0	ND	4,980	2,490	1 / 2
Lead	mg/kg	112.18	52.6	64	52.6	64	58.3	1 / 2
[b] Manganese	mg/kg	260	65.3	NA	65.3	65.3	65.3	1 / 1
Mercury	mg/kg	0.696	0.08	0	ND	0.08	0.04	1 / 2
Nickel	mg/kg	42.8	4.82	8.02	4.82	8.02	6.42	1 / 2
Zinc	mg/kg	271	31.2	55.8	31.2	55.8	43.5	1 / 2
Pesticides and PCBs								
[b] Aldrin	µg/kg	9.5	0	NA	ND	ND	ND	0 / 1
alpha-BHC	µg/kg	—	0	NA	ND	ND	ND	0 / 1
beta-BHC	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Lindane	µg/kg	0.99	0	NA	ND	ND	ND	0 / 1
Chlordane	µg/kg	4.79	0	46 *	ND	46	23	1 / 2
Dieldrin	µg/kg	4.3	0	NA	ND	ND	ND	0 / 1
Endrin	µg/kg	—	0	NA	ND	ND	ND	0 / 1
Toxaphene	µg/kg	—	0	NA	ND	ND	ND	0 / 1
[a] Heptachlor	µg/kg	0.3	0	NA	ND	ND	ND	0 / 1
Heptachlor Epoxide	µg/kg	—	0	NA	ND	ND	ND	0 / 1
O,P'-DDT	µg/kg	—	0	NA	ND	ND	ND	0 / 1
P,P'-DDT	µg/kg	4.77	0	0	ND	ND	ND	0 / 2
O,P'-DDD	µg/kg	—	0	NA	ND	ND	ND	0 / 1
P,P'-DDD	µg/kg	7.81	0	4	ND	4	2	1 / 2
P,P'-DDE	µg/kg	374.17	0	7	ND	7	3.5	1 / 2
Total Pesticides	µg/kg	—	0	NA	ND	ND	ND	0 / 1
PCB-1016	µg/kg	188.79	0	NA	ND	ND	ND	0 / 1
PCB-1221	µg/kg	188.79	0	NA	ND	ND	ND	0 / 1
PCB-1232	µg/kg	188.79	0	NA	ND	ND	ND	0 / 1
PCB-1242	µg/kg	188.79	0	NA	ND	ND	ND	0 / 1
PCB-1248	µg/kg	188.79	0	NA	ND	ND	ND	0 / 1
PCB-1254	µg/kg	188.79	0	NA	ND	ND	ND	0 / 1
PCB-1260	µg/kg	188.79	0	NA	ND	ND	ND	0 / 1
Total Chlorinated Hydrocarbons Detected	µg/kg	—	0	NA	ND	ND	ND	0 / 1

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
SD - Storm Drain
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1993 Chambers - 1993, March. Chambers Group, Inc. Comparison of the Re-establishment of Tidal Flow in the Ballona Wetlands Through the Ballona Channel or Through the Marina Del Rey Entrance Channel.
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration. 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed
[c] Note: The Chambers 1993 Report does not indicate whether the metals values reported are dissolved or total. Here they are assumed to represent total metals concentrations.
* Indicates exceeds guidance values

Appendix A-4

Woodward-Clyde Consultants Existing Data

Table A-4.1

Summary of 1990
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
WCC

Parameters	Units	CTR Chronic SW Criteria	1990 WCC WCC Sta. 5 SW Marsh 5/16-17/90	1990 WCC WCC Sta. 6 Ped. Bridge 5/16-17/90	Dry Weather			
					Minimum	Maximum	Mean	Hits / Total
General								
Total Hardness	mg/L	—	6100	6300	6,100	6,300	6,200	2 / 2
Total Suspended Solids[a]	mg/L	—	100	110	100	110	105	2 / 2
Nitrate	mg/L	—	0.07	0	ND	0.07	0.04	1 / 2
Ammonia	mg/L	—	0	0	ND	ND	ND	0 / 2
TKN[a]	mg/L	—	0.8	0	ND	0.8	0.4	1 / 2
Orthophosphorus[a]	mg/L	—	0.13	0.02	0.02	0.13	0.08	2 / 2
Total Phosphorus	mg/L	—	0.16	0.03	0.03	0.16	0.10	2 / 2
PAHs	ug/L	—	0	0	ND	ND	ND	0 / 2
Oil & Grease	ug/L	—	0	0	ND	ND	ND	0 / 2
Pesticides and PCBs	ug/L	—	0	0	ND	ND	ND	0 / 2
VOCs								
Acetone[b]	µg/L	—	11	0	ND	11	5.5	1 / 2
Methylene Chloride[c]	µg/L	1,600	0	0	ND	ND	ND	0 / 2
Other VOCs	µg/L	—	0	0	ND	ND	ND	0 / 2
Metals								
Dissolved Arsenic	µg/L	36	2	0	ND	2	1	1 / 2
Dissolved Cadmium	µg/L	9.3	0	0	ND	ND	ND	0 / 2
Dissolved Chromium[d]	µg/L	50	10	8	8	10	9	2 / 2
Dissolved Copper	µg/L	3.1	4 *	4 *	4	4	4	2 / 2
Dissolved Lead	µg/L	8.1	0	0	ND	ND	ND	0 / 2
Dissolved Mercury	µg/L	—	0	0	ND	ND	ND	0 / 2
Dissolved Nickel	µg/L	8.2	0	0	ND	ND	ND	0 / 2
Dissolved Selenium	µg/L	71	0	0	ND	ND	ND	0 / 2
Dissolved Silver	µg/L	—	1.7	0	ND	1.7	0.85	1 / 2
Dissolved Zinc	µg/L	81	7	0	ND	7	3.5	1 / 2

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
1990 WCC = 1990, November 14. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131. Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] Results for Orthophosphate, Total Suspended Solids, and Total Kjeldahl Nitrogen from: 1990, July. Woodward-Clyde Consultants. Dry Weather Sampling Results Report. Table 4.
[b] Acetone was also detected in the trip blank for the samples with hits, so the results should be reviewed with caution
[c] CTR criteria are from human health organisms only criteria.
[d] Values for hexavalent chromium was used for chromium
* Indicates exceeds any of the listed criteria or guidance values.

Table A-4.2

Summary of 1990
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands - Saltwater
WCC

Parameters	Units	CTR Chronic SW Criteria	1990 WCC WCC Sta. 4 Gas Co. Rd. 5/16-17/90	Dry Weather			
				Minimum	Maximum	Mean	Hits / Total
General							
Total Hardness	mg/L	—	140	140	140	140	1 / 1
Total Suspended Solids [a]	mg/L	—	16	16	16	16	1 / 1
Nitrate	mg/L	—	0.24	0.24	0.24	0.24	1 / 1
Ammonia	mg/L	—	2.2	2.2	2.2	2.20	1 / 1
TKN[a]	mg/L	—	3.4	3.4	3.4	3.40	1 / 1
Orthophosphorus[a]	mg/L	—	1.4	1.4	1.4	1.4	1 / 1
Total Phosphorus	mg/L	—	1.6	1.6	1.6	1.60	1 / 1
PAHs	µg/L	—	0	ND	ND	ND	0 / 1
Oil & Grease	µg/L	—	0	ND	ND	ND	0 / 1
Pesticides and PCBs	µg/L	—	0	ND	ND	ND	0 / 1
VOCs							
Acetone [b]	µg/L	—	14	14	14	14	1 / 1
Methylene Chloride [c]	µg/L	1,600	0	ND	ND	ND	0 / 1
Other VOCs	µg/L	—	0	ND	ND	ND	0 / 1
Metals (Dissolved)							
Dissolved Arsenic	µg/L	36	0	ND	ND	ND	0 / 1
Dissolved Cadmium	µg/L	9.3	0.1	0.1	0.1	0.10	1 / 1
Dissolved Chromium [d]	µg/L	50	1	1	1	1	1 / 1
Dissolved Copper	µg/L	3.1	5 *	5	5	5	1 / 1
Dissolved Lead	µg/L	8.1	0	ND	ND	ND	0 / 1
Dissolved Mercury	µg/L	—	0	ND	ND	ND	0 / 1
Dissolved Nickel	µg/L	8.2	9 *	9	9	9	1 / 1
Dissolved Selenium	µg/L	71	0	ND	ND	ND	0 / 1
Dissolved Silver	µg/L	—	0	ND	ND	ND	0 / 1
Dissolved Zinc	µg/L	81	54	54	54	54	1 / 1

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

1990 WCC = 1990, November 14. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a] Results for Orthophosphate, Total Suspended Solids, and Total Kjeldahl Nitrogen from: 1990, July. Woodward-Clyde Consultants, Dry Weather Sampling Results Report. Table 4.

[b] Acetone was also detected in the trip blank for the samples with hits, so the results should be reviewed with caution

[c] CTR criteria are from human health organisms only criteria.

[d] The value for Hexavalent Chromium was used for chromium

* Indicates exceeds any of the listed criteria or guidance values.

Table A-4.3

Summary of 1990
Playa Vista Water Quality Sampling
Dry Weather - Centinela Ditch - Saltwater
WCC

Parameters	Units	CTR Chronic SW Criteria	1990 WCC WCC Sta. 3 Cent. Ditch 5/16-17/90	Dry Weather			
				Minimum	Maximum	Mean	Hits / Total
General							
Total Hardness	mg/L	—	720	720	720	720	1 / 1
Total Suspended Solids [a]	mg/L	—	140	140	140	140	1 / 1
Nitrate	mg/L	—	0.23	0.23	0.23	0.23	1 / 1
Ammonia	mg/L	—	0	ND	ND	ND	0 / 1
TKN[a]	mg/L	—	1.5	1.5	1.5	1.50	1 / 1
Orthophosphorus[a]	mg/L	—	0.4	0.4	0.4	0.4	1 / 1
Total Phosphorus	mg/L	—	0.76	0.76	0.76	0.76	1 / 1
PAHs	µg/L	—	0	ND	ND	ND	0 / 1
Oil & Grease	mg/L	—	0	ND	ND	ND	0 / 1
Pesticides and PCBs	µg/L	—	0	ND	ND	ND	0 / 1
VOCs							
Acetone [b]	µg/L	—	0	ND	ND	ND	0 / 1
Methylene Chloride [c]	µg/L	1,600	0	ND	ND	ND	0 / 1
Other VOCs	µg/L	—	0	ND	ND	ND	0 / 1
Metals (Dissolved)							
Dissolved Arsenic	µg/L	36	7	7	7	7.0	1 / 1
Dissolved Cadmium	µg/L	9.3	2	2	2	2.00	1 / 1
Dissolved Chromium [d]	µg/L	50	9	9	9	9	1 / 1
Dissolved Copper	µg/L	3.1	5 *	5	5	5	1 / 1
Dissolved Lead	µg/L	8.1	19 *	19	19	19.0	1 / 1
Dissolved Mercury	µg/L	—	0	ND	ND	ND	0 / 1
Dissolved Nickel	µg/L	8.2	7	7	7	7	1 / 1
Dissolved Selenium	µg/L	71	0	ND	ND	ND	0 / 1
Dissolved Silver	µg/L	—	0	ND	ND	ND	0 / 1
Dissolved Zinc	µg/L	81	54	54	54	54	1 / 1

Notes:

0 - Not Detected
NA - Not Analyzed
ND - Not Detected
1990 WCC = 1990, November 14. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a] Results for Orthophosphate, Total Suspended Solids, and Total Kjeldahl Nitrogen from: 1990, July. Woodward-Clyde Consultants, Dry Weather Sampling Results Report. Table 4.
[b] Acetone was also detected in the trip blank for the samples with hits, so the results should be reviewed with caution
[c] CTR criteria are from human health organisms only criteria.
[d] The value for Hexavalent Chromium was used for chromium
* Indicates exceeds any of the listed criteria or guidance values.

Table A-4.4

Summary of 1990
Playa Vista Sediment Quality Sampling
Ballona Channel - Saltwater Portion
WCC

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1990 WCC WCC Sta. 5 Ballona May-90	1990 WCC WCC Sta. 6 Ballona May-90	Saltwater			
					Minimum	Maximum	Mean	Hits / Total
General								
Oil & Grease	mg/kg	—	57	46	46	57	51.5	2 / 2
bis(2-Ethylhexyl)phthalate	µg/kg	—	0	0.9	ND	0.9	0.45	1 / 2
Metals								
Arsenic	mg/kg	41.6	5	4.3	4.3	5	4.65	2 / 2
Cadmium	mg/kg	4.21	2.2	1.7	1.7	2.2	1.95	2 / 2
Chromium	mg/kg	160.4	19	18	18	19	18.5	2 / 2
Copper	mg/kg	108.2	18	30	18	30	24	2 / 2
Lead	mg/kg	112.18	23	110	23	110	66.5	2 / 2
Mercury	mg/kg	0.696	0	0	ND	ND	ND	0 / 2
Nickel	mg/kg	42.8	14	9	9	14	11.5	2 / 2
[b] Selenium	mg/kg	1	0	0	ND	ND	ND	0 / 2
Silver	mg/kg	1.77	0.5	0.5	0.5	0.5	0.5	2 / 2
Zinc	mg/kg	271	73	170	73	170	122	2 / 2

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

PEL - Probable Effects Level, level above which adverse effects are frequently expected

1990 WCC = 1990, November 14. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

* Indicates exceeds guidance values

Table A-4.5

Summary of 1990
Playa Vista Sediment Quality Sampling
Ballona Wetlands - Saltwater
WCC

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1990 WCC WCC Sta. 4 Jefferson SD May-90	Storm Drains			
				Minimum	Maximum	Mean	Hits / Total
General							
Oil & Grease	mg/kg	—	2100	2100	2,100	2,100	1 / 1
VOCs							
1,1,1-Trichloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,1,2,2-Tetrachloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,1,2-Trichloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,1-Dichloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,1-Dichloroethene	µg/kg	—	0	ND	ND	ND	0 / 1
1,2-Dichloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,2-Dichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
1,2-Dichloropropane	µg/kg	—	0	ND	ND	ND	0 / 1
1,3-Dichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
1,4-Dichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
2-Chloroethylvinylether	µg/kg	—	0	ND	ND	ND	0 / 1
2-Hexanone	µg/kg	—	0	ND	ND	ND	0 / 1
Acetone	µg/kg	—	0	ND	ND	ND	0 / 1
Acrolein	µg/kg	—	0	ND	ND	ND	0 / 1
Acrylonitrile	µg/kg	—	0	ND	ND	ND	0 / 1
Bromodichloromethane	µg/kg	—	0	ND	ND	ND	0 / 1
Bromomethane	µg/kg	—	0	ND	ND	ND	0 / 1
Benzene	µg/kg	—	0	ND	ND	ND	0 / 1
Bromoform	µg/kg	—	0	ND	ND	ND	0 / 1
Chlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
Carbon Tetrachloride	µg/kg	—	0	ND	ND	ND	0 / 1
Chloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
Chloroform	µg/kg	—	0	ND	ND	ND	0 / 1
Chloromethane	µg/kg	—	0	ND	ND	ND	0 / 1
Carbon Disulfide	µg/kg	—	0	ND	ND	ND	0 / 1
Dibromochloromethane	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Ethylbenzene	µg/kg	4	0	ND	ND	ND	0 / 1
Freon-113	µg/kg	—	0	ND	ND	ND	0 / 1
Methyl Ethyl Ketone	µg/kg	—	0	ND	ND	ND	0 / 1
Methyl Isobutyl ketone	µg/kg	—	0	ND	ND	ND	0 / 1
Methylene Chloride	µg/kg	—	0	ND	ND	ND	0 / 1

Table A-4.5

Summary of 1990
Playa Vista Sediment Quality Sampling
Ballona Wetlands - Saltwater
WCC

Parameter	Units	NOAA SQuiRT Marine Sediment PELs * 1999	1990 WCC WCC Sta. 4 Jefferson SD May-90	Storm Drains Minimum	Maximum	Mean	Hits / Total
Styrene	µg/kg	—	0	ND	ND	ND	0 / 1
b Trichloroethene	µg/kg	41	0	ND	ND	ND	0 / 1
Trichlorofluoromethane	µg/kg	—	0	ND	ND	ND	0 / 1
Toluene	µg/kg	—	0	ND	ND	ND	0 / 1
b Tetrachloroethene	µg/kg	57	0	ND	ND	ND	0 / 1
Vinyl Acetate	µg/kg	—	0	ND	ND	ND	0 / 1
Vinyl Chloride	µg/kg	—	0	ND	ND	ND	0 / 1
b Total Xylenes	µg/kg	4	0	ND	ND	ND	0 / 1
cis-1,2-Dichloroethene	µg/kg	—	0	ND	ND	ND	0 / 1
cis-1,3-Dichloropropene	µg/kg	—	0	ND	ND	ND	0 / 1
trans-1,2-Dichloroethene	µg/kg	—	0	ND	ND	ND	0 / 1
trans-1,3-Dichloropropene	µg/kg	—	0	ND	ND	ND	0 / 1
SVOCs							
1,2,4-Trichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
b 1,2-Dichlorobenzene	µg/kg	13	0	ND	ND	ND	0 / 1
1,2-Diphenylhydrazine	µg/kg	—	0	ND	ND	ND	0 / 1
1,3-Dichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
b 1,4-Dichlorobenzene	µg/kg	110	0	ND	ND	ND	0 / 1
2,4-Dinitrotoluene	µg/kg	—	0	ND	ND	ND	0 / 1
2,6-Dinitrotoluene	µg/kg	—	0	ND	ND	ND	0 / 1
2-Methylnaphthalene	µg/kg		0	ND	ND	ND	0 / 1
2-Nitroaniline	µg/kg	—	0	ND	ND	ND	0 / 1
3,3'-Dichlorobenzidine	µg/kg	—	0	ND	ND	ND	0 / 1
3-Nitroaniline	µg/kg	—	0	ND	ND	ND	0 / 1
4-Bromophenylphenyl ether	µg/kg	—	0	ND	ND	ND	0 / 1
4-Chloroaniline	µg/kg	—	0	ND	ND	ND	0 / 1
4-Nitroaniline	µg/kg	—	0	ND	ND	ND	0 / 1
Acenaphthene	µg/kg	88.9	0	ND	ND	ND	0 / 1
Acenaphthylene	µg/kg	127.87	0	ND	ND	ND	0 / 1
Aniline	µg/kg	—	0	ND	ND	ND	0 / 1
Anthracene	µg/kg	245	0	ND	ND	ND	0 / 1
Benzidine	µg/kg	—	0	ND	ND	ND	0 / 1
Benz(a)anthracene	µg/kg	692.53	0	ND	ND	ND	0 / 1
Benzo(a)pyrene	µg/kg	763.22	0	ND	ND	ND	0 / 1
b Benzo(b)fluoranthene	µg/kg	1800	0	ND	ND	ND	0 / 1
Benzo(g,h,i)perylene	µg/kg	670	0	ND	ND	ND	0 / 1
b Benzo(k)fluoranthene	µg/kg	1800	0	ND	ND	ND	0 / 1
b Butylbenzylphthalate	µg/kg	63	0	ND	ND	ND	0 / 1
Chrysene	µg/kg	845.98	0	ND	ND	ND	0 / 1
b Di-n-octylphthalate	µg/kg	61	0	ND	ND	ND	0 / 1

Table A-4.5

Summary of 1990
Playa Vista Sediment Quality Sampling
Ballona Wetlands - Saltwater
WCC

Parameter	Units	NOAA SQuiRT Marine Sediment PELs * 1999	1990 WCC WCC Sta. 4 Jefferson SD May-90	Storm Drains			
				Minimum	Maximum	Mean	Hits / Total
Dibenz(a,h)anthracene	µg/kg	134.61	0	ND	ND	ND	0 / 1
Dibenzofuran	µg/kg	—	0	ND	ND	ND	0 / 1
Dibutylphthalate	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Diethylphthalate	µg/kg	6	0	ND	ND	ND	0 / 1
[b] Dimethylphthalate	µg/kg	6	0	ND	ND	ND	0 / 1
Fluoranthene	µg/kg	1493.54	0	ND	ND	ND	0 / 1
Fluorene	µg/kg	144.35	0	ND	ND	ND	0 / 1
[b] Hexachlorobenzene	µg/kg	6	0	ND	ND	ND	0 / 1
[b] Hexachlorobutadiene	µg/kg	1.3	0	ND	ND	ND	0 / 1
Hexachlorocyclopentadience	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Hexachloroethane	µg/kg	73	0	ND	ND	ND	0 / 1
[b] Indeno(1,2,3-c,d)pyrene	µg/kg	600	0	ND	ND	ND	0 / 1
Isophorone	µg/kg	—	0	ND	ND	ND	0 / 1
N-Nitrosodimethylamine	µg/kg	—	0	ND	ND	ND	0 / 1
[b] N-Nitrosodiphenylamine	µg/kg	28	0	ND	ND	ND	0 / 1
N-Nitrosodi-n-propylamine	µg/kg	—	0	ND	ND	ND	0 / 1
Nitrobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
Naphthalene	µg/kg	390.64	0	ND	ND	ND	0 / 1
Phenanthrene	µg/kg	543.53	0	ND	ND	ND	0 / 1
Pyrene	µg/kg	1397.6	0	ND	ND	ND	0 / 1
bis(2-Chloroethoxy)methane	µg/kg	—	0	ND	ND	ND	0 / 1
bis(2-Chloroethyl)ether	µg/kg	—	0	ND	ND	ND	0 / 1
bis(2-Chloroisopropyl)ether	µg/kg	—	0	ND	ND	ND	0 / 1
bis(2-Ethylhexyl)phthalate	µg/kg	—	0	ND	ND	ND	0 / 1
Metals							
Arsenic	mg/kg	41.6	2.5	2.5	2.5	2.5	1 / 1
Cadmium	mg/kg	4.21	1.8	1.8	1.8	1.8	1 / 1
Chromium	mg/kg	160.4	10	10	10	10	1 / 1
Copper	mg/kg	108.2	39	39	39	39	1 / 1
Lead	mg/kg	112.18	79	79	79	79	1 / 1
Mercury	mg/kg	0.696	0	ND	ND	ND	0 / 1
Nickel	mg/kg	42.8	7	7	7	7	1 / 1
[b] Selenium	mg/kg	1	0	ND	ND	ND	0 / 1
Silver	mg/kg	1.77	0.4	0.4	0.4	0.4	1 / 1
Zinc	mg/kg	271	280 *	280	280	280	1 / 1
Pesticides and PCBs							
[b] Aldrin	µg/kg	9.5	0	ND	ND	ND	0 / 1
Chlordane	µg/kg	4.79	0	ND	ND	ND	0 / 1
p,p'-DDD	µg/kg	7.81	0	ND	ND	ND	0 / 1
p,p'-DDE	µg/kg	374.17	0	ND	ND	ND	0 / 1

Table A-4.5

Summary of 1990
Playa Vista Sediment Quality Sampling
Ballona Wetlands - Saltwater
WCC

Parameter	Units	NOAA SQuiRT Marine Sediment PELs[a] 1999	1990 WCC WCC Sta. 4 Jefferson SD May-90	Storm Drains			
				Minimum	Maximum	Mean	Hits / Total
p,p'-DDT	µg/kg	4.77	0	ND	ND	ND	0 / 1
Dieldrin	µg/kg	4.3	0	ND	ND	ND	0 / 1
Endosulfan I	µg/kg	—	0	ND	ND	ND	0 / 1
Endosulfan II	µg/kg	—	0	ND	ND	ND	0 / 1
Endosulfan Sulfate	µg/kg	—	0	ND	ND	ND	0 / 1
Endrin	µg/kg	—	0	ND	ND	ND	0 / 1
Endrin aldehyde	µg/kg	—	0	ND	ND	ND	0 / 1
Heptachlor Epoxide	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Heptachlor	µg/kg	0.3	0	ND	ND	ND	0 / 1
Methoxychlor	µg/kg	—	0	ND	ND	ND	0 / 1
Aroclor-1016	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1221	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1232	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1242	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1248	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1254	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1260	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1262	µg/kg	188.79	0	ND	ND	ND	0 / 1
Toxaphene	µg/kg	—	0	ND	ND	ND	0 / 1
alpha-BHC	µg/kg	—	0	ND	ND	ND	0 / 1
beta-BHC	µg/kg	—	0	ND	ND	ND	0 / 1
delta-BHC	µg/kg	—	0	ND	ND	ND	0 / 1
gamma-BHC (lindane)	µg/kg	0.99	0	ND	ND	ND	0 / 1

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

SD - Storm Drain

PEL - Probable Effects Level, level above which adverse effects are frequently expected

1990 WCC = 1990, November 14. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

* Indicates exceeds guidance values

Table A-4.6

Summary of 1990
Playa Vista Sediment Quality Sampling
Centinela Ditch - Saltwater
WCC

Parameter	Units	NOAA SQuIRT Marine Sediment PELs[a] 1999	1990 WCC WCC Sta. 3-Avg. Cent. Ditch May-90	Storm Drains Minimum	Maximum	Mean	Hits / Total
General							
Oil & Grease	mg/kg	—	89	89	89	89	1 / 1
VOCs							
1,1,1-Trichloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,1,2,2-Tetrachloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,1,2-Trichloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,1-Dichloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,1-Dichloroethene	µg/kg	—	0	ND	ND	ND	0 / 1
1,2-Dichloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
1,2-Dichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
1,2-Dichloropropane	µg/kg	—	0	ND	ND	ND	0 / 1
1,3-Dichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
1,4-Dichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
2-Chloroethylvinylether	µg/kg	—	0	ND	ND	ND	0 / 1
2-Hexanone	µg/kg	—	0	ND	ND	ND	0 / 1
Acetone	µg/kg	—	0	ND	ND	ND	0 / 1
Acrolein	µg/kg	—	0	ND	ND	ND	0 / 1
Acrylonitrile	µg/kg	—	0	ND	ND	ND	0 / 1
Bromodichloromethane	µg/kg	—	0	ND	ND	ND	0 / 1
Bromomethane	µg/kg	—	0	ND	ND	ND	0 / 1
Benzene	µg/kg	—	0	ND	ND	ND	0 / 1
Bromoform	µg/kg	—	0	ND	ND	ND	0 / 1
Chlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
Carbon Tetrachloride	µg/kg	—	0	ND	ND	ND	0 / 1
Chloroethane	µg/kg	—	0	ND	ND	ND	0 / 1
Chloroform	µg/kg	—	0	ND	ND	ND	0 / 1
Chloromethane	µg/kg	—	0	ND	ND	ND	0 / 1
Carbon Disulfide	µg/kg	—	0	ND	ND	ND	0 / 1
Dibromochloromethane	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Ethylbenzene	µg/kg	4	0	ND	ND	ND	0 / 1
Freon-113	µg/kg	—	0	ND	ND	ND	0 / 1
Methyl Ethyl Ketone	µg/kg	—	0	ND	ND	ND	0 / 1
Methyl Isobutyl ketone	µg/kg	—	0	ND	ND	ND	0 / 1
Methylene Chloride	µg/kg	—	0	ND	ND	ND	0 / 1

Table A-4.5

Summary of 1990
Playa Vista Sediment Quality Sampling
Centinela Ditch - Saltwater
WCC

Parameter	Units	NOAA SQuIRT Marine Sediment PELs [a] 1999	1990 WCC WCC Sta. 3-Avg. Cent. Ditch May-90	Storm Drains			
				Minimum	Maximum	Mean	Hits / Total
Styrene	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Trichloroethene	µg/kg	41	0	ND	ND	ND	0 / 1
Trichlorofluoromethane	µg/kg	—	0	ND	ND	ND	0 / 1
Toluene	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Tetrachloroethene	µg/kg	57	0	ND	ND	ND	0 / 1
Vinyl Acetate	µg/kg	—	0	ND	ND	ND	0 / 1
Vinyl Chloride	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Total Xylenes	µg/kg	4	0	ND	ND	ND	0 / 1
cis-1,2-Dichloroethene	µg/kg	—	0	ND	ND	ND	0 / 1
cis-1,3-Dichloropropene	µg/kg	—	0	ND	ND	ND	0 / 1
trans-1,2-Dichloroethene	µg/kg	—	0	ND	ND	ND	0 / 1
trans-1,3-Dichloropropene	µg/kg	—	0	ND	ND	ND	0 / 1
SVOCs							
1,2,4-Trichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
[b] 1,2-Dichlorobenzene	µg/kg	13	0	ND	ND	ND	0 / 1
1,2-Diphenylhydrazine	µg/kg	—	0	ND	ND	ND	0 / 1
1,3-Dichlorobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
[b] 1,4-Dichlorobenzene	µg/kg	110	0	ND	ND	ND	0 / 1
2,4-Dinitrotoluene	µg/kg	—	0	ND	ND	ND	0 / 1
2,6-Dinitrotoluene	µg/kg	—	0	ND	ND	ND	0 / 1
2-Methylnaphthalene	µg/kg		0	ND	ND	ND	0 / 1
2-Nitroaniline	µg/kg	—	0	ND	ND	ND	0 / 1
3,3'-Dichlorobenzidine	µg/kg	—	0	ND	ND	ND	0 / 1
3-Nitroaniline	µg/kg	—	0	ND	ND	ND	0 / 1
4-Bromophenylphenylether	µg/kg	—	0	ND	ND	ND	0 / 1
4-Chloroaniline	µg/kg	—	0	ND	ND	ND	0 / 1
4-Nitroaniline	µg/kg	—	0	ND	ND	ND	0 / 1
Acenaphthene	µg/kg	88.9	0	ND	ND	ND	0 / 1
Acenaphthylene	µg/kg	127.87	0	ND	ND	ND	0 / 1
Aniline	µg/kg	—	0	ND	ND	ND	0 / 1
Anthracene	µg/kg	245	0	ND	ND	ND	0 / 1
Benzidine	µg/kg	—	0	ND	ND	ND	0 / 1
Benz(a)anthracene	µg/kg	692.53	0	ND	ND	ND	0 / 1
Benzo(a)pyrene	µg/kg	763.22	0	ND	ND	ND	0 / 1
[a] Benzo(b)fluoranthene	µg/kg	1800	0	ND	ND	ND	0 / 1
Benzo(g,h,i)perylene	µg/kg	670	0	ND	ND	ND	0 / 1
[b] Benzo(k)fluoranthene	µg/kg	1800	0	ND	ND	ND	0 / 1
[b] Butylbenzylphthalate	µg/kg	63	0	ND	ND	ND	0 / 1
Chrysene	µg/kg	845.98	0	ND	ND	ND	0 / 1
[b] Di-n-octylphthalate	µg/kg	61	0	ND	ND	ND	0 / 1

Table A-4.6

Summary of 1990
Playa Vista Sediment Quality Sampling
Centinela Ditch - Saltwater
WCC

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1990 WCC WCC Sta. 3-Avg. Cent. Ditch May-90	Storm Drains Minimum	Maximum	Mean	Hits / Total
Dibenz(a,h)anthracene	µg/kg	134.61	0	ND	ND	ND	0 / 1
Dibenzofuran	µg/kg	—	0	ND	ND	ND	0 / 1
Dibutylphthalate	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Diethylphthalate	µg/kg	6	0	ND	ND	ND	0 / 1
[b] Dimethylphthalate	µg/kg	6	0	ND	ND	ND	0 / 1
Fluoranthene	µg/kg	1493.54	0	ND	ND	ND	0 / 1
Fluorene	µg/kg	144.35	0	ND	ND	ND	0 / 1
[b] Hexachlorobenzene	µg/kg	6	0	ND	ND	ND	0 / 1
[b] Hexachlorobutadiene	µg/kg	1.3	0	ND	ND	ND	0 / 1
Hexachlorocyclopentadiene	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Hexachloroethane	µg/kg	73	0	ND	ND	ND	0 / 1
[b] Indeno(1,2,3-c,d)pyrene	µg/kg	600	0	ND	ND	ND	0 / 1
Isophorone	µg/kg	—	0	ND	ND	ND	0 / 1
N-Nitrosodimethylamine	µg/kg	—	0	ND	ND	ND	0 / 1
[b] N-Nitrosodiphenylamine	µg/kg	28	0	ND	ND	ND	0 / 1
N-Nitrosodi-n-propylamine	µg/kg	—	0	ND	ND	ND	0 / 1
Nitrobenzene	µg/kg	—	0	ND	ND	ND	0 / 1
Naphthalene	µg/kg	390.64	0	ND	ND	ND	0 / 1
Phenanthrene	µg/kg	543.53	0	ND	ND	ND	0 / 1
Pyrene	µg/kg	1397.6	0	ND	ND	ND	0 / 1
bis(2-Chloroethoxy)methane	µg/kg	—	0	ND	ND	ND	0 / 1
bis(2-Chloroethyl)ether	µg/kg	—	0	ND	ND	ND	0 / 1
bis(2-Chloroisopropyl)ether	µg/kg	—	0	ND	ND	ND	0 / 1
bis(2-Ethylhexyl)phthalate	µg/kg	—	0	ND	ND	ND	0 / 1
Metals							
Arsenic	mg/kg	41.6	2.85	2.85	2.85	2.85	1 / 1
Cadmium	mg/kg	4.21	2	2	2	2	1 / 1
Chromium	mg/kg	160.4	27.5	27.5	27.5	27.5	1 / 1
Copper	mg/kg	108.2	29.5	29.5	29.5	29.5	1 / 1
Lead	mg/kg	112.18	58	58	58	58	1 / 1
Mercury	mg/kg	0.696	0	ND	ND	ND	0 / 1
Nickel	mg/kg	42.8	9.5	9.5	9.5	9.5	1 / 1
[b] Selenium	mg/kg	1	0	ND	ND	ND	0 / 1
Silver	mg/kg	1.77	0.7	0.7	0.7	0.7	1 / 1
Zinc	mg/kg	271	160	160	160	160	1 / 1
Pesticides and PCBs							
[b] Aldrin	µg/kg	9.5	0	ND	ND	ND	0 / 1
Chlordane	µg/kg	4.79	0	ND	ND	ND	0 / 1
p,p'-DDD	µg/kg	7.81	0	ND	ND	ND	0 / 1
p,p'-DDE	µg/kg	374.17	0	ND	ND	ND	0 / 1

Table A-4.6

Summary of 1990
Playa Vista Sediment Quality Sampling
Centinela Ditch - Saltwater
WCC

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1990 WCC WCC Sta. 3-Avg. Cent. Ditch May-90	Storm Drains Minimum	Maximum	Mean	Hits / Total
p,p'-DDT	µg/kg	4.77	0	ND	ND	ND	0 / 1
Dieldrin	µg/kg	4.3	0	ND	ND	ND	0 / 1
Endosulfan I	µg/kg	—	0	ND	ND	ND	0 / 1
Endosulfan II	µg/kg	—	0	ND	ND	ND	0 / 1
Endosulfan Sulfate	µg/kg	—	0	ND	ND	ND	0 / 1
Endrin	µg/kg	—	0	ND	ND	ND	0 / 1
Endrin aldehyde	µg/kg	—	0	ND	ND	ND	0 / 1
Heptachlor Epoxide	µg/kg	—	0	ND	ND	ND	0 / 1
[b] Heptachlor	µg/kg	0.3	0	ND	ND	ND	0 / 1
Methoxychlor	µg/kg	—	0	ND	ND	ND	0 / 1
Aroclor-1016	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1221	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1232	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1242	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1248	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1254	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1260	µg/kg	188.79	0	ND	ND	ND	0 / 1
Aroclor-1262	µg/kg	188.79	0	ND	ND	ND	0 / 1
Toxaphene	µg/kg	—	0	ND	ND	ND	0 / 1
alpha-BHC	µg/kg	—	0	ND	ND	ND	0 / 1
beta-BHC	µg/kg	—	0	ND	ND	ND	0 / 1
delta-BHC	µg/kg	—	0	ND	ND	ND	0 / 1
gamma-BHC (lindane)	µg/kg	0.99	0	ND	ND	ND	0 / 1

Notes:

0 - Not Detected
NA - Not Analyzed
ND - Not Detected
SD - Storm Drain
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1990 WCC = 1990, November 14. Woodward-Clyde Consultants, Final Technical Appendix to the Master EIR. Table 5-2.
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed
* Indicates exceeds guidance values

Appendix A-5

Aquatic Bioassay Consulting Laboratory Existing Data

Table A-5.1

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
ABCL

Parameter	Units	CTR Chronic SW Criteria	1997 ABCL ABCL 12-0m Ballona Channel 7/29/96	1997 ABCL ABCL 12-2m Ballona Channel 7/29/96	1997 ABCL ABCL 12-0m Ballona Channel 8/9/96	1997 ABCL ABCL 12-2m Ballona Channel 8/9/96	1997 ABCL ABCL 12-0m Ballona Channel 9/8/96	1997 ABCL ABCL 12-2m Ballona Channel 9/8/96
General								
Total Coliform	MPN/100ml	—	0	NA	270	NA	80	NA
Fecal Coliform	MPN/100ml	—	0	NA	130	NA	80	NA
Enterococcus	Cols/100ml	—	0	NA	2	NA	0	NA
Salinity	0/00	—	33.5	33.5	28.29	32.24	31.02	32.64
Dissolved Oxygen	mg/l	—	8.6	8.5	5.91	6.67	7.01	7.38
pH	—	—	8.1	8.05	8.22	8.20	8.13	8.07
NH3+NH4	u-at/l	—	1.1	2	5.9	5.30	0	0
BOD	mg/l	—	1.9	2.6	3.4	2.40	6	1.9

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds any of the listed criteria or guidance values.

Table A-5.1

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
ABCL

Parameter	Units	1997 ABCL ABCL 12-0m Ballona Channel 10/8/96	1997 ABCL ABCL 12-2m Ballona Channel 10/8/96	1997 ABCL ABCL 12-0m Ballona Channel 11/15/96	1997 ABCL ABCL 12-2m Ballona Channel 11/15/96	1997 ABCL ABCL 12-0m Ballona Channel 12/18/96	1997 ABCL ABCL 12-2m Ballona Channel 12/18/96	1997 ABCL ABCL 12-0m Ballona Channel 1/8/97	1997 ABCL ABCL 12-2m Ballona Channel 1/8/97	1997 ABCL ABCL 12-0m Ballona Channel 2/21/97
General										
Total Coliform	MPN/100ml	1300	NA	800	NA	16000	NA	9000	NA	16000
Fecal Coliform	MPN/100ml	300	NA	40	NA	300	NA	270	NA	240
Enterococcus	Col's/100ml	5	NA	7	NA	280	NA	0	NA	17
Salinity	0/00	24.7	30.26	32.48	33.43	23.9	32.51	28.33	32.88	21.09
Dissolved Oxygen	mg/l	7.91	8.06	7.46	7.43	8.57	8.1	6.8	7.05	12.73
pH	—	7.94	8.13	8.24	8.28	8.24	8.16	8.01	7.84	8.43
NH3+NH4	u-at/l	13.2	9.9	3.7	0	4.9	4.8	14.2	6.9	1.1
BOD	mg/l	NA	NA	NA	NA	3.3	1.3	4.6	2.8	3.3

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds criteria

Table A-5.1

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Ballona Channel - Saltwater Portion
ABCL

Parameter	Units	1997 ABCL ABCL 12-2m Ballona Channel 2/21/97	1997 ABCL ABCL 12-0m Ballona Channel 3/19/97	1997 ABCL ABCL 12-2m Ballona Channel 3/19/97	1997 ABCL ABCL 12-0m Ballona Channel 5/1/97	1997 ABCL ABCL 12-2m Ballona Channel 5/1/97	1997 ABCL ABCL 12-0m Ballona Channel 6/2/97	1997 ABCL ABCL 12-2m Ballona Channel 6/2/97	Saltwater			
									Minimum	Maximum	Mean	Hits / Total
General												
Total Coliform	MPN/100ml	NA	0	NA	2400	NA	220	NA	ND	16,000	4,188	9 / 11
Fecal Coliform	MPN/100ml	NA	0	NA	1300	NA	70	NA	ND	1,300	248	9 / 11
Enterococcus	Cols/100ml	NA	0	NA	0	NA	0	NA	ND	280	28.27	5 / 11
Salinity	0/00	32.55	26.47	32.55	28.23	32.98	28.6	33.28	21.09	33.5	30.16	22 / 22
Dissolved Oxygen	mg/l	13.92	6.1	13.92	9.07	9.48	5.5	5.71	5.5	13.92	8.27	22 / 22
pH	—	8.19	8.43	8.19	8.34	8.19	8.18	8.12	7.84	8.43	8.17	22 / 22
NH3+NH4	u-at/l	5.3	16.1	5.3	2.1	1	23.8	27	ND	27	6.98	19 / 22
BOD	mg/l	9	8.7	9	10.3	11	2.7	3.4	1.3	11	5.14	18 / 18

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131. Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds criteria

Table A-5.2

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
ABCL

Parameter	Units	CTR Chronic SW Criteria	COP Objectives	COP Chronic Toxicity	1997 ABCL ABCL 1-0m SMB 7/29/96	1997 ABCL ABCL 1-2m SMB 7/29/96	1997 ABCL ABCL 1-4m SMB 7/29/96	1997 ABCL ABCL 2-0m SMB 7/29/96	1997 ABCL ABCL 2-2m SMB 7/29/96	1997 ABCL ABCL 2-4m SMB 7/29/96	1997 ABCL ABCL 1-0m SMB 8/9/96
General											
Total Coliform	MPN/100ml	—	1000	—	40	NA	NA	0	NA	NA	170
Fecal Coliform	MPN/100ml	—	200	—	20	NA	NA	0	NA	NA	130
Enterococcus	Col's/100ml	—	—	—	0	NA	NA	0	NA	NA	4
Salinity	0/00	—	—	—	33.57	33.57	33.56	33.51	33.52	33.51	31.18
Dissolved Oxygen	mg/l	—	—	—	8.8	9	9.1	8.6	8.7	8.3	5.54
pH	—	—	—	—	8.14	8.14	8.13	8.12	8.1	9.16	8.21
NH3+NH4	u-at/l	—	—	—	0.7	0	0	0	0	0	0
BOD	mg/l	—	—	—	2	2.3	2.8	1.8	2.1	1.7	2.2

Notes:
0 - Not Detected
NA - Not Analyzed
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
COP Chronic Toxicity = 1997. California State Water Resources Control Board. California Ocean Plan. Table D Conservative Estimates of Chronic Toxicity.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds any of the listed criteria or guidance values.

Table A-5.2

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
ABCL

Parameter	Units	1997 ABCL ABCL 1-2m SMB 8/9/96	1997 ABCL ABCL 1-4m SMB 8/9/96	1997 ABCL ABCL 2-0m SMB 8/9/96	1997 ABCL ABCL 2-2m SMB 8/9/96	1997 ABCL ABCL 2-4m SMB 8/9/96	1997 ABCL ABCL 1-0m SMB 9/8/96	1997 ABCL ABCL 1-2m SMB 9/8/96	1997 ABCL ABCL 1-4m SMB 9/8/96
General									
Total Coliform	MPN/100ml	NA	NA	0	NA	NA	40	NA	NA
Fecal Coliform	MPN/100ml	NA	NA	0	NA	NA	40	NA	NA
Enterococcus	Col's/100ml	NA	NA	2	NA	NA	0	NA	NA
Salinity	0/00	33.01	33.4	33.3	33.3	33.51	31.14	33.22	33.45
Dissolved Oxygen	mg/l	5.69	8.22	7.08	7.08	8.16	8.13	8.88	9.54
pH	—	8.24	8.23	8.24	8.24	8.27	8.13	8.15	8.18
NH3+NH4	u-at/l	3.8	0	0	0	2.9	0	0	0
BOD	mg/l	0.7	1	1.3	1.3	2	1.4	2	1.8

Notes:
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COP Chronic Toxicity = 1997. California State Water Resources Control Board. California Ocean Plan. Table D Conservative Estimates of Chronic Toxicity.
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* Indicates exceeds criteria

Table A-5.2

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
ABCL

Parameter	Units	1997 ABCL ABCL 2-0m SMB 9/8/96	1997 ABCL ABCL 2-2m SMB 9/8/96	1997 ABCL ABCL 2-4m SMB 9/8/96	1997 ABCL ABCL 1-0m SMB 10/8/96	1997 ABCL ABCL 1-2m SMB 10/8/96	1997 ABCL ABCL 1-4m SMB 10/8/96	1997 ABCL ABCL 2-0m SMB 10/8/96	1997 ABCL ABCL 2-2m SMB 10/8/96
General									
Total Coliform	MPN/100ml	0	NA	NA	340	NA	NA	0	NA
Fecal Coliform	MPN/100ml	0	NA	NA	220 *	NA	NA	0	NA
Enterococcus	Col's/100ml	0	NA	NA	7	NA	NA	0	NA
Salinity	0/00	33.21	32.94	33.24	31.64	32.77	33.01	33.3	33.33
Dissolved Oxygen	mg/l	7.33	7.72	8.06	7.69	7.71	8.02	7.8	8.45
pH	—	8.07	8.09	8.13	8.11	8.11	8.11	8.07	8.08
NH3+NH4	u-at/l	0	0	0	7.6	3.9	3.3	3.9	4.2
BOD	mg/l	1.6	2.5	2.5	NA	NA	NA	NA	NA

Notes:
0 - Not Detected
NA - Not Analyzed
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
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* Indicates exceeds criteria

Table A-5.2

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
ABCL

Parameter	Units	1997 ABCL ABCL 2-4m SMB 10/8/96	1997 ABCL ABCL 1-0m SMB 11/15/96	1997 ABCL ABCL 1-2m SMB 11/15/96	1997 ABCL ABCL 1-4m SMB 11/15/96	1997 ABCL ABCL 2-0m SMB 11/15/96	1997 ABCL ABCL 2-2m SMB 11/15/96	1997 ABCL ABCL 2-4m SMB 11/15/96	1997 ABCL ABCL 1-0m SMB 12/18/96
General									
Total Coliform	MPN/100ml	NA	40	NA	NA	130	NA	NA	3000 *
Fecal Coliform	MPN/100ml	NA	20	NA	NA	20	NA	NA	2400 *
Enterococcus	Col's/100ml	NA	0	NA	NA	0	NA	NA	500
Salinity	0/00	33.31	33.37	33.41	33.45	33.39	33.42	33.45	32.07
Dissolved Oxygen	mg/l	9.48	8.62	8.59	8.69	8.59	8.52	8.5	7.6
pH	--	8.13	8.28	8.29	8.28	8.29	8.29	8.3	8.2
NH3+NH4	u-at/l	2.7	10.2	0	5.5	0	0	0	3.9
BOD	mg/l	NA	NA	NA	NA	NA	NA	NA	1.6

Notes:
0 - Not Detected
NA - Not Analyzed
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
COP Chronic Toxicity = 1997. California State Water Resources Control Board. California Ocean Plan. Table D Conservative Estimates of Chronic Toxicity.
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* Indicates exceeds criteria

Table A-5.2

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
ABCL

Parameter	Units	1997 ABCL ABCL 1-2m SMB 12/18/96	1997 ABCL ABCL 2-0m SMB 12/18/96	1997 ABCL ABCL 2-2m SMB 12/18/96	1997 ABCL ABCL 2-4m SMB 12/18/96	1997 ABCL ABCL 1-0m SMB 1/8/97	1997 ABCL ABCL 1-2m SMB 1/8/97	1997 ABCL ABCL 1-4m SMB 1/8/97	1997 ABCL ABCL 2-0m SMB 1/8/97	1997 ABCL ABCL 2-2m SMB 1/8/97
General										
Total Coliform	MPN/100ml	NA	1300 *	NA	NA	5000 *	NA	NA	50	NA
Fecal Coliform	MPN/100ml	NA	500 *	NA	NA	500 *	NA	NA	0	NA
Enterococcus	Cols/100ml	NA	80	NA	NA	22	NA	NA	2	NA
Salinity	0/00	33.06	30.71	32.64	32.95	30.2	33.2	33.27	32.9	32.99
Dissolved Oxygen	mg/l	7.46	7.62	7.38	7.31	7.17	6.98	7.14	7.52	7.41
pH	—	8.24	8.19	8.18	8.21	7.9	7.89	7.9	7.92	7.92
NH3-NH4	u-at/l	0	1.6	0	0	4.1	19.6	7	4.6	6.3
BOD	mg/l	1.4	2.1	1.5	1.4	1.9	1.5	1.6	1.8	1.9

Notes:
0 - Not Detected
NA - Not Analyzed
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
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Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds criteria

Table A-5.2

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
ABCL

Parameter	Units	1997 ABCL ABCL 2-4m SMB 1/8/97	1997 ABCL ABCL 1-0m SMB 2/21/97	1997 ABCL ABCL 1-2m SMB 2/21/97	1997 ABCL ABCL 1-4m SMB 2/21/97	1997 ABCL ABCL 2-0m SMB 2/21/97	1997 ABCL ABCL 2-2m SMB 2/21/97	1997 ABCL ABCL 2-4m SMB 2/21/97	1997 ABCL ABCL 1-0m SMB 3/19/97	1997 ABCL ABCL 1-2m SMB 3/19/97
General										
Total Coliform	MPN/100ml	NA	1100 *	NA	NA	0	NA	NA	16000 *	NA
Fecal Coliform	MPN/100ml	NA	0	NA	NA	0	NA	NA	1700 *	NA
Enterococcus	Col's/100ml	NA	0	NA	NA	0	NA	NA	4	NA
Salinity	0/00	33.26	30.93	32.98	33.33	33.19	32.98	33.52	25.33	33.01
Dissolved Oxygen	mg/l	7.33	6.69	6.75	6.82	7.62	7.85	7.97	8.94	8.81
pH	---	7.93	7.9	7.88	7.84	7.94	7.94	7.9	8.22	8.24
NH3+NH4	u-at/l	15.4	13.5	14.2	7.7	10.8	16.9	15.9	5.5	1.6
BOD	mg/l	2	1.8	1.2	0.9	0.9	1	1.2	3.1	2.5

Notes:
0 - Not Detected
NA - Not Analyzed
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
COP Chronic Toxicity = 1997. California State Water Resources Control Board. California Ocean Plan. Table D Conservative Estimates of Chronic Toxicity.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards. Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds criteria

Table A-5.2

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
ABCL

Parameter	Units	1997 ABCL ABCL 2-0m SMB 3/19/97	1997 ABCL ABCL 2-2m SMB 3/19/97	1997 ABCL ABCL 2-4m SMB 3/19/97	1997 ABCL ABCL 1-0m SMB 5/1/97	1997 ABCL ABCL 1-2m SMB 5/1/97	1997 ABCL ABCL 1-4m SMB 5/1/97	1997 ABCL ABCL 2-0m SMB 5/1/97	1997 ABCL ABCL 2-2m SMB 5/1/97	1997 ABCL ABCL 2-4m SMB 5/1/97
General										
Total Coliform	MPN/100ml	0	NA	NA	NA	1700 *	NA	220	NA	NA
Fecal Coliform	MPN/100ml	0	NA	NA	NA	300 *	NA	40	NA	NA
Enterococcus	Col's/100ml	0	NA	NA	NA	0	NA	0	NA	NA
Salinity	0/00	33.36	33.32	33.42	33.43	31.8	33.43	33.25	33.47	33.56
Dissolved Oxygen	mg/l	8.66	8.97	9.24	6.37	8.36	8.82	7.69	8.05	8.75
pH	—	8.16	8.18	8.26	8.17	8.24	8.26	8.17	8.18	8.21
NH3+NH4	u-at/l	0	0	0	0.9	4	0.6	0.8	0	0
BOD	mg/l	1.6	1.6	2.3	1.4	9.1	9.4	4.7	7.2	7.4

Notes:
0 - Not Detected
NA - Not Analyzed
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
COP Chronic Toxicity = 1997. California State Water Resources Control Board. California Ocean Plan. Table D Conservative Estimates of Chronic Toxicity.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds criteria

Table A-5.2

Summary of 1996-1997
Playa Vista Water Quality Sampling
Dry Weather - Santa Monica Bay
ABCL

Parameter	Units	1997 ABCL ABCL 1-0m SMB 6/2/97	1997 ABCL ABCL 1-2m SMB 6/2/97	1997 ABCL ABCL 1-4m SMB 6/2/97	1997 ABCL ABCL 2-0m SMB 6/2/97	1997 ABCL ABCL 2-2m SMB 6/2/97	1997 ABCL ABCL 2-4m SMB 6/2/97	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
General											
Total Coliform	MPN/100ml	130	NA	NA	0	NA	NA	ND	16,000	1,330	8 / 22
Fecal Coliform	MPN/100ml	110	NA	NA	0	NA	NA	ND	2,400	273	8 / 22
Enterococcus	Cols/100ml	0	NA	NA	0	NA	NA	ND	500	28.2	4 / 22
Salinity	0/00	31.05	33.51	33.57	33.12	33.3	33.35	25.33	33.57	32.9	21 / 64
Dissolved Oxygen	mg/l	5.83	5.95	5.84	6.56	6.71	6.89	5.54	9.54	7.78	21 / 64
pH	--	8.16	8.17	8.17	8.19	8.19	8.18	7.84	8.3	8.13	21 / 64
NH3+NH4	u-at/l	10.3	6.1	2.5	0	20.2	29.1	ND	29.1	4.25	18 / 84
BOD	mg/l	3.3	2.8	2.4	3.6	3.1	3.3	0.7	9.4	2.45	17 / 52

Notes:
0 - Not Detected
NA - Not Analyzed
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
COP Chronic Toxicity = 1997. California State Water Resources Control Board. California Ocean Plan. Table D Conservative Estimates of Chronic Toxicity.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds criteria

Table A-5.3

Summary of 1997
Playa Vista Water Quality Sampling
Wet Weather - Ballona Channel - Saltwater Portion
ABCL

Parameter	Units	CTR Acute SW Criteria	1997 ABCL ABCL 12-0m Ballona Channel 4/7/97	1997 ABCL ABCL 12-2m Ballona Channel 4/7/97	Saltwater					
					Minimum	Maximum	Mean	Hits	/	Total
General										
Total Coliform	MPN/100ml	—	0	NA	ND	ND	ND	0	/	1
Fecal Coliform	MPN/100ml	—	0	NA	ND	ND	ND	0	/	1
Enterococcus	Col's/100ml	—	0	NA	ND	ND	ND	0	/	1
Salinity	0/00	—	26.47	33.07	26.47	33.07	29.77	2	/	2
Dissolved Oxygen	mg/l	—	6.1	6.72	6.1	6.72	6.41	2	/	2
pH	—	—	8.43	8.2	8.2	8.43	8.32	2	/	2
NH3+NH4	u-at/l	—	16.1	13.8	13.8	16.1	14.95	2	/	2
BOD	mg/l	—	8.7	3.2	3.2	8.7	5.95	2	/	2

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds any of the listed criteria or guidance values.

Table A-5.4

Summary of 1997
Playa Vista Water Quality Sampling
Wet Weather - Santa Monica Bay
ABCL

Parameter	Units	CTR Acute SW Criteria	COP Objectives	COP Chronic Toxicity	1997 ABCL ABCL 1-0m SMB 4/7/97	1997 ABCL ABCL 1-2m SMB 4/7/97	1997 ABCL ABCL 1-4m SMB 4/7/97	1997 ABCL ABCL 2-0m SMB 4/7/97	1997 ABCL ABCL 2-2m SMB 4/7/97	1997 ABCL ABCL 2-4m SMB 4/7/97	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Saltwater Hits / Total
General														
Total Coliform	MPN/100ml	—	1000	—	0	NA	NA	20	NA	NA	ND	20	10	1 / 2
Fecal Coliform	MPN/100ml	—	200	—	0	NA	NA	20	NA	NA	ND	20	10	1 / 2
Enterococcus	Col's/100ml	—	—	—	0	NA	NA	0	NA	NA	ND	ND	ND	0 / 2
Salinity	O/OO	—	—	—	30.04	33.1	33.33	33.41	33.24	NA	30.04	33.41	32.62	5 / 5
Dissolved Oxygen	mg/l	—	—	—	6.37	6.43	6.53	5.93	6.55	NA	5.93	6.55	6.36	5 / 5
pH	—	—	—	—	8.34	8.33	8.35	8.25	8.25	NA	8.25	8.35	8.30	5 / 5
NH3+NH4	u-at/	—	—	—	5.5	2.1	5.8	2.4	22.6	5.2	2.1	22.6	7.27	6 / 6
BOD	mg/l	—	—	—	3	2.7	3.4	2.6	2.2	2.4	2.2	3.4	2.72	6 / 6

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
July 1996 - June 1997.
COP Objectives = 1997. California State Water Resources Control Board. California Ocean Plan. Table B Water Quality Objectives. Daily Maximums for aquatic life and 30-day Averages for human health.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
* Indicates exceeds any of the listed criteria or guidance values.

Table A-5.5

Summary of 1996
Playa Vista Sediment Quality Sampling
Ballona Channel - Saltwater Portion
ABCL

Parameter	Units	NOAA SQuIRT Marine Sediment PELs *	1997 ABCL ABCL 12 Ballona Channel	Saltwater			
		1999	7/1/96	Minimum	Maximum	Mean	Hits / Total
General							
Tributyltin	mg/kg	—	0.01	0.01	0.01	0.01	1 / 1
Total Organic Carbon	%	—	0.46	0.46	0.46	0.46	1 / 1
Volatile Solids	%	—	1.3	1.3	1.3	1.30	1 / 1
Immed. Oxygen Demand	%	—	0.25	0.25	0.25	0.25	1 / 1
Chem. Oxygen Demand	%	—	1.62	1.62	1.62	1.62	1 / 1
Oil and Grease	mg/kg	—	350	350	350	350	1 / 1
Organic Nitrogen	mg/kg	—	170	170	170	170	1 / 1
Nitrogen	mg/kg	—	190	190	190	190	1 / 1
Nitrate	mg/kg	—	350	350	350	350	1 / 1
Orthophosphate	mg/kg	—	37	37	37	37	1 / 1
Sulfides	mg/kg	—	85	85	85	85	1 / 1
Moisture	%	—	24.4	24.4	24.4	24.40	1 / 1
Spec. Cond.	mmhos/cm	—	26	26	26	26	1 / 1
Alkalinity as $CaCO_3$	mg/kg	—	730	730	730	730	1 / 1
Hardness as $CaCO_3$	mg/kg	—	2200	2,200	2,200	2,200	1 / 1
Total Dissolved Solids	%	—	2.1	2.1	2.1	2.10	1 / 1
Calcium	mg/kg	—	10900	10,900	10,900	10,900	1 / 1
Chloride	mg/kg	—	8320	8,320	8,320	8,320	1 / 1
Fluoride	mg/kg	—	0	ND	ND	ND	1 / 1
Potassium	mg/kg	—	2150	2,150	2,150	2,150	1 / 1
Sulfate	mg/kg	—	1100	1,100	1,100	1,100	1 / 1
Sodium	mg/kg	—	5010	5,010	5,010	5,010	1 / 1
Metals							
Arsenic	mg/kg	41.6	3.1	3.1	3.1	3.10	1 / 1
b Barium	mg/kg	48	41.1	41.1	41.1	41.10	1 / 1
Boron	mg/kg	—	6.03	6.03	6.03	6.03	1 / 1
Cadmium	mg/kg	4.21	0.636	0.636	0.636	0.64	1 / 1
Chromium	mg/kg	160.4	38.8	38.8	38.8	38.80	1 / 1
Copper	mg/kg	108.2	16	16	16	16	1 / 1
Iron	mg/kg	—	16700	16,700	16,700	16,700	1 / 1
Lead	mg/kg	112.19	125 *	125	125	125	1 / 1
b Manganese	mg/kg	260	148	148	148	148	1 / 1
Mercury	mg/kg	0.696	0.064	0.064	0.064	0.06	1 / 1
Nickel	mg/kg	42.8	66.9 *	66.9	66.9	66.9	1 / 1
b Selenium	mg/kg	1	0.33	0.33	0.33	0.33	1 / 1
Silver	mg/kg	1.77	0.663	0.663	0.663	0.66	1 / 1
Zinc	mg/kg	271	121	121	121	121	1 / 1

Table A-5.5

Summary of 1996
Playa Vista Sediment Quality Sampling
Ballona Channel - Saltwater Portion
ABCL

Parameter	Units	NOAA SQuiRT Marine Sediment PELs *	1997 ABCL ABCL 12 Ballona Channel	Saltwater			
		1999	7/1/96	Minimum	Maximum	Mean	Hits / Total
Pesticides and PCBs							
p,p' DDT	µg/kg	4.77	3	3	3	3.00	1 / 1
p,p' DDD	µg/kg	7.81	6.6	6.6	6.6	6.60	1 / 1
p,p' DDE	µg/kg	374.17	8.2	8.2	8.2	8.20	1 / 1
DDT & Derivatives	µg/kg	51.7	17.8	17.8	17.8	17.80	1 / 1
Endrin Aldehyde	µg/kg	—	0	ND	ND	ND	1 / 1
Heptachlor Epoxide	µg/kg	—	0	ND	ND	ND	1 / 1
alpha-Chlordane	µg/kg	—	6.6	6.6	6.6	6.60	1 / 1
gamma-Chlordane	µg/kg	—	7.7	7.7	7.7	7.70	1 / 1
All remaining Pesticides	µg/kg	—	14.3	14.3	14.3	14.30	1 / 1
Arochlor 1254	µg/kg	188.79	20	20	20	20	1 / 1

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
* Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic a
* Apparent Effects Threshold (AET) is used instead because PEL is not listed
* Indicates exceeds guidance values

Table A-5.6

Summary of 1996
Playa Vista Sediment Quality Sampling
Santa Monica Bay
ABCL

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1997 ABCL ABCL 1 SMB 7/1/96	1997 ABCL ABCL 2 SMB 7/1/96	Saltwater Minimum	Saltwater Maximum	Saltwater Mean	Hits / Total
General								
Tributyltin	mg/kg	—	0.005	0.01	0.005	0.01	0.008	2 / 2
Total Organic Carbon	%	—	0.33	1.6	0.33	1.6	0.97	2 / 2
Volatile Solids	%	—	0.8	4	0.8	4	2.40	2 / 2
Immed. Oxygen Demand	%	—	0.13	0.95	0.13	0.95	0.54	2 / 2
Chem. Oxygen Demand	%	—	0.73	3.1	0.73	3.1	1.92	2 / 2
Oil and Grease	mg/kg	—	120	250	120	250	185	2 / 2
Organic Nitrogen	mg/kg	—	230	930	230	930	580	2 / 2
Nitrogen	mg/kg	—	240	940	240	940	590	2 / 2
Nitrate	mg/kg	—	6.6	4.7	5	7	6	2 / 2
Orthophosphate	mg/kg	—	26	14	14	26	20	2 / 2
Sulfides	mg/kg	—	145	340	145	340	242.5	2 / 2
Moisture	%	—	27	36.8	27	36.8	31.9	2 / 2
Spec. Cond. (mmhos/cm)	mmhos/cm	—	26	32	26	32	29	2 / 2
Alkalinity as CaCO3	mg/kg	—	360	1100	360	1,100	730	2 / 2
Hardness as CaCO3	mg/kg	—	2500	3300	2,500	3,300	2,900	2 / 2
Total Dissolved Solids	%	—	1.6	2.2	1.6	2.2	1.90	2 / 2
Calcium	mg/kg	—	18100	14600	14,600	18,100	16,350	2 / 2
Potassium	mg/kg	—	1470	3290	1,470	3,290	2,380	2 / 2
Chloride	mg/kg	—	6750	23400	6,750	23,400	15,075	2 / 2
Fluoride	mg/kg	—	0	0	ND	ND	ND	0 / 2
Sulfate	mg/kg	—	974	2910	974	2,910	1,942	2 / 2
Sodium	mg/kg	—	4410	8110	4,410	8,110	6,260	2 / 2
Metals								
Arsenic	mg/kg	41.6	2.5	4.3	2.5	4.3	3.40	2 / 2
[b] Barium	mg/kg	48	34.2	61.3 *	34.2	61.3	47.75	2 / 2
Boron	mg/kg	—	5.23	17.7	5.23	17.7	11.47	2 / 2
Cadmium	mg/kg	4.21	0.283	0.794	0.283	0.794	0.54	2 / 2
Chromium	mg/kg	160.4	17	34.7	17	34.7	25.85	2 / 2
Copper	mg/kg	108.2	10.6	29.3	10.6	29.3	19.95	2 / 2
Iron	mg/kg	—	14700	21700	14,700	21,700	18,200	2 / 2
Lead	mg/kg	112.18	56.1	80.6	56.1	80.6	68.35	2 / 2
[b] Manganese	mg/kg	260	145	207	145	207	176	2 / 2
Mercury	mg/kg	0.696	0.112	0.136	0.112	0.136	0.12	2 / 2
Nickel	mg/kg	42.8	8.57	18.6	8.57	18.6	13.59	2 / 2
[b] Selenium	mg/kg	1	0.3	0.6	0.3	0.6	0.45	2 / 2
Silver	mg/kg	1.77	0.287	0.938	0.287	0.938	0.61	2 / 2
Zinc	mg/kg	271	61	181	61	181	121	2 / 2

Table A-5.6

Summary of 1996
Playa Vista Sediment Quality Sampling
Santa Monica Bay
ABCL

Parameter	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	1997 ABCL ABCL 1 SMB 7/1/96	1997 ABCL ABCL 2 SMB 7/1/96	Saltwater			
					Minimum	Maximum	Mean	Hits / Total
Pesticides a0 PCBs								
p,p' DDT	µg/kg	4.77	0	10 *	ND	10	5.00	1 / 2
p,p' DDD	µg/kg	7.81	2	5.3	2	5.3	3.65	2 / 2
p,p' DDE	µg/kg	374.17	4	12	4	12	8.00	2 / 2
DDT & Derivatives	µg/kg	51.7	6	27.3	6	27.3	16.65	2 / 2
Endrin Aldehyde	µg/kg	—	0	0	ND	ND	ND	0 / 2
Heptachlor Epoxide	µg/kg	—	0.3	2.5	0.3	2.5	1.40	2 / 2
alpha-Chlordane	µg/kg	—	0	6	ND	6	3.00	1 / 2
gamma-Chlordane	µg/kg	—	2.7	6	2.7	6	4.35	2 / 2
All remaining Pesticides	µg/kg	—	3	14.5	3	14.5	8.75	2 / 2
Arochlor 1254	µg/kg	188.79	20	40	20	40	30.00	2 / 2

Notes:
0 - Not Detected
0 - Not Detected
NA - Not Analyzed
PEL - Probable Effects Level, level above which adverse effects are frequently expected
1997 ABCL = 1997, September 15. Aquatic Bioassay Consulting Laboratory. The Marine Environment of Marina del Rey Harbor July 1996 - June 1997.
[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.
[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed
* Indicates exceeds guidance values

Appendix A-6

GeoSyntec Existing Data

Table A-6.1

Summary of 2000
Playa Vista Water Quality Sampling
Dry Weather - Ballona Wetlands
GeoSyntec

Parameters	Units	CTR Chronic SW Criteria	2000 GS GeoSyntec B-1 Jefferson Drain 4/13/00	2000 GS GeoSyntec B-3 Salt Marsh Effluent 4/13/00	Dry Weather			
					Minimum	Maximum	Mean	Hits / Total
General								
Total Hardness	mg/L	—	620	5650	620	5,650	3,135	2 / 2
Hydrogen Sulfide	mg/L	—	0	0	ND	ND	ND	0 / 2
TOC	mg/L	—	7.3	2.9	3	7	5	2 / 2
VOCs								
Benzene [a]	µg/L	71	0	0.71	ND	1	0	1 / 2
Acetone	µg/L	—	0	0	ND	ND	ND	0 / 2
MTBE	µg/L	—	0	0	ND	ND	ND	0 / 2
Toluene [a]	µg/L	200,000	0	0	ND	ND	ND	0 / 2
Metals								
Dissolved Antimony	µg/L	—	0	0	ND	ND	ND	0 / 2
Total Antimony	µg/L	—	0	0	ND	ND	ND	0 / 2
Dissolved Arsenic	µg/L	36	4.26	12.3	4	12	8	2 / 2
Total Arsenic	µg/L	—	3.19	5.5	3	6	4	2 / 2
Dissolved Barium	µg/L	—	73.1	35.5	36	73	54	2 / 2
Total Barium	µg/L	—	79.7	41.2	41	80	60	2 / 2
Dissolved Beryllium	µg/L	—	0	0	ND	ND	ND	0 / 2
Total Beryllium	µg/L	—	0	0	ND	ND	ND	0 / 2
Dissolved Cadmium	µg/L	9.3	0	0	ND	ND	ND	0 / 2
Total Cadmium	µg/L	—	0	0	ND	ND	ND	0 / 2
Dissolved Chromium [b]	µg/L	50	0	0	ND	ND	ND	0 / 2
Total Chromium [b]	µg/L	—	1.07	3.68	1	4	2	2 / 2
Dissolved Cobalt	µg/L	—	0	0	ND	ND	ND	0 / 2
Total Cobalt	µg/L	—	0	0	ND	ND	ND	0 / 2
Dissolved Copper	µg/L	3.1	5.06 *	17 *	5	17	11	2 / 2
Total Copper	µg/L	—	50.6	22.3	22	51	36	2 / 2
Dissolved Lead	µg/L	8.1	1.2	2.91	1	3	2	2 / 2
Total Lead	µg/L	—	2.01	6.41	2	6	4	2 / 2
Dissolved Mercury	µg/L	—	0	0	ND	ND	ND	0 / 2
Total Mercury	µg/L	—	0	0	ND	ND	ND	0 / 2
Dissolved Molybdenum	µg/L	—	8.78	12	9	12	10	2 / 2
Total Molybdenum	µg/L	—	9.78	12.4	10	12	11	2 / 2
Dissolved Nickel	µg/L	8.2	2.27	4.26	2	4	3	2 / 2
Total Nickel	µg/L	—	3.69	5.29	4	5	4	2 / 2
Dissolved Selenium	µg/L	71	9.82	48.4	10	48	29	2 / 2
Total Selenium	µg/L	—	6.59	13.5	7	14	10	2 / 2
Dissolved Silver	µg/L	—	0	0	ND	ND	ND	0 / 2
Total Silver	µg/L	—	0	0	ND	ND	ND	0 / 2
Dissolved Thallium	µg/L	—	0	0	ND	ND	ND	0 / 2
Total Thallium	µg/L	—	0	0	ND	ND	ND	0 / 2
Dissolved Vanadium	µg/L	—	4.47	4.39	4	4	4	2 / 2
Total Vanadium	µg/L	—	5.1	8.24	5	8	7	2 / 2
Dissolved Zinc	µg/L	81	38.7	18.4	18	39	28	2 / 2
Total Zinc	µg/L	—	72.9	34.7	35	73	54	2 / 2

Notes:

2000 GS = 2000. GeoSyntec Consultants. Data.

Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.

[a] CTR criteria are from human health organisms only criteria.

[b] The value for Hexavalent Chromium was used for chromium

0 - Not Detected
NA - Not Analyzed
ND - Not Detected
* Indicates exceeds any of the listed criteria or guidance values.

Table A-6.2

Summary of 2000
Playa Vista Water Quality Sampling
Wet Weather - Ballona Wetlands
GeoSyntec

Parameters	Units	CTR Acute SW Criteria	2000 GS GeoSyntec B-1 Jefferson Drain 4/17/00	2000 GS GeoSyntec B-3 Salt Marsh Effluent 4/17/00	Wet Weather			
					Minimum	Maximum	Mean	Hits / Total
General								
Hydrogen Sulfide	mg/L	—	NA	0.1	0.1	0.1	0	1 / 1
Total Hardness	mg/L	—	346	1980	346	1980	1163	1 / 2
pH	—	—	8.43	8.02	8.02	8.43	8	1 / 2
Specific Conductance	umhos/cm	—	1310	20500	1310	20500	10905	1 / 2
TOC	mg/L	—	6.6	5.6	5.6	6.6	6	1 / 2
Total Suspended Solids	mg/L	—	187	73	73	187	130	1 / 2
Turbidity	mg/L	—	141	35	35	141	88	1 / 2
VOCs								
MTBE	µg/L	—	NA	1.1	1.1	1.1	1	1 / 1
Metals								
Total Antimony	µg/L	—	1	NA	1	1	1	0 / 1
Dissolved Arsenic	µg/L	69	3.02	6.79	3.02	6.79	5	1 / 2
Total Arsenic	µg/L	—	4.73	7.06	4.73	7.06	6	1 / 2
Dissolved Barium	µg/L	—	43	18.6	18.6	43	31	1 / 2
Total Barium	µg/L	—	100	31.8	31.8	100	66	1 / 2
Dissolved Chromium [a]	µg/L	1100	4.37	2.18	2.18	4.37	3	1 / 2
Total Chromium [a]	µg/L	—	11.7	3.3	3.3	11.7	8	1 / 2
Total Cobalt	µg/L	—	3.59	1.45	1.45	3.59	3	1 / 2
Dissolved Copper	µg/L	4.8	3.25	7.19 *	3.25	7.19	5	1 / 2
Total Copper	µg/L	—	24.6	13.5	13.5	24.6	19	1 / 2
Total Lead	µg/L	—	17.6	12.9	12.9	17.6	15	1 / 2
Dissolved Molybdenum	µg/L	—	4.19	5.1	4.19	5.1	5	1 / 2
Total Molybdenum	µg/L	—	3.36	5.2	3.36	5.2	4	1 / 2
Dissolved Nickel	µg/L	74	2.23	2.74	2.23	2.74	2	1 / 2
Total Nickel	µg/L	—	9.94	4.27	4.27	9.94	7	1 / 2
Dissolved Selenium	µg/L	290	4.78	23.3	4.78	23.3	14	1 / 2
Total Selenium	µg/L	—	2.43	21	2.43	21	12	1 / 2
Dissolved Vanadium	µg/L	—	5.2	3.28	3.28	5.2	4	1 / 2
Total Vanadium	µg/L	—	22.2	7.62	7.62	22.2	15	1 / 2
Dissolved Zinc	µg/L	90	19.9	14.6	14.6	19.9	17	1 / 2
Total Zinc	µg/L	—	131	29.2	29.2	131	80	1 / 2

Notes:
0 - Not Detected
NA - Not Analyzed
ND - Not Detected
2000 GS = 2000. GeoSyntec Consultants. Data.
Final CTR SW Criteria = 2000, May 18. Federal Register Volume 65, No. 97, 40 CFR Part 131, Water Quality Standards, Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.
[a] The value for Hexavalent Chromium was used for chromium
* Indicates exceeds any of the listed criteria or guidance values.

c:\10610\2254\ale-ar\hydro-wq010413_suba\a\Appendices\ApcB-Hist\WQ\Village_MQec.xls\Tab2-Geo-SW-Wet-SW
8/12/03 4:53 PM | 1 of 1

Table A-6.3

Summary of 2000
Playa Vista Sediment Quality Sampling
Ballona Wetlands
GeoSyntec

Parameters	Units	NOAA SQuiRT Marine Sediment PELs [a] 1999	2000 GS GeoSyntec Composite B-3 Salt Marsh Effluent 4/13/00	2000 GS GeoSyntec Composite B-3 Salt Marsh Effluent 4/13/00	2000 GS GeoSyntec Composite B-4SD 4/13/00	Soil/Sediment			
						Minimum	Maximum	Mean	Hits / Total
General									
TOC	mg/kg	—	5350	2490	2080	2080	5350	3307	3 / 3
VOCs									
Acetone	µg/kg	—	NA	NA					
Benzene	µg/kg	—	NA	NA	0	ND	ND	ND	0 / 1
Carbon Disulfide	µg/kg	—	NA	NA	15	15	15	15	1 / 1
p-Isopropyltoluene	µg/kg	—	NA	NA	0	ND	ND	ND	0 / 1
m,p-Xylene	µg/kg	—	NA	NA	0	ND	ND	ND	0 / 1
Toluene	µg/kg	—	NA	NA	0	ND	ND	ND	0 / 1
					7.9	7.9	7.9	7.9	1 / 1
Metals									
Total Antimony	mg/kg	—	0.568	0	0.242	ND	0.568	0	2 / 3
Total Arsenic	mg/kg	41.6	4.21	2.29	2.68	2.29	4.21	3	3 / 3
[b] Total Barium	mg/kg	48	143 *	47.3	147 *	47.3	147	112.43	3 / 3
Total Beryllium	mg/kg	—	0.387	0.217	0.651	0.217	0.651	0.42	3 / 3
Total Cadmium	mg/kg	4.21	2.24	0.356	0.714	0.356	2.24	1.10	3 / 3
Total Chromium	mg/kg	160.4	26.4	11.4	23.2	11.4	26.4	20.33	3 / 3
[b] Total Cobalt	mg/kg	10	7.68	3.44	8.27	3.44	8.27	6.46	3 / 3
Total Copper	mg/kg	108.2	54.9	14.1	19.5	14.1	54.9	29.50	3 / 3
Total Lead	mg/kg	112.18	258 *	20.7	56	20.7	258	111.57	3 / 3
Total Mercury	mg/kg	0.696	0.184	0	0	ND	0.184	0.06	1 / 3
Total Molybdenum	mg/kg	—	1.54	1.491	0.31	0.31	1.54	1.11	3 / 3
Total Nickel	mg/kg	42.8	20.4	7.66	16.8	7.66	20.4	14.95	3 / 3
[b] Total Selenium	mg/kg	1	0	0	0	ND	ND	ND	0 / 3
Total Silver	mg/kg	1.77	1.21	0.402	0.464	0.402	1.21	0.69	3 / 3
Total Thallium	mg/kg	—	0.273	0.177	0.376	0.177	0.376	0	3 / 3
[b] Total Vanadium	mg/kg	57	29.1	17.9	32.7	17.9	32.7	27	3 / 3
Total Zinc	mg/kg	271	359 *	54.6	66	54.6	359	161	3 / 3
Pesticides									
4,4'-DDD	µg/kg	7.81	0	0	0	ND	ND	ND	0 / 3
4,4'-DDE	µg/kg	374.17	0	0	0	ND	ND	ND	0 / 3
4,4'-DDT	µg/kg	4.77	0	0	6.9 *	ND	6.9	2.30	1 / 3
Arochlor-1260	µg/kg	188.79	0	92	0	ND	92	30.67	1 / 3
Chlordane	µg/kg	4.79	84 *	0	0	ND	84	28	1 / 3

Notes:

0 - Not Detected

NA - Not Analyzed

ND - Not Detected

PEL - Probable Effects Level, level above which adverse effects are frequently expected

2000 GS = 2000. GeoSyntec Consultants. Data.

[a] Buchman, M.F., 1999. NOAA Screening Quick Reference Tables, NOAA HAZMAT Report 99-1, Seattle, WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration, 12 pages.

[b] Apparent Effects Threshold (AET) is used instead because PEL is not listed

* Indicates exceeds any of the listed criteria or guidance values.

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Appendix C
Water Quality Control Plan - Los Angeles Region Section 2

WATER QUALITY CONTROL PLAN

Los Angeles Region

Adopted by

California Regional Water Quality Control Board, Los Angeles Region on June 13, 1994.

Approved by

State Water Resources Control Board on November 17, 1994.

State Office of Administrative Law on February 23, 1995.

California Regional Water Quality Control Board, Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754

Telephone (213) 266-7500
Fax (213) 266-7600

2. BENEFICIAL USES

Table of Contents

Introduction

Beneficial uses form the cornerstone of water quality protection under the Basin Plan. Once beneficial uses are designated, appropriate water quality objectives can be established and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses. The designated beneficial uses, together with water quality objectives (referred to as criteria in federal regulations), form water quality standards. Such standards are mandated for all waterbodies within the state under the California Water Code. In addition, the federal Clean Water Act mandates standards for all surface waters, including wetlands.

Twenty-four beneficial uses in the Region are identified in this Chapter. These beneficial uses and their definitions were developed by the State and Regional Boards for use in the Regional Board Basin Plans. Three beneficial uses were added since the original 1975 Basin Plans. These new beneficial uses are Aquaculture, Estuarine Habitat, and Wetlands Habitat.

Beneficial uses can be designated for a waterbody in a number of ways. Those beneficial uses that have been attained for a waterbody on, or after, November 28, 1975, must be designated as "existing" in the Basin Plans. Other uses can be designated, whether or not they have been attained on a waterbody, in order to implement either federal or state mandates and goals (such as fishable and swimmable) for regional waters. Beneficial uses of streams that have intermittent flows, as is typical of many streams in southern California, are designated as intermittent. During dry periods, however, shallow ground water or small pools of water can support some beneficial uses associated with intermittent streams; accordingly, such beneficial uses (e.g., wildlife habitat) must be protected throughout the year and are designated "existing." In addition, beneficial uses can be designated as "potential" for several reasons, including:

- implementation of the State Board's policy entitled "Sources of Drinking Water Policy" (State Board Resolution No. 88-63, described in Chapter 5),
- plans to put the water to such future use,
- potential to put the water to such future use,
- designation of a use by the Regional Board as a regional water quality goal, or
- public desire to put the water to such future use.

Beneficial Use Definitions

Beneficial uses for waterbodies in the Los Angeles Region are listed and defined below. The uses are listed in no preferential order.

Municipal and Domestic Supply (MUN)
Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR)
Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Industrial Process Supply (PROC)
Uses of water for industrial activities that depend primarily on water quality.

Industrial Service Supply (IND)
Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

Ground Water Recharge (GWR)
Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

- Santa Catalina Island, Subarea One, Isthmus Cove to Catalina Head
- Santa Catalina Island, Subarea Two, North End of Little Harbor to Ben Weston Point
- Santa Catalina Island, Subarea Three, Farnsworth Bank Ecological Reserve
- Santa Catalina Island, Subarea Four, Binnacle Rock to Jewfish Point

The following areas are designated Ecological Reserves or Refuges:

- Channel Islands National Marine Sanctuary
- Santa Barbara Island Ecological Reserve
- Anacapa Island Ecological Reserve
- Catalina Marine Science Center Marine Life
- Point Fermin Marine Life Refuge
- Farnsworth Bank Ecological Reserve
- Lowers Cove Reserve
- Abalone Cove Ecological Reserve
- Big Sycamore Canyon Ecological Reserve

Rare, Threatened, or Endangered Species (RARE)
Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

Migration of Aquatic Organisms (MIGR)
Uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN)
Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Shellfish Harvesting (SHELL)
Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

Beneficial Uses for Specific Waterbodies

Tables 2-1 through 2-4 list the major regional waterbodies and their designated beneficial uses.

These tables are organized by waterbody type: (i) inland surface waters (rivers, streams, lakes, and inland wetlands), (ii) ground water, (iii) coastal waters (bays, estuaries, lagoons, harbors, beaches, and ocean waters), and (iv) coastal wetlands. Within Table 2-1 waterbodies are organized by major watersheds. Hydrologic unit, area, and subarea numbers are noted in the surface water tables (2-1, 2-3, and 2-4) as a cross reference to the classification system developed by the California Department of Water Resources. For those surface waterbodies that cross into other hydrologic units, such waterbodies appear more than once in a table. Furthermore, certain coastal waterbodies are duplicated in more than one table for completeness (e.g., many lagoons are listed both in inland surface waters and in coastal features tables). Major groundwater basins are classified in Table 2-2 according to the Department of Water Resources Bulletin No. 118 (1980). A series of maps (Figures 2-1 to 2-22) illustrates regional surface waters, ground waters, and major harbors.

The Regional Board contracted with the California Department of Water Resources for a study of beneficial uses and objectives for the upper Santa Clara River (DWR, 1989) and for another study of the beneficial uses and objectives the Piru, Sespe, and Santa Paula Hydrologic areas of the Santa Clara River (DWR, 1993). In addition, the Regional Board contracted with Dr. Prem Saint of California State University at Fullerton to survey and research beneficial uses of all waterbodies throughout the Region (Saint, et al., 1993a and 1993b). Information from these studies was used to update this Basin Plan.

State Board Resolution No. 88-63 (Sources of Drinking Water) followed by Regional Board Resolution No. 89-03 (Incorporation of Sources of Drinking Water Policy into the Water Quality Control Plans (Basin Plans)) states that " All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic waters supply and should be so designated by the Regional Boards ... [with certain exceptions which must be adopted by the Regional Board]." In adherence with these policies, all inland surface and ground waters have been designated as MUN - presuming at least a potential suitability for such a designation.

These policies allow for Regional Boards to consider the allowance of certain exceptions according to criteria set forth in SB Resolution No. 88-63. While

Wetlands also are protected under the Clean Water Act, which was enacted to restore and maintain the physical, chemical, and biological integrity of the nation's waters, including wetlands. Regulations developed under the CWA specifically include wetlands "as waters of the United States" (40 CFR 116.3) and defines them as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Although the definition of wetlands differs widely among federal agencies, both the USEPA and the U.S. Army Corps of Engineers use this definition in administrating the 404 permit program.

Recently, both state and federal wetlands policies have been developed to protect these valuable waters. Executive Order W-59-93 (signed by Governor Pete Wilson on August 23, 1993) established state policy guidelines for wetlands conservation. The primary goal of this policy is to ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage in California. The federal wetlands policy, representing a significant advance in wetlands protection, was unveiled by nine federal agencies on August 24, 1993. This policy represents an agreement that is sensitive to the needs of landowners, more efficient, and provides flexibility in the permit process.

The USEPA has requested that states adopt water quality standards (beneficial uses and objectives) for wetlands as part of their overall effort to protect the nation's water resources. The 1975 Basin Plans identified a number of waters which are known to include wetlands; these wetlands, however, were not specifically identified as such. In this Basin Plan, a wetlands beneficial use category has been added to identify inland waters that support wetland habitat as well as a variety of other beneficial uses. The wetlands habitat definition recognizes the uniqueness of these areas and functions they serve in protecting water quality. Table 2-4 identifies and designates beneficial uses for significant coastal wetlands in the Region. These waterbodies are also included on Tables 2-1 and 2-3. Beneficial uses of wetlands include many of the same uses designated for the rivers, lakes, and coastal waters to which they are adjacent, and include REC-1, REC-2, WARM, COLD, EST, MAR, WET, GWR, COMM, SHELL, MIGR, SPWN, WILD and often RARE or BIOL.

As some wetlands can not be easily identified in southern California because of the hydrologic regime, the Regional Board identifies wetlands using indicators such as hydrology, presence of hydrophytic plants (plants adapted for growth in water), and/or hydric soils (soils saturated for a period of time during the growing season). The Regional Board contracted with Dr. Prem Saint, et al. (1993a and 1993b), to inventory and describe major regional wetlands. Information from this study was used to update this Basin Plan.

Appendix D
Stormwater Rainfall Analysis (URSGWC)

URS Greiner Woodward Clyde

Memorandum

To: Tony Skidmore
Playa Vista EIS Team

From: Eric Strecker
Jim Howell

Office: Portland

Date: November 3, 1998

Subject: Playa Vista Stormwater Rainfall Analysis

Introduction

Presented is a summary of an analysis of the National Climactic Data Service (NCDC) hourly rainfall measurements from the National Weather Services' Los Angeles International Airport (LAX) weather station. The purposes of this analysis were threefold:

1. to provide rainfall depths which would be expected to contribute to runoff for the purpose of analyzing pre- and post-project stormwater quality,
2. to develop a rainfall characterization for a general description of the Playa Vista project and its environment and,
3. to develop information on larger storms to estimate their impact on the amount and frequency of freshening of the saltwater marsh.

Methodology

Hourly rainfall statistics from the LAX weather station for the years 1948 to 1997 were obtained from the NCDC. This information was input into the EPA's SYNOP statistical rainfall analysis program. The program aggregates the hourly data into individual storm events and develops storm statistics. The SYNOP program calculates the storm duration, volume, and intensity for individual storms as well as the mean and coefficient of variation. Inputs to the model include selecting the inter-event time to be used to separate individual rainfall hours into storm events as well as a minimum event size to analyze for the summary statistics. For this analysis an inter-event time of 6 hours (EPA, 1989) and a minimum storm size of 0.10 inches were used. This results in rainfall hours separated by less than 6 hours being aggregated into a single storm event. Storm events equal to and less than 0.10" on average are not expected to contribute significantly to runoff.

Results

All storm events were first considered by running the SYNOP with the minimum volume set to 0.0". Table 1 provides a summary of storm statistics as calculated by the SYNOP model for all storm events. "DELTA" represents the time interval between storm midpoints. COEF-VAR is the coefficient of variation, which is the standard deviation of the data set divided by the mean. The coefficient of variation provides an indication of the variability of the data.

Table 1: Average Event Statistics for LAX (all storm events)

STORM		MINIMUM	MAXIMUM	AVERAGE	COEF-VAR
DURATION	(hrs)	1	101	8.06	1.1
INTENSITY	(in/hr)	0.0029	0.3173	0.0443	0.94
VOLUME	(in)	0.01	7.44	0.41	1.61
DELTA	(hrs)			335.42	2.52
NUMBER OF STORMS per YEAR		17	57	30	0.26

Table 2 provides a similar summary of annual average storm statistics for all of the storms greater than 0.10 inches of total precipitation.

Table 2: Average Event Statistics for LAX (events greater than 0.10 in)

STORM		MINIMUM	MAXIMUM	AVERAGE	COEF-VAR
DURATION	(hrs)	1	101	11.78	0.83
INTENSITY	(in/h	0.0083	0.3173	0.0624	0.72
VOLUME	(in)	0.1	7.44	0.67	1.13
DELTA	(hrs)			649.78	2.61
NUMBER OF STORMS per YEAR		7	39	17	0.35

From this analysis, there is an average of 17 storm events per year greater than 0.1 inches in total depth. An average contribution of 0.67 inches of rainfall can be expected from each of the storms.

Figure 1 provides a graphical description of the total yearly precipitation at LAX for the years 1949 to 1997. Displayed is the total yearly precipitation for all events as well as the total from just the events greater than 0.10 in. in depth.

Figure 2 shows the average monthly precipitation for all storms and for storms with total depths greater than 0.10 in. over the same time period.

Figure 3 presents an historical record of all storm events greater than 0.10 inches in depth between 1948 and 1997 . This information was generated by the SYNOP program using a 6-hour or greater dry period to separate rainfall hours as being from separate storm events.

Figure 4 shows a frequency plot of all recorded storm depths between 1948 and 1997, a total of 1448 events. The storms are grouped into intervals of 0.10 inches. The left-hand axes shows the number of storms and the right-hand the relative percent or probability that a storm event will have a given depth.

Figure 5 is an analysis of total rainfall volume by storm event depth. All of the storms between 1949 and 1997 were considered in this analysis. The series labeled "*Cum Depth from X* " gives the total depth of rainfall generated from storms less than or equal to the magnitude given on the X axis. The series *labeled "Cum Depth from X + 1st X of Storms > X"* provides the total depth (and cumulative percentage) of rainfall that was generated by the 1st fraction of the storm indicated by the value on the X axis. The final series gives the cumulative percentage of rainfall generated by the storm fraction on the X axis. This analysis will be used to determine the minimum cumulative percentage of runoff that would be detained in the freshwater marsh and other detention basins designed t detain a storm of a given depth.

From the 49-year data set, the ten largest storms have been identified. Table 3 gives the date, duration, volume, average and maximum intensity for the ten largest storms. Figure 6 shows a plot of the total volume of the storms. Note that the durations of these storms are typically relatively high compared to the average storm volumes. This analysis will be utilized to assess the potential volume and frequency of freshening of the salt marsh by evaluating the capacity of the freshwater marsh vs. rainfall depth.

The return period for storms of various magnitudes were estimated using the relative frequency data presented in Figure 4. Table 4 gives the expected depths for 1, 5, 10, and 50 year storms. It should be noted that this analysis is not based upon some subjectively chosen duration (e.g. 24 hours) and therefore will differ from analysis that do so. (e.g., Los Angles City Design Storms, etc.)

Table 3: Event Statistics for 10 Largest Storms Recorded at LAX 1948-1997

DATE	DURATION (hours)	VOLUME (inches)	AVERAGE INTENSITY (inches/hr)	MAXIMUM INTENSITY (inches/hr)
1/25/56	50	7.44	0.15	0.53
2/19/58	11	3.49	0.32	0.6
2/7/62	49	4.94	0.1	0.49
2/9/63	46	4.21	0.09	0.54
11/20/67	38	6.07	0.16	0.97
3/7/68	17	3.54	0.21	0.89
1/18/69	52	5.03	0.1	0.72
1/3/74	101	5.16	0.05	0.36
3/28/83	54	3.47	0.06	0.43
1/4/95	17	3.5	0.21	0.99

Table 4: Return Period for 1, 5, 10, and 50 Year Storms at LAX Based on 1948-1997 Data

Return Period	(yrs)	1	5	10	50
Estimated Volume	(inches)	2	3.5	5	7.5

The analysis showed that 93% of rainfall from storms greater than 0.10"in the Los Angles area fell between the months of November and April. The program was re-run using only the data from these months. Table 5 shows the results of this analysis.

Table 5: Average Event Statistics for LAX Wet Season Only (November to April)

STORM		MINIMUM	MAXIMUM	AVERAGE	COEF-VAR
DURATION	(hrs)	1.0	101	12.09	0.82
INTENSITY	(in/h	0.0083	0.3173	0.0619	0.71
VOLUME	(in)	0.1	7.44	0.69	1.13
DELTA	(hrs)			214.84	1.24

Summary

Following are the major results of this analysis for purposes of stormwater analyses for the EIS:

1. For purposes of pollutant load modeling, the total average rainfall depth from storms of more than 0.10 inches is 11.66 inches.

2. The average volume and intensity of storms larger than 0.10 in. are 0.67 inches and 0.0624 inches per hour respectively.

3. From historical data analyzed with the STNOP model, there are on average 17 storm events of 0.10 inches or greater recorded at the LAX weather station per year.

4. The majority of these storms, and of rainfall depth (93 percent), occur between the months of November and April.

5. There is data to determine the amount of rainfall associated with storms of a given volume for purposes of assessing the potential detention of runoff from detention based best management practices, including the freshwater marsh.

6. Data is available to assess the return frequency of larger storm based upon their total volume and on the 10 largest events for purposes of assessing hydrological impacts of the project.

Figure 1: Total Annual Precipitation at LAX for Water Years 1949-1997

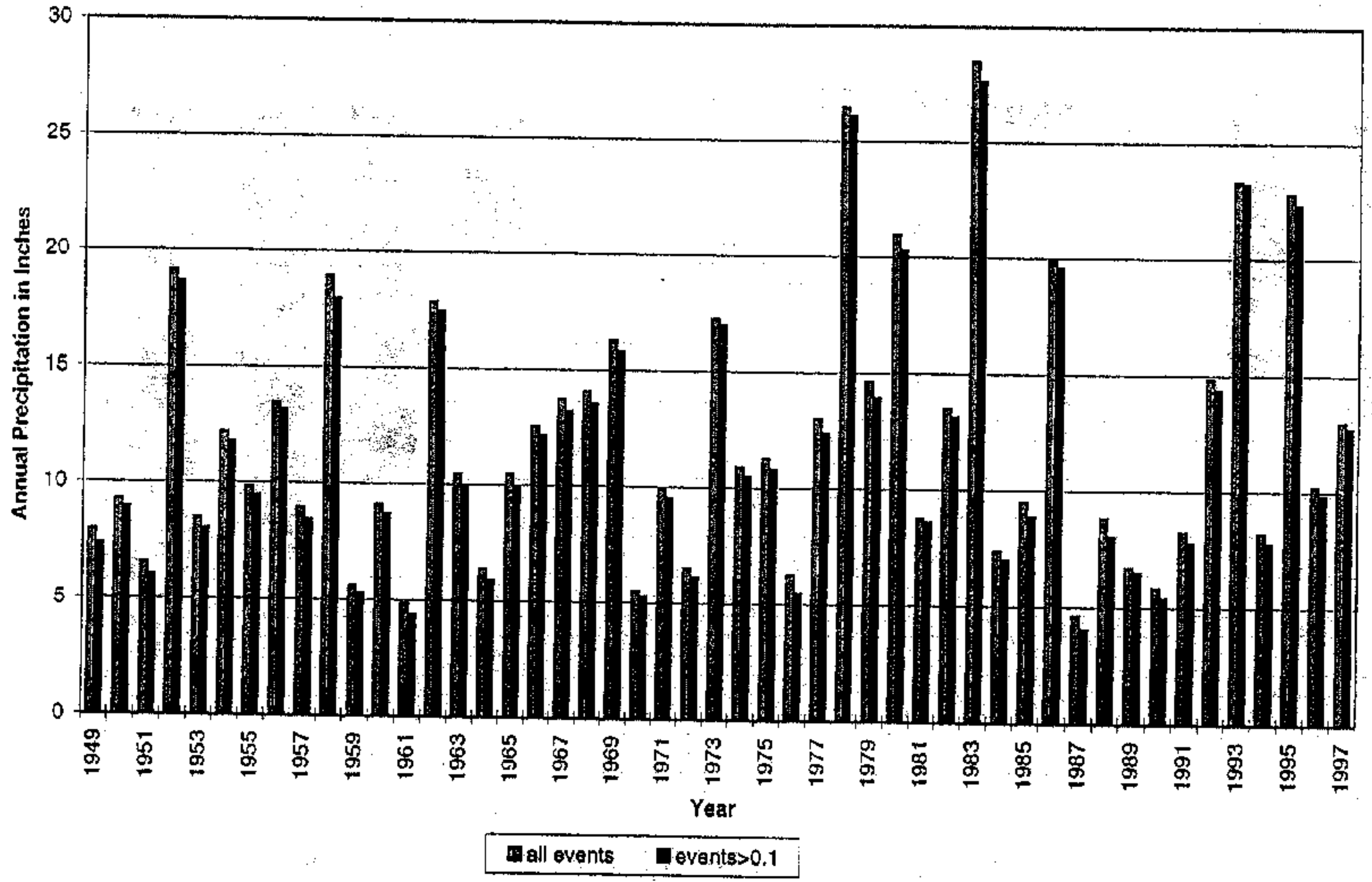


Figure 2: Average Monthly Precipitation a LAX for Water Years 1949-1997

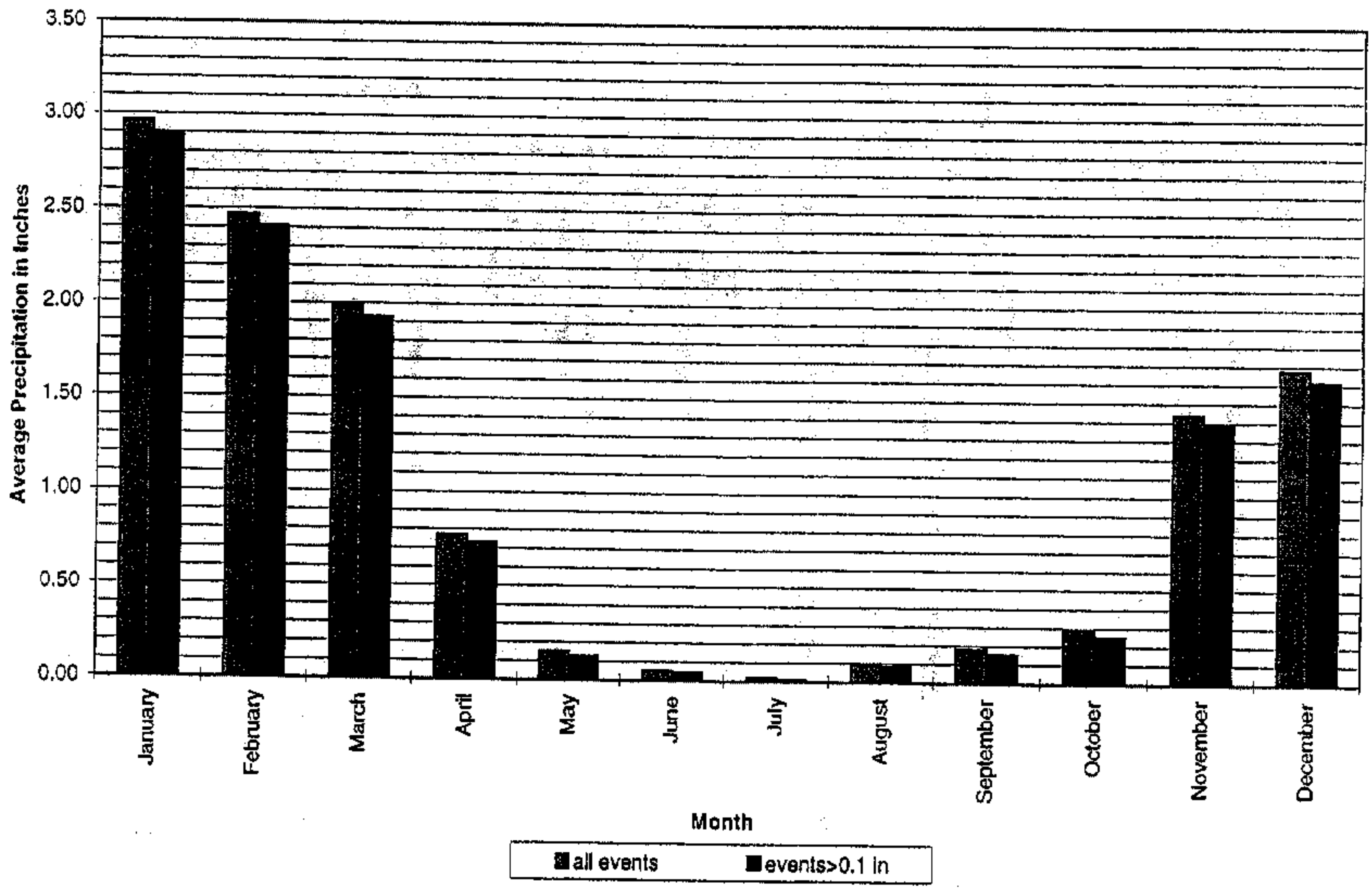


Figure 3: Individual Storm Volume in Inches for LAX Weather Station 1948-1997
(storm depths 0.10 in.+)

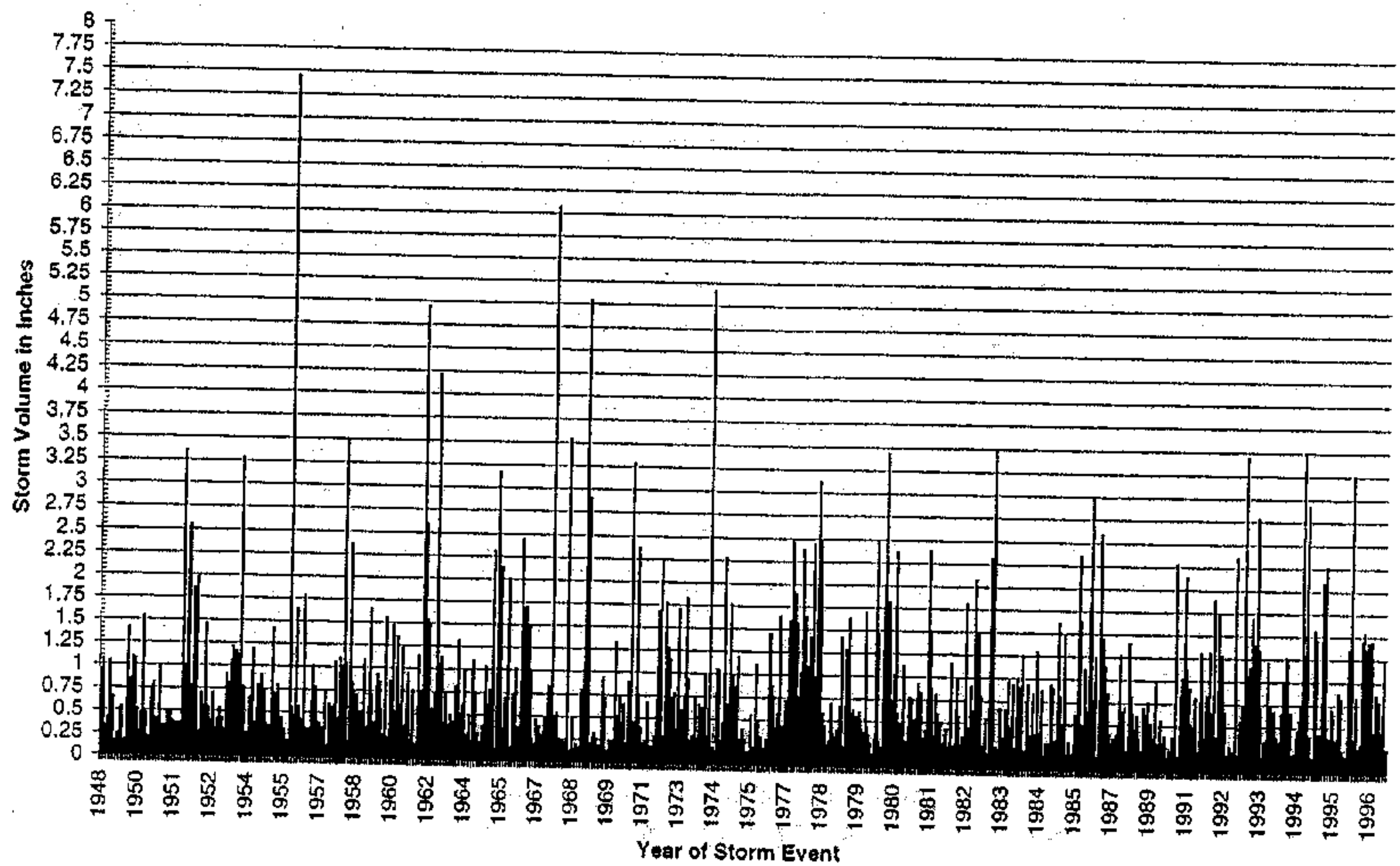


Figure 4: Frequency of Storms of Indicated Depths and Relative Percent for LAX Weather Station 1948-1997

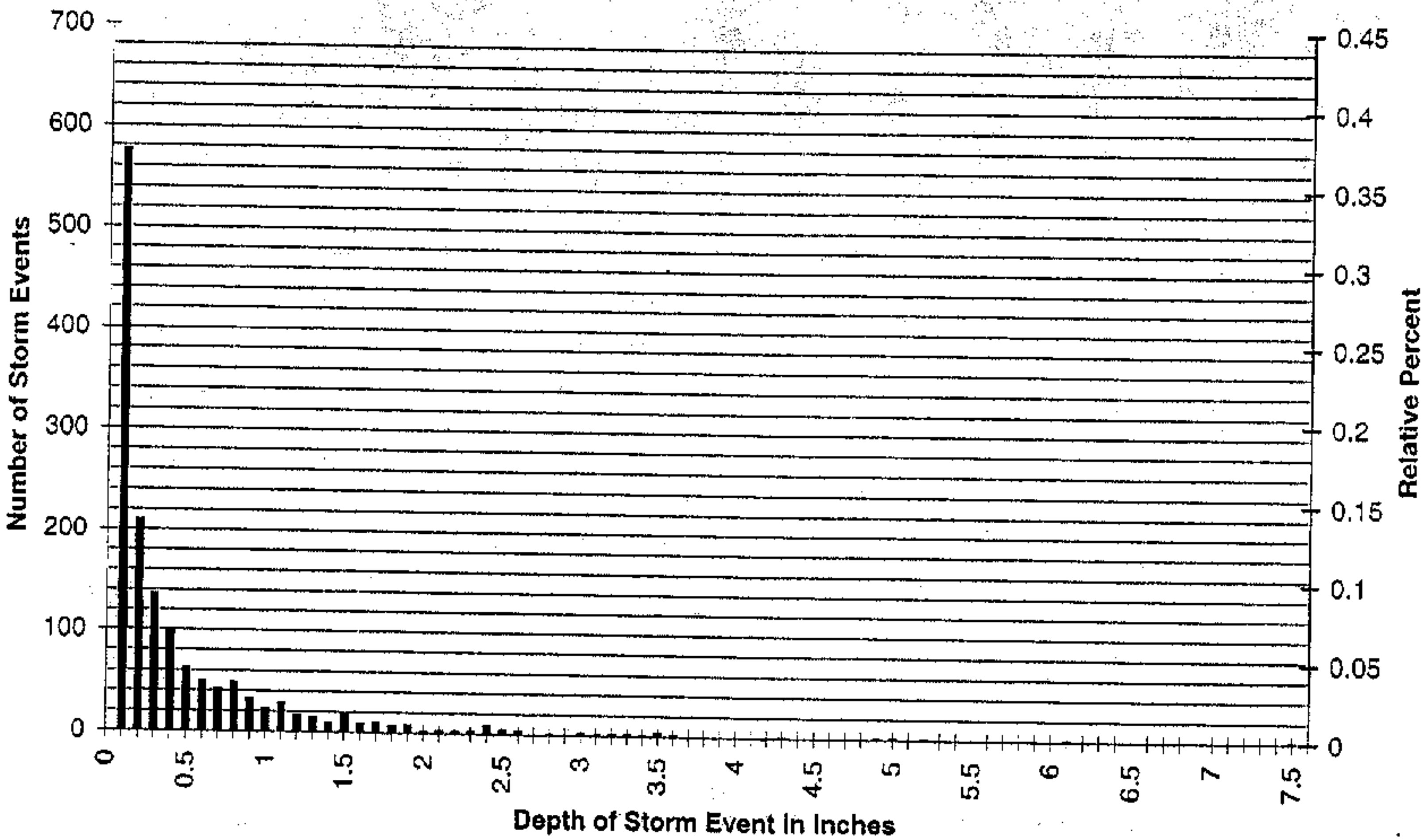


Figure 5: Total Rainfall Volume by Storm Event Depth for LAX Weather Station for Water Years 1949-1997

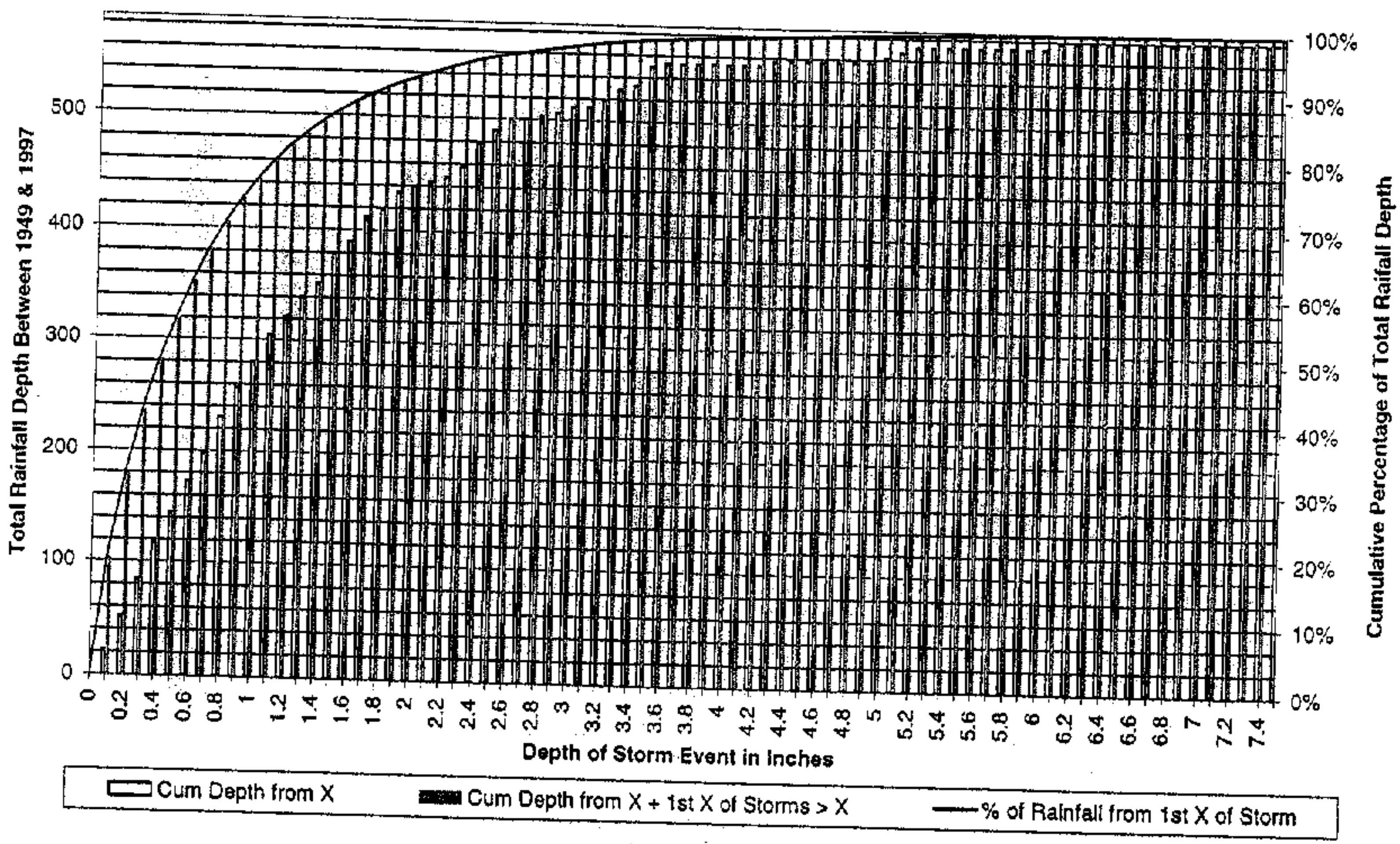
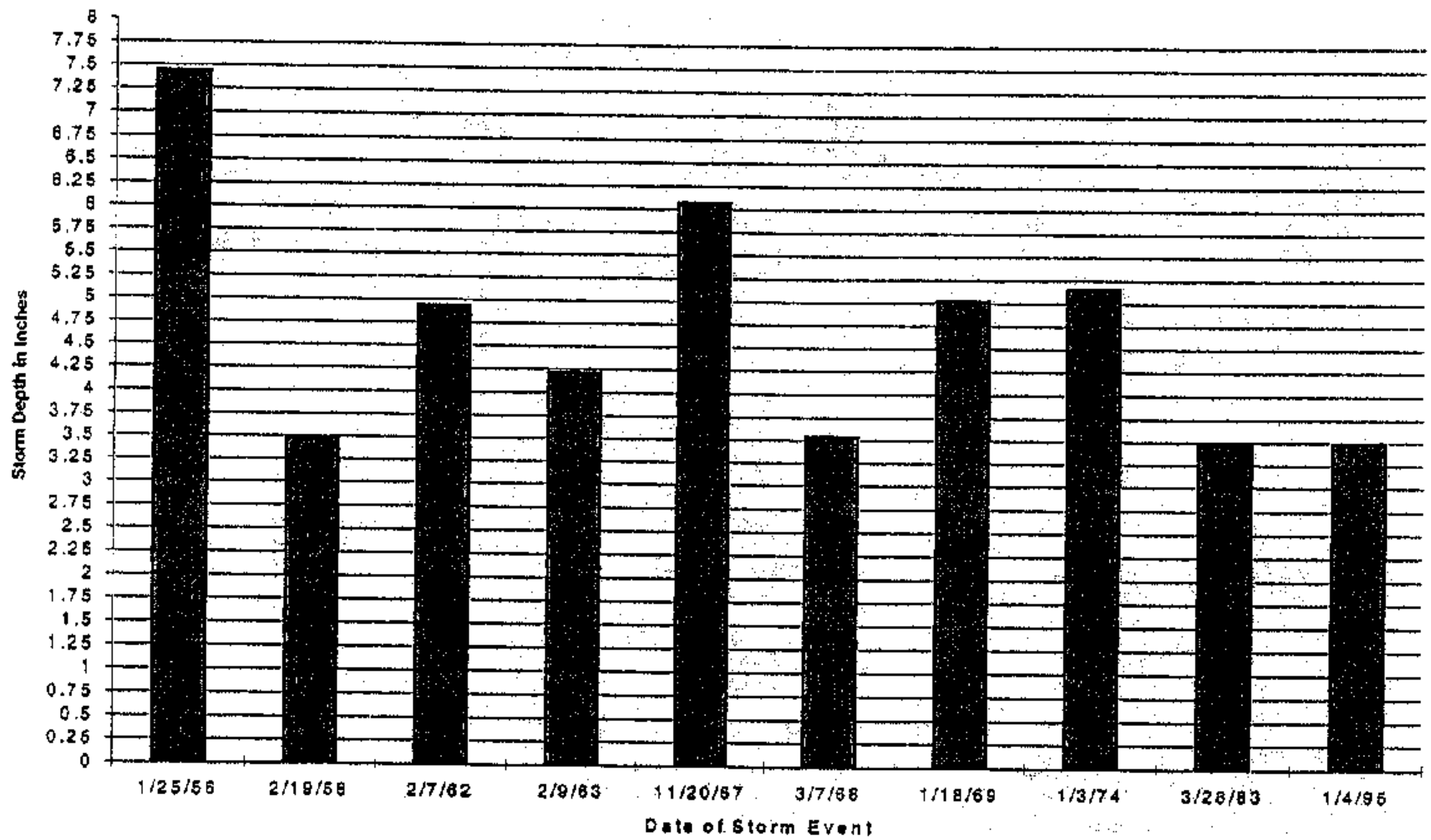


Figure 6: Storm Depth in Inches for 10 Largest Recorded Storm Events at LAX for Water Years 1948-1997



Appendix E
Stormwater EMC Analysis
(GeoSyntec Consultants)

Stormwater EMC Analysis
(GeoSyntec Consultants)

May 1, 2003

Introduction

For the purposes of assessing the potential impacts of the Proposed Village at Playa Vista on stormwater and resulting receiving water quality, a model was developed to predict changes in runoff volumes, pollutant loads and resulting concentrations (see Appendix F for a full description of the model input and output). The model utilizes average land use runoff concentrations along with hydrology calculations.

Estimated pollutant concentrations are necessary to:

- Quantify existing loads and concentrations to the Ballona Wetlands and the Ballona Creek Estuary
- Estimate runoff quality for the selection and design of appropriate treatment technologies, and
- Model after First Phase and after Proposed Project pollutant loads and concentrations for the purposes of assessing potential impacts of the Proposed Project

The most accurate estimates of pollutant concentrations are based on the analysis of stormwater sampling information collected during monitoring programs conducted near or at the project site. However, due to the variable nature of runoff concentration data, it almost always takes several years to collect enough data to produce statistically significant results. More commonly, average pollutant concentrations estimated in published historical studies are applied. Several sources of information for estimating land use water quality are available. National average pollutant concentrations for land use types were estimated in Nationwide Urban Runoff Program's Final Report published in 1983. Similar information was provided by the Federal Highway Administration for Highway related runoff in 1984. More recently, a number of municipalities have conducted stormwater monitoring programs including LA County, which has conducted stormwater-monitoring programs since 1996. Seven pollutants were identified in the First Phase EIR as being particularly important to the project and appropriate for modeling analysis. These pollutants included: total suspended solids(TSS), total phosphorus(TP), total Kjeldahl nitrogen(TKN), total copper(TCu), total lead(TPb), total Zinc(TZn), and total oil and grease.

Description of the LA County Stormwater Monitoring Program

The Los Angeles County Stormwater Monitoring Program was initiated with the goal of providing technical data and information to support effective watershed stormwater quality management programs in Los Angeles County. Specific objectives of this project included monitoring and assessing pollutant concentrations from specific land uses and watershed areas. In order to achieve this objective, the County undertook an extensive stormwater sampling project that included 7 land use stations and 5 mass emission stations, which were tested for 82 water quality parameters. These data were published in the *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report.*[1]

The land use monitoring stations capture runoff from smaller watersheds (0.1 to 1 square mile) with relatively homogeneous land use, Mass Emission Stations monitored runoff from major drainage areas near their outfall to the ocean. At both of these station types, flows were measured and automated samplers were installed to collect and composite stormwater samples during storm events. For the purposes of modeling, only the data from the land use monitoring sites were utilized. Furthermore only data from developed land uses that were similar to the uses anticipated for the Proposed Project were selected to the extent possible (i.e. data from stormwater monitoring of a commercial site by LA County is used to represent stormwater concentrations from commercial areas within the proposed development). A description of the land use stations monitored in the LA County program of which land use EMC data were utilized in the model and the years monitored by water year are provided in Table 1.

Table 1: Land Use Stations Monitored in the LA County Monitoring Program

Station Name	Station	Modeled Land Use	Drainage Area (acres)	Site Description	Years Monitored
Santa Monica Pier	S08	Commercial	0.13	The monitoring site is located near intersection of Appian Way and Moss Avenue in Santa Monica. The storm drain discharges below the Santa Monica Pier. Catchment area is approximately 81 acres. The Santa Monica Mall and Third St. Promenade dominate the watershed with remaining land uses consisting of office buildings, small shops, restaurants, hotels and high-density apartments.	1996-1999
Project 1202	S24	Industrial	1.07	Located in the Dominguez Channel/Los Angeles Harbor Watershed in the City of Carson. The monitoring station is near the intersection of Wilmington Avenue and 220th Street.	1996-2000
Sawpit Creek	S11	Open Space (Vacant)	5.18	Located in Los Angeles River watershed in City of Monrovia. The monitoring station is Sawpit Creek, downstream of Monrovia Creek. Sawpit Creek is a natural watercourse at this location. Catchment area is approximately 3300 acres.	1996-2000
Project 620	S18	High Density Single Family Residential	0.26	Located in the Los Angeles River watershed in the City of Glendale. The monitoring station is at the intersection of Glenwood Road and Cleveland Avenue. Land use is predominantly high-density, single-family residential. Catchment area is approximately 120 acres.	1996-2000

[1] http://ladpw.org/wmd/npdes/9400_wq_summaries.zip

Table 1: Land Use Stations Monitored in the LA County Monitoring Program

Station Name	Station	Modeled Land Use	Drainage Area (acres)	Site Description	Years Monitored
Dominguez Channel	S23	Freeway (Roads)	1.35	Located within the Dominguez Channel/Los Angeles Harbor watershed in Lennox, near LAX. The monitoring station is near the intersection of 116th Street and Isis Avenue. Land use is predominantly transportation and includes areas of LAX and Interstate 105.	1996-2000

Data Analysis

Data analysis conducted by Los Angeles County substituted values equal to half the laboratory detection limit in order to estimate descriptive statistics (e.g. mean and standard deviation) for event mean concentrations (EMCs) for each monitored pollutant at each land use monitoring station. These summarized data are reported in Table 4-12 of the *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report.* While substituting half the detection limit is a common practice due to its ease of implementation, this method is known to introduce bias into the estimates for both the mean and standard deviation.[2]

Previous studies have suggested that stormwater pollutant runoff concentrations tend to be logarithmically distributed.[3] If the distribution of a data set is known, values below the detection limit can be estimated using a maximum likelihood estimator.[4] For this evaluation, the individual event mean concentrations (raw data) for each of the land use monitoring sites in Table 1 were obtained from the Los Angeles Department of Public Works Watershed Management Division/NPDES Section.

Detection limits for the modeled pollutants are shown in Table 2 below. In an effort to derive more robust estimates of EMCs for the modeled pollutants, a maximum likelihood estimator method was used to analyze the monitoring data. This method ranks the log-transformed data above the detection limit, arbitrarily assigns ranks to the below the detection limit data, and extrapolates to estimate probable values of data below the detection limit using the Weibull plotting position formula.[5] These values are then used with the detect data to estimate the descriptive statistics. As described in the *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report*, the majority of pollutants from the monitored

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[2] Singh, A.K., A. Singh, and M. Engelhardt (1997). "The lognormal distribution in environmental applications." EPA Technology Support Center Issue, EPA 600-R-97-006.
[3] ASCE and WEF (1998). *Urban Runoff Quality Management, WEF Manual of Practice No. 23 and ASCE Manual and Report on Engineering Practice No. 87.* Water Environment Federation and the American Society of Civil Engineers.
[4] Helsel, D.R. and R.M. Hirsch (1993). *Studies in Environmental Science 49: Statistical Methods in Water Resources.* Elsevier Science B.V., Amsterdam, The Netherlands.
[5] The Weibull plotting position formula is $p=r/(n+1)$, where p is the probability or plotting position, r is the rank, and n is the total number of data points, both above and below the detection limit.

land uses are best characterized with a lognormal distribution, so all data sets were analyzed assuming the lognormal distribution. Using this assumption, the probability of a concentration value occurring can be assigned to each event in the log-converted data set (including the non-detect values). If the probability of the pollutant concentration occurring is plotted against the log of the concentration for the events above the detection limit (based on the probabilities assigned using the entire data set), a line can be fit to the data above the detection limit and the slope and intercept can be calculated. The slope corresponds to the standard deviation of the data set and intercept corresponds to the median. From these parameters station mean concentrations can be calculated using the statistical relationships between central tendency and error that exist for log-converted data. A mean calculated in this manner would take into account the non-detect values as if each was assigned an actual value based on the distribution of the data set. Again, from the calculated log transformed data means and variances, the population arithmetic means and arithmetic standard deviations can be calculated for each of the parameters.

Table 2: Monitoring Data Detection Limits and % of Detects for Modeled Parameters & Land Uses

% Detects & DL	TSS	TP	TKN	Oil & Grease	Tot Cu	Tot Pb	Tot Zn
Land Use / DL	2 mg/L	0.05 mg/L	0.1 mg/L	1 mg/L	5 ug/L	5 ug/L	50 ug/L
Transportation	100%	99%	100%	100%	100%	42%	100%
Light Industrial	100%	95%	100%	80%	100%	31%	100%
HDSF Residential	98%	100%	100%	100%	95%	45%	54%
Commercial	100%	97%	97%	88%	100%	38%	100%
Vacant	98%	48%	100%	0%	15%	8%	13%

Results

Tables 3 and 4 below provide a summary of the mean stormwater runoff pollutant concentrations calculated from the land use stations from the LA County stormwater monitoring data. These values represent the summarized data from all of the sampling events for each station, which were log transformed and adjusted for non-detects as described earlier. The amount of data available for oil and grease, one of the seven contaminants identified in the EIR as being significant to the project, was very limited (less than 8 events from most of the land uses). Therefore, the maximum likelihood method was not employed for this parameter and the summarized values provided in the *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report* were used and are displayed in tables below.

Table 3: Estimated Arithmetic Mean EMC Values for Modeled Parameters & Land Uses

	TSS	TP	TKN	Oil & Grease	Tot Cu	Tot Pb	Diss Zn
Land Use / Units	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L
Transportation	39.4	0.295	1.05	3.10	34.0	3.52	173
Commercial	67.6	0.399	3.11	3.28	34.8	20.8	239
Light Industrial	177.8	0.308	2.28	1.70	27.8	18.2	335
HDSF Residential	119.5	0.407	2.99	1.30	15.7	8.76	73.2
Vacant	223.6	0.124	0.976	0	8.87	3.21	21.9

Table 4: Estimated Arithmetic Standard Deviations for Modeled Parameters & Land Uses

Land Use	TSS	TP	TKN	Oil & Grease	Tot Cu	Tot Pb	Tot Zn
Transportation	26.0	0.164	0.418	1.46	10.7	4.82	62.7
Light Industrial	134	0.262	1.53	1.16	23.3	79.7	163.8
HDSF Residential	160	0.314	2.82	0.30	9.4	12.9	61.8
Commercial	48.9	0.336	3.25	1.68	30.8	168	154.5
Vacant	1567	0.411	0.939	0	18.9	1.18	111.0

Not all of the planned land uses are represented in the tables above. Therefore for the purposes of modeling, the average values from the commercial and residential land uses will be used for the proposed mixed commercial/residential land use areas, low density residential will be conservatively assumed to be equal to the high density residential.

Discussion and Conclusion

The average event mean pollutant concentrations calculated from LA County's raw land use EMC data are generally less than the mean values reported in the *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report*, but are generally closer to the median values. This is because the raw data tend to be positively skewed, such that the median is a better indicator of the data's central tendency than the mean, and if the data are lognormal (one type of distribution that is positively skewed) the log-transformed mean using lognormal theory (the method used to estimate the values in Table 3) is the minimum variance unbiased estimate of the data's central tendency. Furthermore, utilization of the below the detection limit values using the maximum likelihood estimator provides a more robust estimate of the descriptive statistics than substituting ½ the detection limit for all non-detects. Based on these factors, the results of the data analysis shown above are believed to provide more accurate estimates of land use-based EMCs for the purposes of modeling pollutant loads from the Proposed Project than simply using the summarized data in the *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report.*

Appendix F
Pollutant Loading Model Spreadsheet Results (GeoSyntec Consultants)

Introduction

The pollutant loading model developed for the Proposed Project at Playa Vista utilizes the land use EMCs summarized in Appendix E, as well as effluent quality data from structural stormwater best management practices (BMPs) included in the National Stormwater BMP Database[1] for estimating pollutant removals in both on-site BMPs and the Freshwater Wetlands System. The model is a spreadsheet model developed in Microsoft® Excel. A complete description of the model methodology is described in Section 3, Volume I of the Water Resources Technical Appendix. Model flow diagrams of the routing of stormwater runoff for pre-First Phase, after First Phase, and after the Proposed Project, as well as the BMPs used for stormwater treatment as part of the First Phase and Proposed Projects are shown in Figures F-1, F-2, and F-3, respectively. The model input and output data are described in the next subsections.

Input Data

The primary input data needed for the model include:

1. Land use acreages,
2. Percent imperviousness for each land use type,
3. Average annual rainfall (see Appendix D),
4. Land use EMCs (see Appendix E), and
5. Pollutant removal estimates for each type of planned BMP

The percent imperviousness values are used to calculate the runoff coefficient for each land use type, which together with the land use acreages and the average annual rainfall volume, the total annual runoff volumes can be estimated. Tables F-1, F-2, and F-3 are the pre-First Phase, First Phase, and Proposed Project land use acreages, respectively, that were used in the pollutant loading model. As discussed in Section 3.2.4.3.1-Model Methodology of Volume I of the Water Resources Technical Appendix, the average annual rainfall used in the model is 11.66 inches. The EMCs and percent imperviousness (and corresponding runoff coefficient) for each land use type are included in Table F-4.

As mentioned in Section 3.2.4.3.1-Model Methodology of Volume I of the Water Resources Technical Appendix, due to a statistically insignificant amount of data for dissolved metals in the L.A. County dataset for all of the modeled land uses, runoff EMCs for dissolved metals were estimated from fractionation values. These fractionation values were derived from the L.A. data with significant data points (i.e., commercial and high density single family residential from Table 4-12 of the *Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report*) and the influent data for retention ponds, biofilters, and wetland channels included in the NSW BMP Database (raw data presented in next section). The fractionation values used in the model are included in Table F-5.

The Proposed Project includes several planned BMPs, such as roof-drain planter boxes, vegetated swales, catch basin inserts, and the Freshwater Wetlands System (the Riparian

[1] www.bmpdatabase.org

Corridor and the Freshwater Marsh). In addition, the California Department of Transportation installed an off-site CDS unit in the Lincoln Storm Drain prior to its connection with the Freshwater Marsh and a vegetated swale on Lincoln Boulevard that is tributary to the Central Storm Drain. These BMPs are accounted for in the model by using either percent removals (for catch basin inserts) or effluent quality data (for all other BMPs) reported in the NSW BMP Database for BMPs that are assumed to perform similarly to the planned BMPs. Since there is not sufficient data in the database for roof-drain planter boxes, they are assumed to perform similarly to biofilters, which includes both vegetated swales and vegetated buffer strips. Therefore, the effluent quality of the roof-drain planter boxes is assumed to be equivalent to the effluent quality of vegetated swales. The flow diagrams (Figures F-1 through F-3) provide the percent removals and effluent quality concentrations for each of the BMPs, as well as estimated pollutant removals for the degraded Centinela Ditch and the Ballona Wetlands. The next section provides details on the NSW BMP Database data used to derive the effluent quality data for each of the modeled BMPs.

National Stormwater BMP Database Effluent Quality Analysis

For all estimates of BMP performance, summarized data from the NSW BMP Database were utilized.[2] Data from four different types of BMPs were extracted from the summarized database: retention ponds (i.e., wet ponds), wetland channels, biofilters (i.e., grass swales and strips), and hydrodynamic separators. The summarized data provided log-transformed arithmetic means and standard deviations for concentrations of each pollutant and BMP study site. The median of all of the site means were calculated and used as the BMP effluent quality for each pollutant and BMP type. Table F-6 includes the summarized retention pond influent and effluent data, Table F-7 includes the summarized wetland channel influent and effluent data, Table F-8 includes the summarized biofilter influent and effluent data, and Table F-9 includes the summarized hydrodynamic separator influent and effluent data

Model Output

The pollutant loading model calculates average annual runoff volumes and loads, as well as annual average concentrations, from Proposed Project areas, adjacent First Phase Project areas, and off-site areas for pre-First Phase conditions, after buildout of First Phase, and after buildout of the Proposed Project. The model also calculates loads and concentrations after treatment in both on-site and off-site BMPs. The following discussion of model results is divided according to pre-First Phase, Playa Vista First Phase Project, and the Proposed Project.

Pre-First Phase Model Results

Table F-10 provides the average annual runoff volumes for pre-First Phase conditions from the primary tributary areas to the primary receiving water bodies: the Freshwater Marsh and the Ballona Wetlands. Note that prior to the First Phase Project the Jefferson Storm Drain

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[2] ASCE 2002. *Internal Draft Analysis of the ASCE/EPA NSW BMP Database, 9/9/02.* Prepared by GeoSyntec Consultants, Inc

was directly tributary to the Ballona Wetlands. With the runoff volumes and the runoff EMCs presented in Appendix E, estimated average annual loads for each of the seven modeled pollutants (total suspended solids, total Kjeldahl nitrogen, total phosphorus, oil & grease, total copper, total lead, and total zinc) were calculated and are shown in Tables F-11 through F-17. As mentioned previously, dissolved metals loads are calculated using fractionation values (Table F-5) and are presented in the summary loads table (Tables F-18). Note that this table includes estimated pollutant removal in the degraded Centinela Ditch and the Ballona Wetlands. Estimated annual average pollutant concentrations are shown in Table F-19

After Playa Vista First Phase Project Model Results

Table F-20 provides the average annual runoff volumes for after the adjacent Playa Vista First Phase Project. Using these runoff volumes and the land use-based EMCs, pollutant loads were calculated for the seven primary pollutants of concern. Removal of pollutants in the off-site Jefferson Blvd. bioswale (tributary to the Central Drain) and the off-site Lincoln Blvd. CDS unit are accounted for prior to summing loads in their respective storm drains. Tables F-21a and F-21b present the estimated total suspended solids loads generated and removed, respectively, prior to entering the storm drain system. Similarly, Tables F-22a and F-22b present the total phosphorus loads generated and removed, Tables F-23a and F-23b present the total Kjeldahl nitrogen loads generated and removed, Tables F-24a and F-24b present the oil and grease, Tables F-25a and F-25b present the total copper loads generated and removed, Tables F-26a and F-26b present the total lead loads generated and removed, and Tables F-27a and F-27b present the total zinc loads generated and removed. The loads generated and the loads removed are added together and summarized in Table F-28. This table also includes removal in catch basin inserts, the Riparian Corridor, and the Freshwater Marsh. Estimated annual average concentrations are summarized in Table F-29.

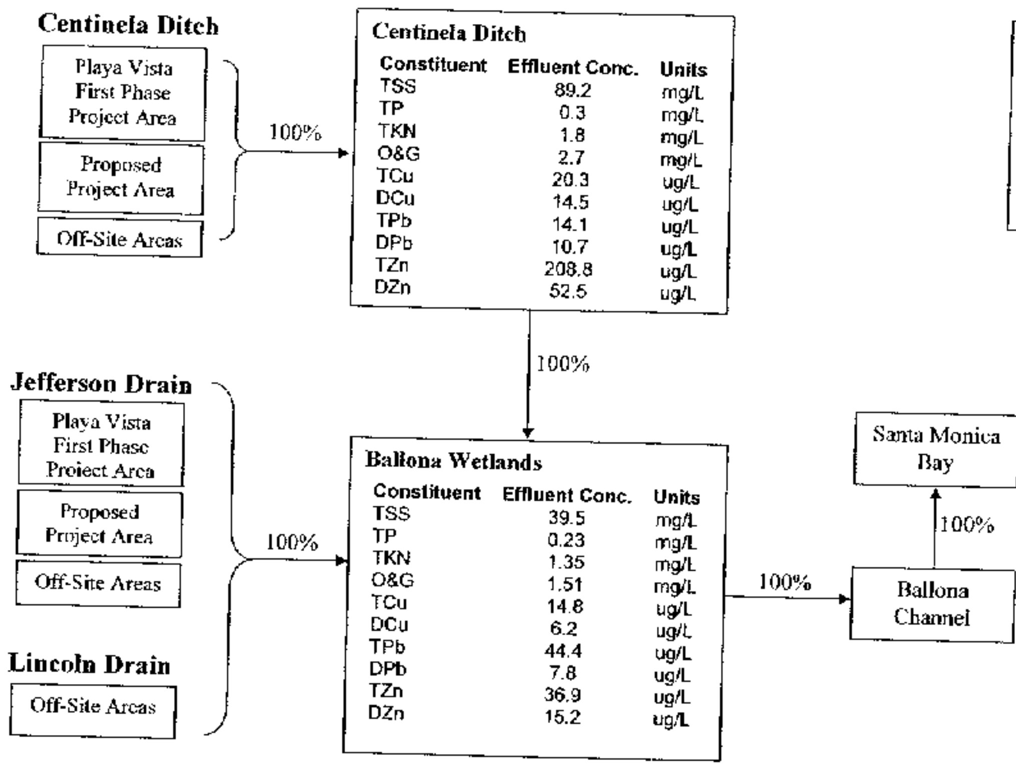
After Proposed Project Model Results

Table F-30 provides the average annual runoff volumes for after the Proposed Project. Using these runoff volumes and the land use-based EMCs, pollutant loads were calculated for the seven primary pollutants of concern. Similar to the First Phase, removal of pollutants in the off-site Jefferson Blvd. bioswale (tributary to the Central Drain) and the off-site Lincoln Blvd. CDS unit, as well as the additional on-site BMPs such as the roof-drain planter boxes for all buildings in the Central Drain tributary area and the vegetated swale in the Riparian Corridor tributary area, are accounted for prior to summing loads in their respective storm drains. Tables F-31a and F-31b present the estimated total suspended solids loads generated and removed, respectively, prior to entering the storm drain system. Similarly, Tables F-32a and F-32b present the total phosphorus loads generated and removed, Tables F-33a and F-33b present the total Kjeldahl nitrogen loads generated and removed, Tables F-34a and F-34b present the oil and grease, Tables F-35a and F-35b present the total copper loads generated and removed, Tables F-36a and F-36b present the total lead loads generated and removed, and Tables F-37a and F-37b present the total zinc loads generated and removed. The loads generated and the loads removed are added together and summarized in Table F-38. This table also includes removal in catch basin inserts, the Riparian Corridor, and the Freshwater Marsh. Estimated annual average concentrations are summarized in Table F-39.

Concluding Remarks

A detailed discussion of the model results is presented in Section 3, Volume I of this Technical Appendix. The pollutant loading model has been used to assess potential impacts to receiving waters as a result of the Proposed Village at Playa Vista. It was developed specifically for the Proposed Project using local land use pollutant concentration data, as well as summarized national BMP performance data. The land use-based EMC data collected by the County of Los Angeles has been thoroughly analyzed using state-of-the-practice techniques for environmental data. The water quality treatment assumed in the model is based on best available BMP performance data that has been thoroughly reviewed and summarized in accordance with American Society of Civil Engineers (ASCE) and Environmental Protection Agency (EPA) quality assurance and quality control protocols.[3] Therefore, the results of the model are believed to accurately represent average water quality conditions in the runoff from Proposed Project areas and adjacent Playa Vista First Phase Project areas, as well as off-site areas tributary to the Freshwater Wetlands System, Ballona Wetlands, and Ballona Channel.

[3] ASCE and EPA (2002). *Urban Stormwater BMP Performance Monitoring: A Guidance Manual for Meeting the National Stormwater BMP Database Requirements.* EPA-821-B-02-001.



Notes: Percentages are percent of flow.

TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
TCu = Total Copper
TPb = Total Lead
TZn = Total Zinc
TP = Total Phosphorus
O&G = Oil and Grease
DCu = Dissolved Copper
DPb = Dissolved Lead
DZn = Dissolved Zinc

Figure F-1. Model flow diagram for existing conditions prior to the First Phase Project.

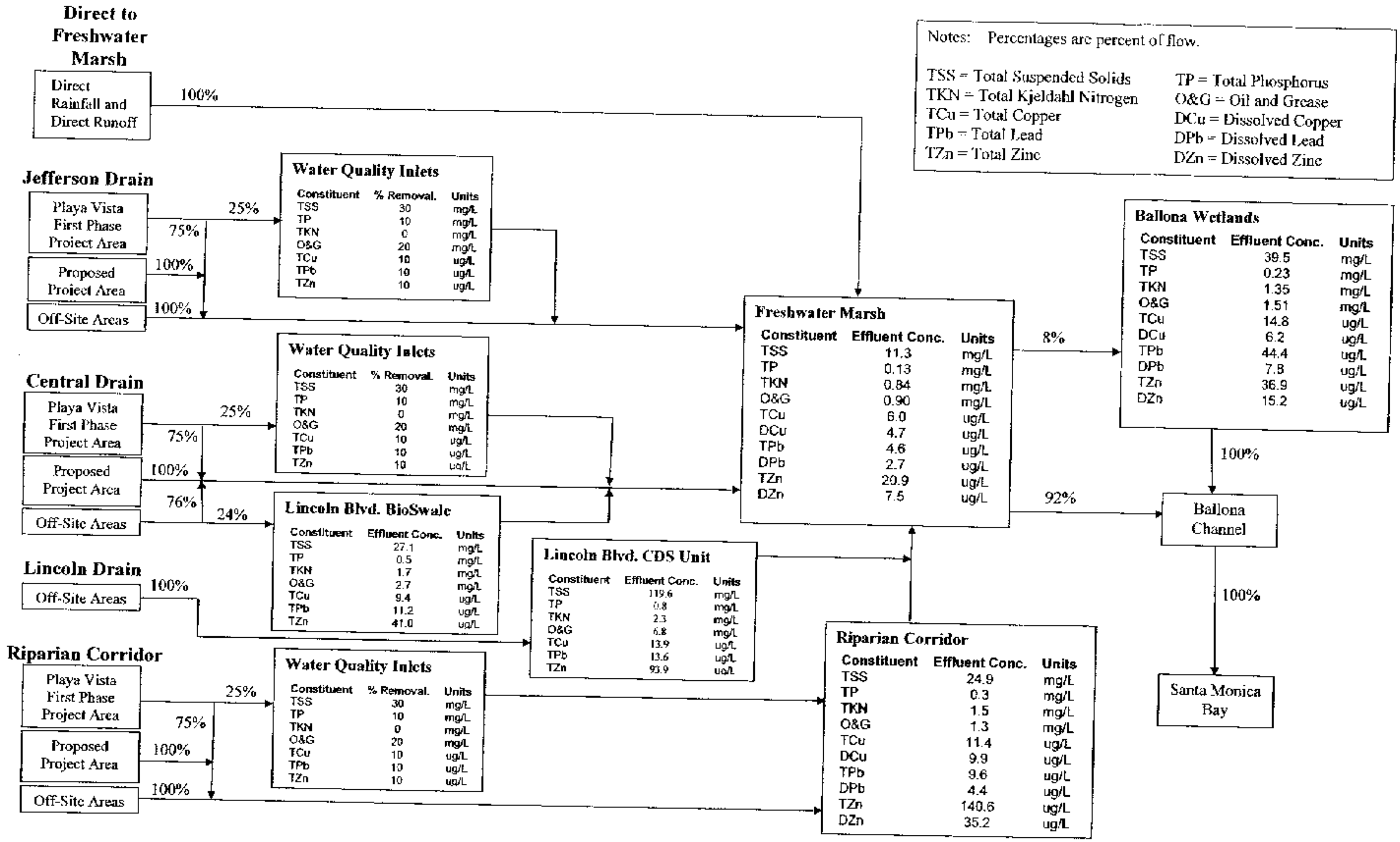


Figure F-2. Model flow diagram for after First Phase Project.

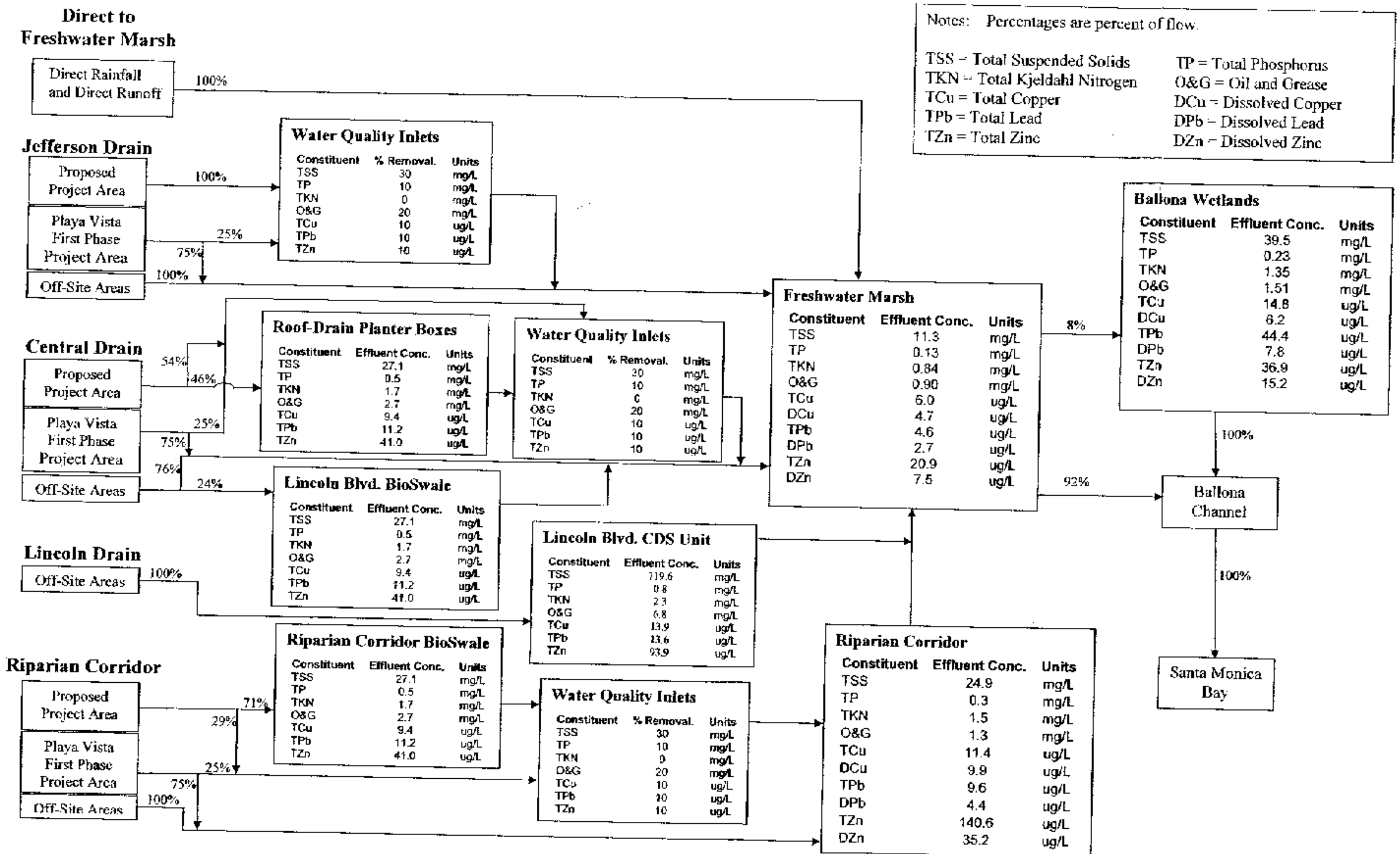


Figure F-3. Model flow diagram for after Proposed Project.

TABLE F-1

SUMMARY OF TRIBUTARY AREA (acres)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	IMPERVIOUSNESS FACTORS								Acreage
	1.00	1.00	1.00	1.00	1.00	1.00	0.40	0.20	Subtotals
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project			15.65		1.00			55.19	71.84
First Phase			78.43		4.70			37.99	121.12
Off-site	0.00		69.28	0.00			123.59	42.80	235.77
Subtotal	**0.00**	**0.00**	**163.36**	**0.00**	**5.70**	**0.00**	**123.59**	**135.98**	**428.73**
Centinela Ditch at Lincoln									
Proposed Project									0.00
First Phase			2.93					82.22	85.15
Off-site			18.28	2.03			30.70	4.88	55.89
Subtotal	**0.00**	**0.00**	**21.21**	**2.03**	**0.00**	**0.00**	**30.70**	**87.10**	**141.04**
Central Storm Drain (future)									
Proposed Project									0.00
First Phase									0.00
Off-site									0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South									
Proposed Project									0.00
First Phase								0.02	0.02
Off-site			4.11	4.89		7.04	74.46	0.40	90.90
Subtotal	**0.00**	**0.00**	**4.11**	**4.89**	**0.00**	**7.04**	**74.46**	**0.42**	**90.92**
Direct to Freshwater Marsh (Future)									
Proposed Project									0.00
First Phase							0.10	31.70	31.80
Off-site									0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	**31.70**	**31.80**
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	15.65	0.00	1.00	0.00	0.00	55.19	71.84
First Phase	0.00	0.00	81.36	0.00	4.70	0.00	0.10	151.93	238.09
Off-site	0.00	0.00	91.67	6.92	0.00	7.04	226.85	48.08	382.56
Total	**0.00**	**0.00**	**188.68**	**6.92**	**5.70**	**7.04**	**228.95**	**255.20**	**692.49**

TABLE F-1

SUMMARY OF TRIBUTARY AREA (acres)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	IMPERVIOUSNESS FACTORS								Acreage Subtotals
	1.00	1.00	1.00	1.00	1.00	1.00	0.40	0.20	
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project								37.63	**37.83**
First Phase			0.32					93.49	**93.81**
Off-site	65.42		12.06	36.37		9.17	93.30	48.16	**264.48**
Subtotal	**65.42**	**0.00**	**12.38**	**36.37**	**0.00**	**9.17**	**93.30**	**179.48**	**396.12**
Former Area B Residential**									
Proposed Project									**0.00**
First Phase									**0.00**
Off-site									**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
East Wetlands									
Proposed Project									**0.00**
First Phase									**0.00**
Off-site				1.67	1.40		29.13	84.69	**116.89**
Subtotal	**0.00**	**0.00**	**0.00**	**1.67**	**1.40**	**0.00**	**29.13**	**84.69**	**116.89**
South Wetlands									
Proposed Project									**0.00**
First Phase									**0.00**
Off-site			3.53	3.51	1.60	10.51	126.36	42.63	**188.14**
Subtotal	**0.00**	**0.00**	**3.53**	**3.51**	**1.60**	**10.51**	**126.36**	**42.63**	**188.14**
North Wetlands***									
Proposed Project									**0.00**
First Phase									**0.00**
Off-site			6.45	9.47	2.90	0.01	5.22	137.75	**161.80**
Subtotal	**0.00**	**0.00**	**6.45**	**9.47**	**2.90**	**0.01**	**5.22**	**137.75**	**161.80**
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.83	**37.83**
First Phase	0.00	0.00	0.32	0.00	0.00	0.00	0.00	93.49	**93.81**
Off-site	65.42	0.00	22.04	51.02	5.90	19.69	254.01	313.23	**731.31**
Total	**65.42**	**0.00**	**22.36**	**51.02**	**5.90**	**19.69**	**254.01**	**444.55**	**862.95**
Total Area - South of Ballona Channel									
Proposed Project	**0.00**	**0.00**	**15.65**	**0.00**	**1.00**	**0.00**	**0.00**	**93.02**	**109.67**
First Phase	**0.00**	**0.00**	**81.68**	**0.00**	**4.70**	**0.00**	**0.10**	**245.42**	**331.90**
Off-site	**65.42**	**0.00**	**113.71**	**57.94**	**5.90**	**26.73**	**482.86**	**361.31**	**1113.87**
Total	**65.42**	**0.00**	**211.04**	**57.94**	**11.60**	**26.73**	**482.96**	**699.75**	**1555.44**

TABLE F-2

SUMMARY OF TRIBUTARY AREAS (acres)
PLAYA VISTA - South of Ballona - First Phase Project

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	IMPERVIOUSNESS FACTORS									Acreage Subtotals
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.40	0.20	
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project			15.65						55.19	71.84
First Phase			71.65		1.00		0.00		7.62	83.47
Off-site	0.06		69.70	0.45	4.20			123.09	47.54	240.94
Subtotal	0.06	0.00	157.00	0.45	5.20	0.00	0.00	123.09	110.45	396.26
Riparian Corridor at Lincoln										
Proposed Project										0.00
First Phase			14.96		9.80		29.83		17.85	72.44
Off-site			18.01					31.42		49.43
Subtotal	0.00	0.00	32.97	0.00	9.80	0.00	29.83	31.42	17.85	121.87
Total Riparian Corridor Tributary Area	0.06	0.00	189.97	0.45	15.00	0.00	29.83	154.51	128.30	518.12
Central Storm Drain										
Proposed Project										37.26
First Phase			38.21				57.19		37.26	108.54
Off-site	0.01			8.15					13.14	8.16
Subtotal	0.01	0.00	38.21	8.15	0.00	0.00	57.19	0.00	50.40	153.96
Jefferson Storm Drain										
Proposed Project	0.00	0.21	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.5710
First Phase			14.99				18.59		1.84	35.41
Off-site	65.42		11.84	40.72			9.17	93.30	0.52	221.07
Subtotal	65.42	0.21	26.82	40.72	0.00	0.00	28.12	93.30	2.48	257.05
Lincoln Storm Drain - South										
Proposed Project										0.00
First Phase										0.24
Off-site			3.84	6.18			7.04	74.46	0.24	91.52
Subtotal	0.00	0.00	3.84	6.18	0.00	0.00	7.04	74.46	0.24	91.76
Freshwater Wetlands										
Proposed Project										0.00
First Phase				0.28	9.70			0.10	21.72	31.80
Off-site										0.00
Subtotal	0.00	0.00	0.00	0.28	9.70	0.00	0.00	0.10	21.72	31.80
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	0.21	15.65	0.00	1.00	0.00	0.36	0.00	92.45	109.67
First Phase	0.00	0.00	139.80	0.28	23.70	0.00	105.61	0.10	62.41	331.80
Off-site	65.49	0.00	103.39	56.50	0.00	0.00	16.21	322.27	48.26	611.12
Total	65.49	0.21	258.84	56.78	24.70	0.00	122.18	322.37	203.12	1052.69

TABLE F-2

SUMMARY OF TRIBUTARY AREAS (acres)
PLAYA VISTA - South of Ballona - First Phase Project

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	IMPERVIOUSNESS FACTORS									Acreage Subtotals
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.40	0.20	
Former Area B Residential										
Proposed Project										0.00
First Phase										0.00
Off-site				8.43					50.48	58.91
Subtotal	0.00	0.00	0.00	8.43	0.00	0.00	0.00	0.00	50.48	58.91
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	8.43	0.00	0.00	0.00	0.00	50.48	58.91
Total	0.00	0.00	0.00	8.43	0.00	0.00	0.00	0.00	50.48	58.91
Ballona Wetlands										
East Wetlands										
Proposed Project										0.00
First Phase										0.00
Off-site				2.21	0.90			29.13	84.66	116.89
Subtotal	0.00	0.00	0.00	2.21	0.90	0.00	0.00	29.13	84.66	116.89
South Wetlands										
Proposed Project										0.00
First Phase										0.00
Off-site			3.53	3.48	1.60		10.61	126.36	42.66	188.14
Subtotal	0.00	0.00	3.53	3.48	1.60	0.00	10.61	126.36	42.66	188.14
North Wetlands										
Proposed Project										0.00
First Phase										0.00
Off-site			6.45	5.83	2.90		0.01	5.23	118.38	138.80
Subtotal	0.00	0.00	6.45	5.83	2.90	0.00	0.01	5.23	118.38	138.80
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	9.98	11.52	5.40	0.00	10.52	160.72	245.69	443.83
Total	0.00	0.00	9.98	11.52	5.40	0.00	10.52	160.72	245.69	443.83
Total Area - South of Ballona Channel										
Proposed Project	0.00	0.21	15.65	0.00	1.00	0.00	0.36	0.00	92.45	109.67
First Phase	0.00	0.00	139.80	0.28	23.70	0.00	105.61	0.10	62.41	331.90
Off-site	65.49	0.00	113.37	75.45	5.40	0.00	26.73	482.99	344.43	1113.86
Total	65.49	0.21	268.82	75.73	30.10	0.00	132.70	483.09	499.29	1555.43

TABLE F-3

SUMMARY OF TRIBUTARY AREA SOUTH OF BALLONA (acres)
PLAYA VISTA - South of Ballona - Proposed Project

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	IMPERVIOUSNESS FACTORS								Acreage Subtotals
	1.00	1.00	1.00	1.00	1.00	1.00	0.40	0.20	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project									
Buildings		3.37				7.22			10.59
Impervious Areas		1.59				3.61			5.30
Pervious Areas		0.56			3.51	1.20		14.29	19.56
Roads		2.33				4.38			7.31
Proposed Project Subtotal	0.00	7.95	0.00	0.00	3.51	17.02		14.29	42.76
First Phase			71.65		4.20	0.00	0.00	7.62	83.47
Off-site	0.06		59.70	0.45			123.09	47.64	240.94
Subtotal	0.06	7.95	141.35	0.45	7.71	17.02	123.09	69.55	367.17
Riparian Corridor at Lincoln									
Proposed Project									0.00
First Phase			14.96		9.80	29.63		17.65	72.44
Off-site			18.01				31.42		49.43
Subtotal	0.00	0.00	32.97	0.00	9.80	29.83	31.42	17.65	121.87
Total Riparian Corridor Tributary Area	0.06	7.95	174.32	0.45	17.51	46.85	154.51	87.40	489.04
Central Storm Drain									
Proposed Project									
Buildings		7.03				22.07			29.10
Impervious		3.51				11.18			14.70
Pervious		1.17				3.73		3.77	8.67
Roads		3.25				10.64			13.89
Proposed Project Subtotal	0.00	14.97	0.00	0.00	0.00	47.63	0.00	3.77	66.36
First Phase			38.21			57.19		13.14	108.54
Off-site	0.01			8.15					8.16
Subtotal	0.01	14.97	38.21	8.15	0.00	104.82	0.00	16.91	183.06
Jefferson Storm Drain									
Proposed Project									
Buildings		0.08				0.13			0.21
Impervious		0.04				0.06			0.10
Pervious		0.01				0.02			0.03
Roads		0.09				0.14			0.23
Proposed Project Subtotal	0.00	0.21	0.00	0.00	0.00	0.36	0.00	0.00	0.57
First Phase			14.98			18.59		1.84	35.41
Off-site	65.42		11.84	40.72		9.17	93.30	0.62	221.07
Subtotal	65.42	0.21	26.82	40.72	0.00	28.12	93.30	2.46	257.05
Lincoln Storm Drain - South									
Proposed Project									0.00
First Phase								0.24	0.24
Off-site			3.84	6.18		7.04	74.45		91.52
Subtotal	0.00	0.00	3.84	6.18	0.00	7.04	74.46	0.24	91.76
Freshwater Wetlands									
Proposed Project									0.00
First Phase				0.28	9.70		0.10	21.72	31.80
Off-site									0.00
Subtotal	0.00	0.00	0.00	0.28	9.70	0.00	0.10	21.72	31.80
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	23.13	0.00	0.00	3.51	65.00	0.00	18.06	109.69
First Phase	0.00	0.00	139.80	0.28	23.70	105.61	0.10	62.41	331.90
Off-site	65.49	0.00	103.39	55.50	0.00	16.21	322.27	48.26	611.12
Total	65.49	23.13	243.19	55.78	27.21	186.82	322.37	128.73	1,052.71

TABLE F-3

SUMMARY OF TRIBUTARY AREA SOUTH OF BALLONA (acres)
PLAYA VISTA - South of Ballona - Proposed Project

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	IMPERVIOUSNESS FACTORS								Acreage Subtotals
	1.00	1.00	1.00	1.00	1.00	1.00	0.40	0.20	
Former Area B Residential									
Proposed Project									0.00
First Phase									0.00
Off-site				8.43				50.48	58.91
Subtotal	0.00	0.00	0.00	8.43	0.00	0.00	0.00	50.48	58.91
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	8.43	0.00	0.00	0.00	50.48	58.91
Total	0.00	0.00	0.00	8.43	0.00	0.00	0.00	50.48	58.91
Ballona Wetlands									
East Wetlands									
Proposed Project									0.00
First Phase									0.00
Off-site				2.21	0.90		29.13	84.65	116.89
Subtotal	0.00	0.00	0.00	2.21	0.90	0.00	29.13	84.65	116.89
South Wetlands									
Proposed Project									0.00
First Phase									0.00
Off-site			3.53	3.48	1.60	10.51	126.36	42.66	188.14
Subtotal	0.00	0.00	3.53	3.48	1.60	10.51	126.36	42.66	188.14
North Wetlands									
Proposed Project									0.00
First Phase									0.00
Off-site			6.45	5.83	2.90	0.01	5.23	118.38	138.80
Subtotal	0.00	0.00	6.45	5.83	2.90	0.01	5.23	118.38	138.80
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	9.98	11.52	5.40	10.52	160.72	245.69	443.83
Total	0.00	0.00	9.98	11.52	5.40	10.52	160.72	245.69	443.83
Total Area - South of Ballona Channel									
Proposed Project	0.00	23.13	0.00	0.00	3.51	65.00	0.00	18.06	109.69
First Phase	0.00	0.00	139.80	0.28	23.70	105.61	0.10	62.41	331.90
Off-site	65.49	0.00	113.37	75.45	5.40	26.73	482.99	344.43	1,113.86
Total	65.49	23.13	253.17	75.73	32.61	197.34	483.09	424.90	1,555.45

Table F-4

Playa Vista
Event Mean Concentrations (mg/L) and Imperviousness Factors (%)

Pollutant	Constituent Values (mg/L)							
	Industrial	Commercial/Residential	Commercial	Transportation	Water	High Density Residential	Low Density Residential	Open Space
LA County EMCs								
TSS	177.85	53.95	67.63	39.40	0.00	40.28	40.28	223.62
Total P	0.308	0.318	0.399	0.295	0.000	0.236	0.236	0.124
Total Cu	0.028	0.023	0.035	0.034	0.000	0.011	0.011	0.009
Total Pb	0.018	0.012	0.021	0.004	0.000	0.003	0.003	0.003
Total Zn	0.335	0.168	0.239	0.173	0.000	0.097	0.097	0.022
O&G	1.700	2.289	3.278	3.100	0.000	1.300	1.300	0.000
TKN	2.284	2.461	3.113	1.053	0.000	1.810	1.810	0.976
Impervious Factors (%)	100	100	100	100	100	100	40	20
Runoff Coefficients	0.8	0.8	0.8	0.8	0.8	0.8	0.38	0.24

Notes:

Values for oil and grease were obtained from Santa Monica Bay Report means (Stenstrom, 1993).

Water areas were assumed not to add any pollutant loadings.

The values for the high density land use category were used for the high, medium, and low/medium density residential and other/unknown land use categories in the model.

Table F-5

Dissolved to Total Metals Fractionation Values for Influent Quality

Metal	ASCE/EPA BMP Database (%)	LA County Commercial (%)	LA County Residential (%)	Fraction Used (%)
Copper	54.3%	36.0%	57.0%	46.5%
Lead	45.7%	N/A	N/A	45.7%
Zinc	47.5%	63.0%	56.0%	59.5%

Table F-6

Summarized Retention Pond EMC Data

BMP Type	BMP Name	Parameter	In/Out	Data points (valid)	Arithmetic mean	units	Arithmetic StDev
RP	DeBary Detention with Filtration Pond	Copper, Dissolved (ug/L as Cu)	Inflow	33	7.513	ug/L	1.692
RP	DeBary Detention with Filtration Pond	Copper, Dissolved (ug/L as Cu)	Outflow	47	5.513	ug/L	2.014
RP	Lake Ellyn	Copper, Dissolved (ug/L as Cu)	Inflow	18	10.472	ug/L	5.116
RP	Lake Ellyn	Copper, Dissolved (ug/L as Cu)	Outflow	18	4.553	ug/L	1.357
RP	Wet detention pond, Monroe St.	Copper, Dissolved (ug/L as Cu)	Inflow	24	7.383	ug/L	3.788
RP	Wet detention pond, Monroe St.	Copper, Dissolved (ug/L as Cu)	Outflow	23	4.691	ug/L	1.893
RP	Central Park Wet pond	Copper, Total (ug/L as Cu)	Inflow	9	17.888	ug/L	12.370
RP	Central Park Wet pond	Copper, Total (ug/L as Cu)	Outflow	9	6.095	ug/L	1.561
RP	Cockroach Wet Pond	Copper, Total (ug/L as Cu)	Inflow	49	42.352	ug/L	143.928
RP	Cockroach Wet Pond	Copper, Total (ug/L as Cu)	Outflow	24	8.832	ug/L	12.887
RP	DeBary Detention with Filtration Pond	Copper, Total (ug/L as Cu)	Inflow	33	9.696	ug/L	2.411
RP	DeBary Detention with Filtration Pond	Copper, Total (ug/L as Cu)	Outflow	47	6.920	ug/L	3.588
RP	Heritage Retention Pond	Copper, Total (ug/L as Cu)	Inflow	13	47.057	ug/L	61.438
RP	Heritage Retention Pond	Copper, Total (ug/L as Cu)	Outflow	13	10.711	ug/L	14.306
RP	Lake Ellyn	Copper, Total (ug/L as Cu)	Inflow	18	55.349	ug/L	32.938
RP	Lake Ellyn	Copper, Total (ug/L as Cu)	Outflow	18	6.022	ug/L	1.117
RP	Lake Munson	Copper, Total (ug/L as Cu)	Inflow	3	20.155	ug/L	183.787
RP	Lake Munson	Copper, Total (ug/L as Cu)	Outflow	3	9.781	ug/L	7.803
RP	Pond A	Copper, Total (ug/L as Cu)	Inflow	14	4.033	ug/L	1.924
RP	Pond A	Copper, Total (ug/L as Cu)	Outflow	12	2.719	ug/L	2.877
RP	Shawnee Ridge Retention Pond	Copper, Total (ug/L as Cu)	Inflow	8	13.580	ug/L	17.244
RP	Shawnee Ridge Retention Pond	Copper, Total (ug/L as Cu)	Outflow	7	14.833	ug/L	19.880
RP	South Central Stormwater Facility	Copper, Total (ug/L as Cu)	Inflow	4	5.071	ug/L	5.266
RP	South Central Stormwater Facility	Copper, Total (ug/L as Cu)	Outflow	4	3.854	ug/L	3.221
RP	Tampa Office Pond (2) 1993-94	Copper, Total (ug/L as Cu)	Inflow	19	3.059	ug/L	1.984
RP	Tampa Office Pond (2) 1993-94	Copper, Total (ug/L as Cu)	Outflow	16	3.275	ug/L	2.289
RP	Tampa Office Pond (3) 1994-95	Copper, Total (ug/L as Cu)	Inflow	44	6.435	ug/L	4.632
RP	Tampa Office Pond (3) 1994-95	Copper, Total (ug/L as Cu)	Outflow	43	4.050	ug/L	3.302
RP	Wet detention pond, Monroe St.	Copper, Total (ug/L as Cu)	Inflow	27	53.061	ug/L	9.949
RP	Wet detention pond, Monroe St.	Copper, Total (ug/L as Cu)	Outflow	25	50.000	ug/L	0.000
RP	DeBary Detention with Filtration Pond	Lead, Dissolved (ug/L as Pb)	Inflow	33	1.953	ug/L	2.222
RP	DeBary Detention with Filtration Pond	Lead, Dissolved (ug/L as Pb)	Outflow	47	1.101	ug/L	1.040
RP	Lake Ellyn	Lead, Dissolved (ug/L as Pb)	Inflow	18	9.476	ug/L	15.272
RP	Lake Ellyn	Lead, Dissolved (ug/L as Pb)	Outflow	18	31.081	ug/L	29.448
RP	Silver Star Rd Detention Pond	Lead, Dissolved (ug/L as Pb)	Inflow	13	99.391	ug/L	151.599
RP	Silver Star Rd Detention Pond	Lead, Dissolved (ug/L as Pb)	Outflow	12	9.021	ug/L	1.855
RP	Wet detention pond, Monroe St.	Lead, Dissolved (ug/L as Pb)	Inflow	27	3.473	ug/L	1.055
RP	Wet detention pond, Monroe St.	Lead, Dissolved (ug/L as Pb)	Outflow	24	3.075	ug/L	0.208
RP	Central Park Wet pond	Lead, Total (ug/L as Pb)	Inflow	9	59.331	ug/L	202.764
RP	Central Park Wet pond	Lead, Total (ug/L as Pb)	Outflow	9	5.137	ug/L	5.403
RP	Cockroach Wet Pond	Lead, Total (ug/L as Pb)	Inflow	49	4.851	ug/L	6.807
RP	Cockroach Wet Pond	Lead, Total (ug/L as Pb)	Outflow	24	1.898	ug/L	1.109
RP	DeBary Detention with Filtration Pond	Lead, Total (ug/L as Pb)	Inflow	33	12.246	ug/L	31.657
RP	DeBary Detention with Filtration Pond	Lead, Total (ug/L as Pb)	Outflow	47	1.307	ug/L	1.378
RP	Heritage Retention Pond	Lead, Total (ug/L as Pb)	Inflow	13	18.742	ug/L	18.151
RP	Heritage Retention Pond	Lead, Total (ug/L as Pb)	Outflow	13	8.889	ug/L	4.077
RP	Lake Ellyn	Lead, Total (ug/L as Pb)	Inflow	17	464.029	ug/L	410.695
RP	Lake Ellyn	Lead, Total (ug/L as Pb)	Outflow	17	33.215	ug/L	13.704
RP	Lake McCarrons Sedimentation Basin	Lead, Total (ug/L as Pb)	Inflow	23	114.500	ug/L	104.506
RP	Lake McCarrons Sedimentation Basin	Lead, Total (ug/L as Pb)	Outflow	24	16.781	ug/L	30.961
RP	Lake Munson	Lead, Total (ug/L as Pb)	Inflow	3	183.186	ug/L	1587.931
RP	Lake Munson	Lead, Total (ug/L as Pb)	Outflow	3	8.330	ug/L	8.590
RP	Pittsfield Retention Pond	Lead, Total (ug/L as Pb)	Inflow	6	37.269	ug/L	19.932
RP	Pittsfield Retention Pond	Lead, Total (ug/L as Pb)	Outflow	6	20.591	ug/L	14.114
RP	Pond A	Lead, Total (ug/L as Pb)	Inflow	14	5.292	ug/L	6.046
RP	Pond A	Lead, Total (ug/L as Pb)	Outflow	12	1.421	ug/L	1.196
RP	Shawnee Ridge Retention Pond	Lead, Total (ug/L as Pb)	Inflow	8	16.973	ug/L	4.252
RP	Shawnee Ridge Retention Pond	Lead, Total (ug/L as Pb)	Outflow	7	17.890	ug/L	2.767
RP	Silver Star Rd Detention Pond	Lead, Total (ug/L as Pb)	Inflow	13	99.391	ug/L	151.599
RP	Silver Star Rd Detention Pond	Lead, Total (ug/L as Pb)	Outflow	12	50.411	ug/L	45.380
RP	South Central Stormwater Facility	Lead, Total (ug/L as Pb)	Inflow	4	3.536	ug/L	1.947
RP	South Central Stormwater Facility	Lead, Total (ug/L as Pb)	Outflow	4	2.397	ug/L	2.843
RP	Tampa Office Pond (2) 1993-94	Lead, Total (ug/L as Pb)	Inflow	14	3.284	ug/L	3.207
RP	Tampa Office Pond (2) 1993-94	Lead, Total (ug/L as Pb)	Outflow	12	1.249	ug/L	0.401
RP	Tampa Office Pond (3) 1994-95	Lead, Total (ug/L as Pb)	Inflow	40	5.634	ug/L	5.396
RP	Tampa Office Pond (3) 1994-95	Lead, Total (ug/L as Pb)	Outflow	17	1.347	ug/L	0.523
RP	Wet detention pond, Monroe St.	Lead, Total (ug/L as Pb)	Inflow	27	94.835	ug/L	63.839
RP	Wet detention pond, Monroe St.	Lead, Total (ug/L as Pb)	Outflow	25	69.535	ug/L	55.526
RP	Central Park Wet pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	9	1.064	mg/L	0.549
RP	Central Park Wet pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	12	1.565	mg/L	1.507
RP	Heritage Retention Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	13	1.357	mg/L	1.019
RP	Heritage Retention Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	13	0.982	mg/L	0.184
RP	Lake McCarrons Sedimentation Basin	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	23	3.705	mg/L	2.534
RP	Lake McCarrons Sedimentation Basin	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	24	1.367	mg/L	0.633
RP	Lake Munson	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	3	1.555	mg/L	1.312
RP	Lake Munson	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	3	0.821	mg/L	0.247
RP	Lakeside (LS) Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	8	0.860	mg/L	0.000
RP	Lakeside (LS) Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	5	0.949	mg/L	0.248

Table F-6

Summarized Retention Pond EMC Data

BMP Type	BMP Name	Parameter	In/Out	Data points (valid)	Arithmetic mean	units	Arithmetic StDev
RP	Pittsfield Retention Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	7	0.996	mg/L	1.202
RP	Pittsfield Retention Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	7	0.858	mg/L	1.155
RP	Runaway Bay (RB) Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	8	0.628	mg/L	0.201
RP	Shawnee Ridge Retention Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	8	1.557	mg/L	0.905
RP	Shawnee Ridge Retention Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	7	1.115	mg/L	0.223
RP	South Central Stormwater Facility	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	4	0.557	mg/L	0.346
RP	South Central Stormwater Facility	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	4	0.738	mg/L	0.282
RP	Traver Creek Retention Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	5	0.905	mg/L	0.120
RP	Traver Creek Retention Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	5	0.719	mg/L	0.194
RP	Waterford (WF) Pond	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	8	0.733	mg/L	0.301
RP	Wet detention pond, Monroe St.	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	58	2.302	mg/L	2.125
RP	Wet detention pond, Monroe St.	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	25	1.218	mg/L	0.455
RP	Central Park Wet pond	Oil and Grease (mg/L)	Inflow	7	3.814	mg/L	2.067
RP	Central Park Wet pond	Oil and Grease (mg/L)	Outflow	8	3.204	mg/L	1.150
RP	Central Park Wet pond	Phosphorous, Total (mg/L as P)	Inflow	9	6.944	mg/L	13.285
RP	Central Park Wet pond	Phosphorous, Total (mg/L as P)	Outflow	9	6.625	mg/L	6.286
RP	Cockroach Wet Pond	Phosphorous, Total (mg/L as P)	Inflow	48	1.609	mg/L	2.318
RP	Cockroach Wet Pond	Phosphorous, Total (mg/L as P)	Outflow	24	0.574	mg/L	0.649
RP	DeBary Detention with Filtration Pond	Phosphorous, Total (mg/L as P)	Inflow	33	0.267	mg/L	0.205
RP	DeBary Detention with Filtration Pond	Phosphorous, Total (mg/L as P)	Outflow	47	0.077	mg/L	0.031
RP	Lake Ellyn	Phosphorous, Total (mg/L as P)	Inflow	18	0.560	mg/L	0.301
RP	Lake Ellyn	Phosphorous, Total (mg/L as P)	Outflow	18	0.182	mg/L	0.049
RP	Lake McCarrons Sedimentation Basin	Phosphorous, Total (mg/L as P)	Inflow	23	0.999	mg/L	0.600
RP	Lake McCarrons Sedimentation Basin	Phosphorous, Total (mg/L as P)	Outflow	24	0.227	mg/L	0.164
RP	Lake Munson	Phosphorous, Total (mg/L as P)	Inflow	3	1.068	mg/L	0.885
RP	Lake Munson	Phosphorous, Total (mg/L as P)	Outflow	3	0.236	mg/L	0.041
RP	Lakeside (LS) Pond	Phosphorous, Total (mg/L as P)	Inflow	8	0.140	mg/L	0.000
RP	Lakeside (LS) Pond	Phosphorous, Total (mg/L as P)	Outflow	5	0.140	mg/L	0.130
RP	Pittsfield Retention Pond	Phosphorous, Total (mg/L as P)	Inflow	7	0.192	mg/L	0.212
RP	Pittsfield Retention Pond	Phosphorous, Total (mg/L as P)	Outflow	7	0.179	mg/L	0.315
RP	Pond A	Phosphorous, Total (mg/L as P)	Inflow	14	0.097	mg/L	0.069
RP	Pond A	Phosphorous, Total (mg/L as P)	Outflow	12	0.083	mg/L	0.035
RP	Runaway Bay (RB) Pond	Phosphorous, Total (mg/L as P)	Outflow	8	0.101	mg/L	0.137
RP	Shawnee Ridge Retention Pond	Phosphorous, Total (mg/L as P)	Inflow	8	0.622	mg/L	2.364
RP	Shawnee Ridge Retention Pond	Phosphorous, Total (mg/L as P)	Outflow	7	0.140	mg/L	0.406
RP	Silver Star Rd Detention Pond	Phosphorous, Total (mg/L as P)	Inflow	13	0.170	mg/L	0.119
RP	Silver Star Rd Detention Pond	Phosphorous, Total (mg/L as P)	Outflow	12	0.117	mg/L	0.048
RP	South Central Stormwater Facility	Phosphorous, Total (mg/L as P)	Inflow	4	0.224	mg/L	0.446
RP	South Central Stormwater Facility	Phosphorous, Total (mg/L as P)	Outflow	3	0.117	mg/L	0.079
RP	Tampa Office Pond (1) 1990-91	Phosphorous, Total (mg/L as P)	Inflow	22	0.526	mg/L	0.734
RP	Tampa Office Pond (1) 1990-91	Phosphorous, Total (mg/L as P)	Outflow	22	0.176	mg/L	0.077
RP	Tampa Office Pond (2) 1993-94	Phosphorous, Total (mg/L as P)	Inflow	25	0.542	mg/L	0.799
RP	Tampa Office Pond (2) 1993-94	Phosphorous, Total (mg/L as P)	Outflow	21	0.196	mg/L	0.319
RP	Tampa Office Pond (3) 1994-95	Phosphorous, Total (mg/L as P)	Inflow	44	0.501	mg/L	0.519
RP	Tampa Office Pond (3) 1994-95	Phosphorous, Total (mg/L as P)	Outflow	44	0.058	mg/L	0.041
RP	Traver Creek Retention Pond	Phosphorous, Total (mg/L as P)	Inflow	5	0.095	mg/L	0.030
RP	Traver Creek Retention Pond	Phosphorous, Total (mg/L as P)	Outflow	5	0.057	mg/L	0.022
RP	Waterford (WF) Pond	Phosphorous, Total (mg/L as P)	Outflow	8	0.137	mg/L	0.189
RP	Wet detention pond, Monroe St.	Phosphorous, Total (mg/L as P)	Inflow	30	0.751	mg/L	0.709
RP	Wet detention pond, Monroe St.	Phosphorous, Total (mg/L as P)	Outflow	26	0.228	mg/L	0.053
RP	Central Park Wet pond	Solids, Total Suspended (mg/L)	Inflow	8	87.295	mg/L	152.636
RP	Central Park Wet pond	Solids, Total Suspended (mg/L)	Outflow	10	36.622	mg/L	23.893
RP	DeBary Detention with Filtration Pond	Solids, Total Suspended (mg/L)	Inflow	33	89.482	mg/L	168.497
RP	DeBary Detention with Filtration Pond	Solids, Total Suspended (mg/L)	Outflow	46	0.967	mg/L	1.308
RP	Heritage Retention Pond	Solids, Total Suspended (mg/L)	Inflow	13	106.151	mg/L	278.561
RP	Heritage Retention Pond	Solids, Total Suspended (mg/L)	Outflow	13	16.412	mg/L	10.507
RP	Lake Ellyn	Solids, Total Suspended (mg/L)	Inflow	18	329.540	mg/L	313.141
RP	Lake Ellyn	Solids, Total Suspended (mg/L)	Outflow	18	18.995	mg/L	8.365
RP	Lake McCarrons Sedimentation Basin	Solids, Total Suspended (mg/L)	Inflow	23	554.694	mg/L	844.554
RP	Lake McCarrons Sedimentation Basin	Solids, Total Suspended (mg/L)	Outflow	24	46.374	mg/L	74.016
RP	Lake Munson	Solids, Total Suspended (mg/L)	Inflow	3	423.859	mg/L	532.299
RP	Lake Munson	Solids, Total Suspended (mg/L)	Outflow	3	10.993	mg/L	6.699
RP	Lakeside (LS) Pond	Solids, Total Suspended (mg/L)	Inflow	8	99.139	mg/L	4.972
RP	Lakeside (LS) Pond	Solids, Total Suspended (mg/L)	Outflow	5	11.087	mg/L	6.039
RP	Pittsfield Retention Pond	Solids, Total Suspended (mg/L)	Inflow	7	63.863	mg/L	92.022
RP	Pittsfield Retention Pond	Solids, Total Suspended (mg/L)	Outflow	7	34.599	mg/L	55.436
RP	Pond A	Solids, Total Suspended (mg/L)	Inflow	14	22.666	mg/L	16.572
RP	Pond A	Solids, Total Suspended (mg/L)	Outflow	12	9.437	mg/L	4.881
RP	Runaway Bay (RB) Pond	Solids, Total Suspended (mg/L)	Outflow	8	22.211	mg/L	15.526
RP	Shawnee Ridge Retention Pond	Solids, Total Suspended (mg/L)	Inflow	8	139.965	mg/L	202.119
RP	Shawnee Ridge Retention Pond	Solids, Total Suspended (mg/L)	Outflow	7	8.674	mg/L	3.539
RP	Silver Star Rd Detention Pond	Solids, Total Suspended (mg/L)	Inflow	13	33.345	mg/L	51.336
RP	Silver Star Rd Detention Pond	Solids, Total Suspended (mg/L)	Outflow	12	168.435	mg/L	48.547
RP	South Central Stormwater Facility	Solids, Total Suspended (mg/L)	Inflow	4	35.585	mg/L	23.933
RP	South Central Stormwater Facility	Solids, Total Suspended (mg/L)	Outflow	4	13.551	mg/L	2.461
RP	Tampa Office Pond (1) 1990-91	Solids, Total Suspended (mg/L)	Inflow	22	28.028	mg/L	24.666
RP	Tampa Office Pond (1) 1990-91	Solids, Total Suspended (mg/L)	Outflow	22	19.582	mg/L	42.810
RP	Tampa Office Pond (2) 1993-94	Solids, Total Suspended (mg/L)	Inflow	25	46.122	mg/l	159.084

Table F-6

Summarized Retention Pond EMC Data

BMP Type	BMP Name	Parameter	In/Out	Data points (valid)	Arithmetic mean	units	Arithmetic StDev
RP	Tampa Office Pond (2) 1993-94	Solids, Total Suspended (mg/L)	Outflow	21	13.225	mg/L	12.102
RP	Tampa Office Pond (3) 1994-95	Solids, Total Suspended (mg/L)	Inflow	46	166.472	mg/L	402.793
RP	Tampa Office Pond (3) 1994-95	Solids, Total Suspended (mg/L)	Outflow	46	6.582	mg/L	8.312
RP	Traver Creek Retention Pond	Solids, Total Suspended (mg/L)	Inflow	5	33.996	mg/L	26.671
RP	Traver Creek Retention Pond	Solids, Total Suspended (mg/L)	Outflow	5	32.791	mg/L	21.433
RP	Waterford (WF) Pond	Solids, Total Suspended (mg/L)	Outflow	11	48.866	mg/L	60.899
RP	Wet detention pond, Monroe St.	Solids, Total Suspended (mg/L)	Inflow	29	320.362	mg/L	491.167
RP	Wet detention pond, Monroe St.	Solids, Total Suspended (mg/L)	Outflow	24	33.904	mg/L	31.816
RP	DeBary Detention with Filtration Pond	Zinc, Dissolved (ug/L as Zn)	Inflow	33	14.066	ug/L	11.767
RP	DeBary Detention with Filtration Pond	Zinc, Dissolved (ug/L as Zn)	Outflow	47	1.924	ug/L	1.145
RP	Lake Ellyn	Zinc, Dissolved (ug/L as Zn)	Inflow	18	47.358	ug/L	33.079
RP	Lake Ellyn	Zinc, Dissolved (ug/L as Zn)	Outflow	18	8.936	ug/L	3.726
RP	Silver Star Rd Detention Pond	Zinc, Dissolved (ug/L as Zn)	Inflow	12	64.020	ug/L	57.949
RP	Silver Star Rd Detention Pond	Zinc, Dissolved (ug/L as Zn)	Outflow	12	60.392	ug/L	70.848
RP	Central Park Wet pond	Zinc, Total (ug/L as Zn)	Inflow	9	157.532	ug/L	156.593
RP	Central Park Wet pond	Zinc, Total (ug/L as Zn)	Outflow	9	37.137	ug/L	22.491
RP	Cockroach Wet Pond	Zinc, Total (ug/L as Zn)	Inflow	49	210.801	ug/L	826.529
RP	Cockroach Wet Pond	Zinc, Total (ug/L as Zn)	Outflow	24	109.634	ug/L	274.220
RP	DeBary Detention with Filtration Pond	Zinc, Total (ug/L as Zn)	Inflow	33	29.049	ug/L	19.033
RP	DeBary Detention with Filtration Pond	Zinc, Total (ug/L as Zn)	Outflow	47	2.077	ug/L	1.140
RP	Heritage Retention Pond	Zinc, Total (ug/L as Zn)	Inflow	13	81.352	ug/L	62.305
RP	Heritage Retention Pond	Zinc, Total (ug/L as Zn)	Outflow	13	19.337	ug/L	28.717
RP	Lake Ellyn	Zinc, Total (ug/L as Zn)	Inflow	18	279.425	ug/L	197.468
RP	Lake Ellyn	Zinc, Total (ug/L as Zn)	Outflow	18	28.628	ug/L	11.290
RP	Lakeside (LS) Pond	Zinc, Total (ug/L as Zn)	Inflow	8	60.752	ug/L	1.276
RP	Lakeside (LS) Pond	Zinc, Total (ug/L as Zn)	Outflow	5	19.024	ug/L	7.200
RP	Pond A	Zinc, Total (ug/L as Zn)	Inflow	13	56.032	ug/L	23.432
RP	Pond A	Zinc, Total (ug/L as Zn)	Outflow	11	31.972	ug/L	6.778
RP	Runaway Bay (RB) Pond	Zinc, Total (ug/L as Zn)	Outflow	8	35.762	ug/L	46.993
RP	Shawnee Ridge Retention Pond	Zinc, Total (ug/L as Zn)	Inflow	8	83.308	ug/L	102.683
RP	Shawnee Ridge Retention Pond	Zinc, Total (ug/L as Zn)	Outflow	7	21.275	ug/L	7.892
RP	Silver Star Rd Detention Pond	Zinc, Total (ug/L as Zn)	Inflow	13	95.310	ug/L	85.447
RP	Silver Star Rd Detention Pond	Zinc, Total (ug/L as Zn)	Outflow	12	102.840	ug/L	82.193
RP	South Central Stormwater Facility	Zinc, Total (ug/L as Zn)	Inflow	4	42.872	ug/L	113.230
RP	South Central Stormwater Facility	Zinc, Total (ug/L as Zn)	Outflow	4	11.470	ug/L	7.695
RP	Tampa Office Pond (1) 1990-91	Zinc, Total (ug/L as Zn)	Inflow	22	52.391	ug/L	25.401
RP	Tampa Office Pond (1) 1990-91	Zinc, Total (ug/L as Zn)	Outflow	22	33.070	ug/L	28.164
RP	Tampa Office Pond (2) 1993-94	Zinc, Total (ug/L as Zn)	Inflow	25	26.596	ug/L	19.328
RP	Tampa Office Pond (2) 1993-94	Zinc, Total (ug/L as Zn)	Outflow	21	22.198	ug/L	16.621
RP	Tampa Office Pond (3) 1994-95	Zinc, Total (ug/L as Zn)	Inflow	46	69.678	ug/L	68.250
RP	Tampa Office Pond (3) 1994-95	Zinc, Total (ug/L as Zn)	Outflow	46	14.106	ug/L	8.336
RP	Waterford (WF) Pond	Zinc, Total (ug/L as Zn)	Outflow	8	38.068	ug/L	36.132

Table F-7

Summarized Wetland Channel EMC Data

BMP Type	BMP Name	Parameter	In/Out	Data points (valid)	Arithmetic mean	units	Arithmetic StDev
WC	Silver Star Rd Wetland	Lead, Dissolved (ug/L as Pb)	Inflow	12	9.021	ug/L	1.855
WC	Silver Star Rd Wetland	Lead, Dissolved (ug/L as Pb)	Outflow	6	4.393	ug/L	1.800
WC	Tanners Lake Wetland	Lead, Total (ug/L as Pb)	Inflow	17	33.136	ug/L	48.659
WC	Tanners Lake Wetland	Lead, Total (ug/L as Pb)	Outflow	3	6.795	ug/L	4.970
WC	Silver Star Rd Wetland	Lead, Total (ug/L as Pb)	Inflow	12	50.411	ug/L	45.380
WC	Silver Star Rd Wetland	Lead, Total (ug/L as Pb)	Outflow	6	15.787	ug/L	13.392
WC	Lake McCarrons Wetland	Lead, Total (ug/L as Pb)	Outflow	24	7.926	ug/L	12.756
WC	Lake McCarrons Wetland	Lead, Total (ug/L as Pb)	Inflow	23	30.538	ug/L	44.862
WC	Tanners Lake Wetland	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	17	1.726	mg/L	0.631
WC	Tanners Lake Wetland	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	4	1.489	mg/L	0.713
WC	Lake McCarrons Wetland	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	23	1.681	mg/L	0.771
WC	Lake McCarrons Wetland	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	24	1.290	mg/L	0.585
WC	Tanners Lake Wetland	Phosphorous, Total (mg/L as P)	Inflow	17	0.474	mg/L	0.185
WC	Tanners Lake Wetland	Phosphorous, Total (mg/L as P)	Outflow	4	0.345	mg/L	0.096
WC	Silver Star Rd Wetland	Phosphorous, Total (mg/L as P)	Inflow	12	0.117	mg/L	0.048
WC	Silver Star Rd Wetland	Phosphorous, Total (mg/L as P)	Outflow	6	0.094	mg/L	0.029
WC	Lake McCarrons Wetland	Phosphorous, Total (mg/L as P)	Inflow	23	0.333	mg/L	0.196
WC	Lake McCarrons Wetland	Phosphorous, Total (mg/L as P)	Outflow	24	0.226	mg/l	0.141
WC	Tanners Lake Wetland	Solids, Total Suspended (mg/L)	Inflow	17	165.842	mg/L	213.775
WC	Tanners Lake Wetland	Solids, Total Suspended (mg/L)	Outflow	3	18.612	mg/L	5.521
WC	Silver Star Rd Wetland	Solids, Total Suspended (mg/L)	Inflow	12	166.435	mg/L	48.547
WC	Silver Star Rd Wetland	Solids, Total Suspended (mg/L)	Outflow	6	133.793	mg/L	53.513
WC	Lake McCarrons Wetland	Solids, Total Suspended (mg/L)	Outflow	24	24.177	mg/L	38.441
WC	Lake McCarrons Wetland	Solids, Total Suspended (mg/L)	Inflow	23	121.527	mg/L	172.078
WC	Silver Star Rd Wetland	Zinc, Dissolved (ug/L as Zn)	Outflow	6	11.482	ug/L	8.890
WC	Silver Star Rd Wetland	Zinc, Dissolved (ug/L as Zn)	Inflow	12	60.392	ug/l	70.848
WC	Silver Star Rd Wetland	Zinc, Total (ug/L as Zn)	Inflow	12	102.840	ug/L	82.193
WC	Silver Star Rd Wetland	Zinc, Total (ug/L as Zn)	Outflow	6	33.502	ug/L	16.853

Table F-8

Summarized Biofilter EMC Data

BMP Type	BMP Name	Parameter	In/Out	Data points (valid)	Arithmetic mean	units	Arithmetic StDev
BI	Carlsbad strip	Copper, Dissolved (ug/L as Cu)	Inflow	12	44.379	ug/L	30.686
BI	Carlsbad strip	Copper, Dissolved (ug/L as Cu)	Outflow	9	5.926	ug/L	4.104
BI	Altadena Strip	Copper, Dissolved (ug/L as Cu)	Outflow	12	3.894	ug/L	3.456
BI	Altadena Strip	Copper, Dissolved (ug/L as Cu)	Inflow	11	4.396	ug/L	3.873
BS	Melrose	Copper, Dissolved (ug/L as Cu)	Inflow	10	20.077	ug/L	13.561
BS	Melrose	Copper, Dissolved (ug/L as Cu)	Outflow	5	5.349	ug/L	1.686
BS	Bioswale Non-Native West	Copper, Dissolved (ug/L as Cu)	Inflow	6	11.506	ug/L	5.288
BS	Bioswale Non-Native West	Copper, Dissolved (ug/L as Cu)	Outflow	6	10.275	ug/L	5.845
BS	Dayton Biofilter - Grass Swale	Copper, Dissolved (ug/L as Cu)	Inflow	8	4.810	ug/L	2.396
BS	Dayton Biofilter - Grass Swale	Copper, Dissolved (ug/L as Cu)	Outflow	8	3.628	ug/L	1.271
BS	Cerritos	Copper, Dissolved (ug/L as Cu)	Inflow	10	34.329	ug/L	39.246
BS	Del Amo	Copper, Dissolved (ug/L as Cu)	Inflow	8	27.337	ug/L	22.277
BS	Del Amo	Copper, Dissolved (ug/L as Cu)	Outflow	6	16.923	ug/L	8.854
BS	5/605 swale	Copper, Dissolved (ug/L as Cu)	Outflow	4	11.664	ug/L	17.605
BS	5/605 swale	Copper, Dissolved (ug/L as Cu)	Inflow	4	12.980	ug/L	11.680
BS	Bioswale Native East	Copper, Dissolved (ug/L as Cu)	Inflow	6	11.693	ug/L	5.461
BS	Bioswale Native East	Copper, Dissolved (ug/L as Cu)	Outflow	6	9.901	ug/L	5.277
BI	Carlsbad strip	Copper, Total (ug/L as Cu)	Inflow	12	83.078	ug/L	30.744
BI	Carlsbad strip	Copper, Total (ug/L as Cu)	Outflow	9	9.422	ug/L	4.474
BI	Altadena Strip	Copper, Total (ug/L as Cu)	Inflow	11	9.283	ug/L	10.302
BI	Altadena Strip	Copper, Total (ug/L as Cu)	Outflow	12	4.838	ug/L	4.545
BS	Melrose	Copper, Total (ug/L as Cu)	Outflow	5	11.050	ug/L	4.155
BS	Melrose	Copper, Total (ug/L as Cu)	Inflow	10	36.024	ug/L	12.773
BS	Swale - F8	Copper, Total (ug/L as Cu)	Outflow	23	10.012	ug/L	7.685
BS	Swale - F8	Copper, Total (ug/L as Cu)	Inflow	29	10.202	ug/L	9.260
BS	Swale - F6	Copper, Total (ug/L as Cu)	Outflow	20	4.180	ug/L	4.625
BS	Swale - F6	Copper, Total (ug/L as Cu)	Inflow	29	10.202	ug/L	9.260
BS	Bioswale Non-Native West	Copper, Total (ug/L as Cu)	Outflow	6	21.246	ug/L	8.367
BS	Bioswale Non-Native West	Copper, Total (ug/L as Cu)	Inflow	6	36.827	ug/L	14.281
BS	Dayton Biofilter - Grass Swale	Copper, Total (ug/L as Cu)	Outflow	8	5.655	ug/L	3.220
BS	Dayton Biofilter - Grass Swale	Copper, Total (ug/L as Cu)	Inflow	8	10.768	ug/L	8.849
BS	Cerritos	Copper, Total (ug/L as Cu)	Inflow	10	78.159	ug/L	107.232
BS	Del Amo	Copper, Total (ug/L as Cu)	Inflow	8	65.792	ug/L	68.344
BS	Del Amo	Copper, Total (ug/L as Cu)	Outflow	6	22.728	ug/L	13.295
BS	5/605 swale	Copper, Total (ug/L as Cu)	Inflow	4	21.803	ug/L	21.523
BS	5/605 swale	Copper, Total (ug/L as Cu)	Outflow	4	15.768	ug/L	26.323
BS	Swale - F4	Copper, Total (ug/L as Cu)	Outflow	26	4.485	ug/L	4.905
BS	Swale - F4	Copper, Total (ug/L as Cu)	Inflow	29	10.202	ug/L	9.260
BS	Bioswale Native East	Copper, Total (ug/L as Cu)	Outflow	6	19.754	ug/L	7.480
BS	Bioswale Native East	Copper, Total (ug/L as Cu)	Inflow	5	39.478	ug/L	15.158
BI	Carlsbad strip	Lead, Dissolved (ug/L as Pb)	Inflow	12	2.947	ug/L	2.643
BI	Carlsbad strip	Lead, Dissolved (ug/L as Pb)	Outflow	9	1.362	ug/L	0.642
BI	Altadena Strip	Lead, Dissolved (ug/L as Pb)	Outflow	12	1.338	ug/L	0.493
BI	Altadena Strip	Lead, Dissolved (ug/L as Pb)	Inflow	11	2.121	ug/L	1.974
BS	Melrose	Lead, Dissolved (ug/L as Pb)	Outflow	5	1.290	ug/L	0.386
BS	Melrose	Lead, Dissolved (ug/L as Pb)	Inflow	10	1.759	ug/L	0.815
BS	Bioswale Non-Native West	Lead, Dissolved (ug/L as Pb)	Outflow	6	0.620	ug/L	0.339
BS	Bioswale Non-Native West	Lead, Dissolved (ug/L as Pb)	Inflow	6	0.684	ug/L	0.245
BS	Dayton Biofilter - Grass Swale	Lead, Dissolved (ug/L as Pb)	Inflow	8	3.305	ug/L	4.232
BS	Dayton Biofilter - Grass Swale	Lead, Dissolved (ug/L as Pb)	Outflow	8	2.580	ug/L	2.585
BS	Cerritos	Lead, Dissolved (ug/L as Pb)	Inflow	10	19.289	ug/L	24.411
BS	Del Amo	Lead, Dissolved (ug/L as Pb)	Inflow	8	86.136	ug/L	198.469
BS	Del Amo	Lead, Dissolved (ug/L as Pb)	Outflow	6	24.830	ug/L	15.934
BS	5/605 swale	Lead, Dissolved (ug/L as Pb)	Inflow	4	13.857	ug/L	11.308
BS	5/605 swale	Lead, Dissolved (ug/L as Pb)	Outflow	4	10.658	ug/L	14.399
BS	Bioswale Native East	Lead, Dissolved (ug/L as Pb)	Outflow	6	0.586	ug/L	0.355
BS	Bioswale Native East	Lead, Dissolved (ug/L as Pb)	Inflow	6	0.684	ug/L	0.245
BI	Walnut Creek Veg. Buffer Strip	Lead, Total (ug/L as Pb)	Outflow	4	74.368	ug/l	135.385
BI	Carlsbad strip	Lead, Total (ug/L as Pb)	Outflow	9	6.954	ug/L	6.139
BI	Carlsbad strip	Lead, Total (ug/L as Pb)	Inflow	12	53.724	ug/L	37.159
BI	Altadena Strip	Lead, Total (ug/L as Pb)	Outflow	12	3.936	ug/L	3.458
BI	Altadena Strip	Lead, Total (ug/L as Pb)	Inflow	11	13.698	ug/L	19.131
BS	Melrose	Lead, Total (ug/L as Pb)	Inflow	10	10.444	ug/L	3.586
BS	Melrose	Lead, Total (ug/L as Pb)	Outflow	5	4.538	ug/L	2.822
BS	Swale - F8	Lead, Total (ug/L as Pb)	Outflow	22	3.583	ug/L	2.359
BS	Swale - F8	Lead, Total (ug/L as Pb)	Inflow	30	4.752	ug/L	4.035
BS	Swale - F6	Lead, Total (ug/L as Pb)	Inflow	30	4.752	ug/L	4.035
BS	Swale - F6	Lead, Total (ug/L as Pb)	Outflow	20	2.082	ug/L	0.883
BS	Alta Vista Planned Development Detentic	Lead, Total (ug/L as Pb)	Outflow	19	2.811	ug/L	4.040
BS	Alta Vista Planned Development Detentic	Lead, Total (ug/L as Pb)	Inflow	19	3.718	ug/L	8.130
BS	Bioswale Non-Native West	Lead, Total (ug/L as Pb)	Inflow	6	27.929	ug/L	13.722
BS	Bioswale Non-Native West	Lead, Total (ug/L as Pb)	Outflow	6	11.641	ug/L	3.791
BS	Dayton Biofilter - Grass Swale	Lead, Total (ug/L as Pb)	Inflow	8	35.168	ug/l	53.301
BS	Dayton Biofilter - Grass Swale	Lead, Total (ug/L as Pb)	Outflow	8	10.623	ug/L	11.722
BS	Cerritos	Lead, Total (ug/L as Pb)	Inflow	10	139.314	ug/L	231.164

Table F-8

Summarized Biofilter EMC Data

BMP Type	BMP Name	Parameter	In/Out	Data points (valid)	Arithmetic mean	units	Arithmetic StDev
BS	Del Amo	Lead, Total (ug/L as Pb)	Inflow	8	452.447	ug/L	791.901
BS	Del Amo	Lead, Total (ug/L as Pb)	Outflow	6	81.893	ug/l	63.741
BS	5/605 swale	Lead, Total (ug/L as Pb)	Outflow	4	28.292	ug/L	61.174
BS	5/605 swale	Lead, Total (ug/L as Pb)	Inflow	4	45.165	ug/L	55.981
BS	Swale - F4	Lead, Total (ug/L as Pb)	Outflow	26	1.987	ug/L	0.715
BS	Swale - F4	Lead, Total (ug/L as Pb)	Inflow	30	4.752	ug/L	4.035
BS	Bioswale Native East	Lead, Total (ug/L as Pb)	Outflow	6	10.603	ug/L	3.409
BS	Bioswale Native East	Lead, Total (ug/L as Pb)	Inflow	6	27.929	ug/L	13.722
BI	Walnut Creek Veg. Buffer Strip	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	4	1.562	mg/L	1.364
BI	Carlsbad strip	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	9	1.544	mg/L	0.891
BI	Carlsbad strip	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	12	2.937	mg/L	1.836
BI	Altadena Strip	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	12	1.884	mg/L	2.101
BI	Altadena Strip	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	11	1.680	mg/L	2.163
BS	Melrose	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	10	3.378	mg/L	2.229
BS	Melrose	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	5	1.640	mg/L	0.536
BS	Bioswale Non-Native West	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	6	1.504	mg/L	0.859
BS	Bioswale Non-Native West	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	6	2.106	mg/L	1.268
BS	Cerritos	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	10	4.427	mg/L	8.086
BS	Del Amo	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	6	2.820	mg/L	1.834
BS	Del Amo	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	8	3.430	mg/L	2.475
BS	5/605 swale	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	4	2.267	mg/L	5.268
BS	5/605 swale	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	4	1.884	mg/L	3.797
BS	Bioswale Native East	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	6	1.430	mg/L	0.794
BS	Bioswale Native East	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	6	2.106	mg/L	1.266
BS	Bioretention Area	Oil and Grease (mg/L)	Inflow	5	20.440	mg/L	32.519
BS	Bioretention Area	Oil and Grease (mg/L)	Outflow	5	5.011	mg/L	0.724
BS	Dayton Biofilter - Grass Swale	Oil and Grease (mg/L)	Inflow	5	0.247	mg/L	0.234
BS	Dayton Biofilter - Grass Swale	Oil and Grease (mg/L)	Outflow	5	0.401	mg/L	0.496
BI	Walnut Creek Veg. Buffer Strip	Phosphorous, Total (mg/L as P)	Outflow	9	0.154	mg/L	0.103
BI	US 183 at MoPac Grass Filter Strip	Phosphorous, Total (mg/L as P)	Outflow	3	0.514	mg/L	0.632
BI	Carlsbad strip	Phosphorous, Total (mg/L as P)	Outflow	9	1.035	mg/L	1.682
BI	Carlsbad strip	Phosphorous, Total (mg/L as P)	Inflow	12	0.522	mg/L	0.380
BI	Altadena Strip	Phosphorous, Total (mg/L as P)	Inflow	11	0.127	mg/L	0.247
BI	Altadena Strip	Phosphorous, Total (mg/L as P)	Outflow	12	0.446	mg/L	0.399
BS	Bioretention Area	Phosphorous, Total (mg/L as P)	Outflow	6	0.359	mg/L	0.383
BS	Bioretention Area	Phosphorous, Total (mg/L as P)	Inflow	20	0.286	mg/L	0.197
BS	Melrose	Phosphorous, Total (mg/L as P)	Inflow	9	0.180	mg/L	0.087
BS	Melrose	Phosphorous, Total (mg/L as P)	Outflow	4	0.410	mg/L	0.097
BS	Swale - F8	Phosphorous, Total (mg/L as P)	Outflow	23	0.278	mg/L	0.349
BS	Swale - F8	Phosphorous, Total (mg/L as P)	Inflow	30	0.100	mg/L	0.127
BS	Swale - F6	Phosphorous, Total (mg/L as P)	Outflow	20	0.185	mg/L	0.192
BS	Swale - F6	Phosphorous, Total (mg/L as P)	Inflow	30	0.100	mg/L	0.127
BS	Alta Vista Planned Development Detentic	Phosphorous, Total (mg/L as P)	Outflow	19	0.839	mg/L	0.292
BS	Alta Vista Planned Development Detentic	Phosphorous, Total (mg/L as P)	Inflow	19	0.452	mg/L	0.225
BS	Bioswale Non-Native West	Phosphorous, Total (mg/L as P)	Outflow	6	0.308	mg/l	0.129
BS	Bioswale Non-Native West	Phosphorous, Total (mg/L as P)	Inflow	6	0.443	mg/L	0.491
BS	Dayton Biofilter - Grass Swale	Phosphorous, Total (mg/L as P)	Outflow	8	0.206	mg/L	0.165
BS	Dayton Biofilter - Grass Swale	Phosphorous, Total (mg/L as P)	Inflow	8	0.194	mg/L	0.186
BS	Cerritos	Phosphorous, Total (mg/L as P)	Inflow	10	0.340	mg/L	0.328
BS	Del Amo	Phosphorous, Total (mg/L as P)	Outflow	6	0.700	mg/L	0.562
BS	Del Amo	Phosphorous, Total (mg/L as P)	Inflow	8	0.239	mg/L	0.189
BS	5/605 swale	Phosphorous, Total (mg/L as P)	Inflow	4	0.088	mg/L	0.017
BS	5/605 swale	Phosphorous, Total (mg/L as P)	Outflow	4	0.234	mg/L	0.060
BS	Swale - F4	Phosphorous, Total (mg/L as P)	Inflow	30	0.100	mg/L	0.127
BS	Swale - F4	Phosphorous, Total (mg/L as P)	Outflow	24	0.223	mg/L	0.227
BS	Bioswale Native East	Phosphorous, Total (mg/L as P)	Outflow	6	0.321	mg/L	0.131
BS	Bioswale Native East	Phosphorous, Total (mg/L as P)	Inflow	6	0.443	mg/L	0.491
BI	Walnut Creek Veg. Buffer Strip	Solids, Total Suspended (mg/L)	Outflow	10	47.625	mg/L	42.135
BI	US 183 at MoPac Grass Filter Strip	Solids, Total Suspended (mg/L)	Outflow	3	61.041	mg/L	142.038
BS	Alta Vista Planned Development Detentic	Solids, Total Suspended (mg/L)	Outflow	19	21.636	mg/L	18.288
BS	Alta Vista Planned Development Detentic	Solids, Total Suspended (mg/L)	Inflow	19	27.194	mg/L	21.253
BS	Dayton Biofilter - Grass Swale	Solids, Total Suspended (mg/L)	Inflow	8	42.121	mg/L	55.526
BS	Dayton Biofilter - Grass Swale	Solids, Total Suspended (mg/L)	Outflow	8	14.001	mg/L	12.340
BI	Carlsbad strip	Zinc, Dissolved (ug/L as Zn)	Outflow	9	40.184	ug/L	21.773
BI	Carlsbad strip	Zinc, Dissolved (ug/L as Zn)	Inflow	12	179.492	ug/L	145.222
BI	Altadena Strip	Zinc, Dissolved (ug/L as Zn)	Inflow	11	48.080	ug/L	52.076
BI	Altadena Strip	Zinc, Dissolved (ug/L as Zn)	Outflow	12	29.217	ug/L	33.292
BS	Melrose	Zinc, Dissolved (ug/L as Zn)	Outflow	5	24.887	ug/L	4.834
BS	Melrose	Zinc, Dissolved (ug/L as Zn)	Inflow	10	273.303	ug/L	210.085
BS	Bioswale Non-Native West	Zinc, Dissolved (ug/L as Zn)	Outflow	6	28.909	ug/L	7.690
BS	Bioswale Non-Native West	Zinc, Dissolved (ug/L as Zn)	Inflow	6	42.770	ug/L	12.749
BS	Dayton Biofilter - Grass Swale	Zinc, Dissolved (ug/L as Zn)	Outflow	8	34.964	ug/l	111.212
BS	Dayton Biofilter - Grass Swale	Zinc, Dissolved (ug/L as Zn)	Inflow	8	64.626	ug/L	278.068
BS	Cerritos	Zinc, Dissolved (ug/L as Zn)	Inflow	10	177.037	ug/L	189.724
BS	Del Amo	Zinc, Dissolved (ug/L as Zn)	Outflow	6	64.060	ug/L	50.325

Table F-8

Summarized Biofilter EMC Data

BMP Type	BMP Name	Parameter	In/Out	Data points (valid)	Arithmetic mean	units	Arithmetic StDev
BS	Del Amo	Zinc, Dissolved (ug/L as Zn)	Inflow	8	135.615	ug/L	159.745
BS	5/605 swale	Zinc, Dissolved (ug/L as Zn)	Inflow	4	70.256	ug/L	45.146
BS	5/605 swale	Zinc, Dissolved (ug/L as Zn)	Outflow	4	35.237	ug/L	41.760
BS	Bioswale Native East	Zinc, Dissolved (ug/L as Zn)	Inflow	6	42.770	ug/L	12.749
BS	Bioswale Native East	Zinc, Dissolved (ug/L as Zn)	Outflow	6	25.679	ug/L	11.245
BI	Walnut Creek Veg. Buffer Strip	Zinc, Total (ug/L as Zn)	Outflow	8	32.476	ug/L	28.146
BI	US 183 at MoPac Grass Filter Strip	Zinc, Total (ug/L as Zn)	Outflow	3	25.325	ug/L	46.445
BI	Carlsbad strip	Zinc, Total (ug/L as Zn)	Outflow	9	67.538	ug/L	34.285
BI	Carlsbad strip	Zinc, Total (ug/L as Zn)	Inflow	12	373.478	ug/L	196.103
BI	Altadena Strip	Zinc, Total (ug/L as Zn)	Inflow	11	86.594	ug/l	85.744
BI	Altadena Strip	Zinc, Total (ug/L as Zn)	Outflow	12	36.268	ug/L	38.054
BS	Melrose	Zinc, Total (ug/L as Zn)	Inflow	10	371.725	ug/L	173.159
BS	Melrose	Zinc, Total (ug/L as Zn)	Outflow	5	51.782	ug/L	25.589
BS	Swale - F8	Zinc, Total (ug/L as Zn)	Outflow	21	42.887	ug/L	22.794
BS	Swale - F8	Zinc, Total (ug/L as Zn)	Inflow	31	46.803	ug/L	27.404
BS	Swale - F6	Zinc, Total (ug/L as Zn)	Outflow	20	29.533	ug/L	4.296
BS	Swale - F6	Zinc, Total (ug/L as Zn)	Inflow	31	46.803	ug/L	27.404
BS	Alta Vista Planned Development Detentic	Zinc, Total (ug/L as Zn)	Inflow	19	18.924	ug/L	7.739
BS	Alta Vista Planned Development Detentic	Zinc, Total (ug/L as Zn)	Outflow	19	16.869	ug/L	9.855
BS	Bioswale Non-Native West	Zinc, Total (ug/L as Zn)	Outflow	6	79.335	ug/L	24.526
BS	Bioswale Non-Native West	Zinc, Total (ug/L as Zn)	Inflow	6	192.728	ug/L	83.902
BS	Dayton Biofilter - Grass Swale	Zinc, Total (ug/L as Zn)	Outflow	8	31.171	ug/L	15.397
BS	Dayton Biofilter - Grass Swale	Zinc, Total (ug/L as Zn)	Inflow	8	57.393	ug/L	51.254
BS	Cerritos	Zinc, Total (ug/L as Zn)	Inflow	10	489.289	ug/L	704.432
BS	Del Amo	Zinc, Total (ug/L as Zn)	Inflow	8	359.737	ug/L	444.103
BS	Del Amo	Zinc, Total (ug/L as Zn)	Outflow	6	92.295	ug/L	76.134
BS	5/605 swale	Zinc, Total (ug/L as Zn)	Inflow	4	215.215	ug/l	243.410
BS	5/605 swale	Zinc, Total (ug/L as Zn)	Outflow	4	53.254	ug/L	83.016
BS	Swale - F4	Zinc, Total (ug/L as Zn)	Outflow	26	30.487	ug/L	14.640
BS	Swale - F4	Zinc, Total (ug/L as Zn)	Inflow	31	46.803	ug/L	27.404
BS	Bioswale Native East	Zinc, Total (ug/L as Zn)	Outflow	6	69.501	ug/L	23.937
BS	Bioswale Native East	Zinc, Total (ug/L as Zn)	Inflow	6	192.728	ug/L	83.902

Table F-9

Summarized Hydrodynamic Separator EMC Data

BMP Type	BMP Name	Parameter	In/Out	Data points (valid)	Arithmetic mean	units	Arithmetic StDev
HD	Orcas	Copper, Dissolved (ug/L as Cu)	Outflow	4	9.691	ug/L	3.208
HD	Orcas	Copper, Dissolved (ug/L as Cu)	Inflow	4	8.729	ug/L	1.798
HD	MCTT Catchbasin	Copper, Dissolved (ug/L as Cu)	Inflow	13	16.682	ug/L	8.804
HD	MCTT Catchbasin	Copper, Dissolved (ug/L as Cu)	Outflow	13	26.802	ug/L	19.138
HD	Filmore CDS	Copper, Dissolved (ug/L as Cu)	Inflow	7	98.799	ug/L	547.787
HD	Filmore CDS	Copper, Dissolved (ug/L as Cu)	Outflow	7	7.689	ug/L	2.243
HD	Addison-Wesley Incterceptor	Copper, Dissolved (ug/L as Cu)	Inflow	6	38.691	ug/L	9.065
HD	Addison-Wesley Incterceptor	Copper, Dissolved (ug/L as Cu)	Outflow	6	36.142	ug/L	13.614
HD	MCTT Milwaukee	Copper, Dissolved (ug/L as Cu)	Inflow	15	6.017	ug/L	4.189
HD	MCTT Milwaukee	Copper, Dissolved (ug/L as Cu)	Outflow	15	1.751	ug/L	1.137
HD	Sacramento Stormvault	Copper, Dissolved (ug/L as Cu)	Inflow	10	22.287	ug/L	22.167
HD	Sacramento Stormvault	Copper, Dissolved (ug/L as Cu)	Outflow	10	10.201	ug/L	0.589
HD	Urban Storm Treatment Unit In Madison, Wisconsin	Copper, Dissolved (ug/L as Cu)	Outflow	13	5.911	ug/L	5.829
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Copper, Dissolved (ug/L as Cu)	Inflow	13	6.159	ug/L	8.062
HD	Orcas	Copper, Total (ug/L as Cu)	Inflow	4	21.427	ug/L	10.171
HD	Orcas	Copper, Total (ug/L as Cu)	Outflow	4	14.132	ug/L	3.803
HD	MCTT Minocqua	Copper, Total (ug/L as Cu)	Outflow	7	18.310	ug/L	15.116
HD	MCTT Minocqua	Copper, Total (ug/L as Cu)	Inflow	7	34.752	ug/L	20.321
HD	MCTT Catchbasin	Copper, Total (ug/L as Cu)	Outflow	13	24.730	ug/L	12.832
HD	MCTT Catchbasin	Copper, Total (ug/L as Cu)	Inflow	13	50.089	ug/L	128.345
HD	Filmore CDS	Copper, Total (ug/L as Cu)	Inflow	7	20.726	ug/L	14.542
HD	Filmore CDS	Copper, Total (ug/L as Cu)	Outflow	7	15.513	ug/L	5.566
HD	Addison-Wesley Incterceptor	Copper, Total (ug/L as Cu)	Outflow	6	6.348	ug/L	1.475
HD	Addison-Wesley Incterceptor	Copper, Total (ug/L as Cu)	Inflow	6	12.634	ug/L	7.943
HD	Stormceptor STC 3600	Copper, Total (ug/L as Cu)	Inflow	5	14.414	ug/L	5.170
HD	Stormceptor STC 3600	Copper, Total (ug/L as Cu)	Outflow	4	11.779	ug/L	7.597
HD	MCTT Milwaukee	Copper, Total (ug/L as Cu)	Outflow	15	3.389	ug/L	1.411
HD	MCTT Milwaukee	Copper, Total (ug/L as Cu)	Inflow	15	32.326	ug/L	13.831
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Copper, Total (ug/L as Cu)	Inflow	13	27.488	ug/L	15.215
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Copper, Total (ug/L as Cu)	Outflow	13	19.494	ug/L	9.613
HD	ARC Oil Seperator	Copper, Total (ug/L as Cu)	Inflow	9	15.837	ug/l	11.131
HD	ARC Oil Seperator	Copper, Total (ug/L as Cu)	Outflow	9	11.491	ug/L	8.224
HD	Orcas	Lead, Dissolved (ug/L as Pb)	Inflow	4	1.312	ug/L	0.363
HD	Orcas	Lead, Dissolved (ug/L as Pb)	Outflow	4	1.832	ug/L	1.185
HD	MCTT Catchbasin	Lead, Dissolved (ug/L as Pb)	Outflow	13	3.579	ug/L	2.928
HD	MCTT Catchbasin	Lead, Dissolved (ug/L as Pb)	Inflow	13	2.919	ug/L	2.187
HD	Filmore CDS	Lead, Dissolved (ug/L as Pb)	Inflow	7	3.802	ug/L	3.337
HD	Filmore CDS	Lead, Dissolved (ug/L as Pb)	Outflow	7	2.183	ug/L	1.408
HD	Addison-Wesley Incterceptor	Lead, Dissolved (ug/L as Pb)	Inflow	6	0.500	ug/L	0.000
HD	Addison-Wesley Incterceptor	Lead, Dissolved (ug/L as Pb)	Outflow	6	0.500	ug/l	0.000
HD	MCTT Milwaukee	Lead, Dissolved (ug/L as Pb)	Outflow	15	0.582	ug/L	0.276
HD	MCTT Milwaukee	Lead, Dissolved (ug/L as Pb)	Inflow	15	1.513	ug/L	1.800
HD	Sacramento Stormvault	Lead, Dissolved (ug/L as Pb)	Outflow	10	4.603	ug/L	5.503
HD	Sacramento Stormvault	Lead, Dissolved (ug/L as Pb)	Inflow	10	6.989	ug/L	10.664
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Lead, Dissolved (ug/L as Pb)	Inflow	13	2.320	ug/L	2.500
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Lead, Dissolved (ug/L as Pb)	Outflow	13	3.752	ug/L	4.832
HD	Orcas	Lead, Total (ug/L as Pb)	Outflow	4	4.826	ug/L	1.974
HD	Orcas	Lead, Total (ug/L as Pb)	Inflow	4	14.716	ug/L	18.934
HD	MCTT Minocqua	Lead, Total (ug/L as Pb)	Outflow	7	27.523	ug/L	135.465
HD	MCTT Minocqua	Lead, Total (ug/L as Pb)	Inflow	7	65.393	ug/L	77.814
HD	MCTT Catchbasin	Lead, Total (ug/L as Pb)	Outflow	13	19.002	ug/L	19.268
HD	MCTT Catchbasin	Lead, Total (ug/L as Pb)	Inflow	13	21.231	ug/L	19.342
HD	Filmore CDS	Lead, Total (ug/L as Pb)	Outflow	7	10.257	ug/L	6.657
HD	Filmore CDS	Lead, Total (ug/L as Pb)	Inflow	6	10.025	ug/l	7.695
HD	Addison-Wesley Incterceptor	Lead, Total (ug/L as Pb)	Inflow	6	4.115	ug/L	2.585
HD	Addison-Wesley Incterceptor	Lead, Total (ug/L as Pb)	Outflow	6	1.779	ug/L	0.429
HD	MCTT Milwaukee	Lead, Total (ug/L as Pb)	Inflow	15	48.831	ug/L	21.004
HD	MCTT Milwaukee	Lead, Total (ug/L as Pb)	Outflow	15	1.900	ug/L	0.998
HD	Urban Storm Treatment Unit In Madison, Wisconsin	Lead, Total (ug/L as Pb)	Inflow	13	41.524	ug/L	36.889
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Lead, Total (ug/L as Pb)	Outflow	13	28.296	ug/L	23.233
HD	ARC Oil Seperator	Lead, Total (ug/L as Pb)	Inflow	9	22.716	ug/L	15.905
HD	ARC Oil Seperator	Lead, Total (ug/L as Pb)	Outflow	9	16.435	ug/L	9.407
HD	Orcas	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	4	12.537	mg/L	356.776
HD	Orcas	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	4	6.371	mg/L	113.721
HD	Filmore CDS	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	7	1.883	mg/L	8.399
HD	Filmore CDS	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	7	2.799	mg/L	13.934
HD	Sacramento Stormvault	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	10	2.002	mg/L	1.461
HD	Sacramento Stormvault	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	10	0.926	mg/L	0.456
HD	ARC Oil Seperator	Nitrogen, Kjeldahl, Total (mg/L as N)	Inflow	9	25.062	mg/L	127.323
HD	ARC Oil Seperator	Nitrogen, Kjeldahl, Total (mg/L as N)	Outflow	9	4.681	mg/L	7.556
HD	Stormceptor STC 3600	Oil and Grease (mg/L)	Outflow	3	5.378	mg/L	0.619
HD	Stormceptor STC 3600	Oil and Grease (mg/L)	Inflow	4	7.992	mg/L	1.093
HD	Sacramento Stormvault	Oil and Grease (mg/L)	Inflow	10	10.000	mg/L	0.000
HD	Sacramento Stormvault	Oil and Grease (mg/L)	Outflow	10	10.000	mg/L	0.000
HD	ARC Oil Seperator	Oil and Grease (mg/L)	Inflow	8	4.791	mg/L	4.078
HD	ARC Oil Seperator	Oil and Grease (mg/L)	Outflow	8	3.241	mg/L	1.531
HD	Orcas	Phosphorous, Total (mg/L as P)	Outflow	4	0.149	mg/L	0.040
HD	Orcas	Phosphorous, Total (mg/L as P)	Inflow	4	0.186	mg/L	0.085
HD	MCTT Minocqua	Phosphorous, Total (mg/L as P)	Inflow	7	0.239	mg/L	0.012
HD	MCTT Minocqua	Phosphorous, Total (mg/L as P)	Outflow	7	0.127	mg/L	0.108
HD	Filmore CDS	Phosphorous, Total (mg/L as P)	Outflow	7	0.136	mg/L	0.036
HD	Filmore CDS	Phosphorous, Total (mg/L as P)	Inflow	7	3.527	mg/L	44.734
HD	Stormceptor STC 3600	Phosphorous, Total (mg/L as P)	Inflow	6	0.793	mg/L	0.958

Table F-9

Summarized Hydrodynamic Separator EMC Data

HD	Stormceptor STC 3600	Phosphorous, Total (mg/l as P)	Outflow	5	0.275	mg/L	0.252
HD	Sunset Park Baffle Box #2	Phosphorous, Total (mg/L as P)	Outflow	3	1.022	mg/L	0.555
HD	Sunset Park Baffle Box #2	Phosphorous, Total (mg/L as P)	Inflow	3	1.909	mg/L	1.688
HD	MCTT Milwaukee	Phosphorous, Total (mg/L as P)	Inflow	15	0.274	mg/L	0.099
HD	MCTT Milwaukee	Phosphorous, Total (mg/L as P)	Outflow	15	0.032	mg/L	0.018
HD	Sacramento Stormvault	Phosphorous, Total (mg/L as P)	Inflow	9	0.248	mg/L	0.232
HD	Sacramento Stormvault	Phosphorous, Total (mg/L as P)	Outflow	10	0.134	mg/L	0.043
HD	ARC Oil Seperator	Phosphorous, Total (mg/L as P)	Inflow	8	4.656	mg/L	2.042
HD	ARC Oil Seperator	Phosphorous, Total (mg/L as P)	Outflow	8	5.360	mg/L	4.131
HD	CDS Unit	Phosphorous, Total (mg/L as P)	Inflow	4	1.009	mg/L	0.845
HD	CDS Unit	Phosphorous, Total (mg/L as P)	Outflow	4	0.889	mg/L	0.893
HD	MCTT Minocqua	Solids, Total Suspended (mg/L)	Outflow	7	14.177	mg/L	31.046
HD	MCTT Minocqua	Solids, Total Suspended (mg/L)	Inflow	7	252.984	mg/L	254.020
HD	MCTT Catchbasin	Solids, Total Suspended (mg/L)	Outflow	13	40.344	mg/L	51.387
HD	MCTT Catchbasin	Solids, Total Suspended (mg/L)	Inflow	13	52.761	mg/L	62.156
HD	Addison-Wesley Incterceptor	Solids, Total Suspended (mg/L)	Inflow	6	664.065	mg/L	1005.618
HD	Addison-Wesley Incterceptor	Solids, Total Suspended (mg/L)	Outflow	6	215.523	mg/L	313.527
HD	MCTT Milwaukee	Solids, Total Suspended (mg/L)	Outflow	13	6.200	mg/L	2.427
HD	MCTT Milwaukee	Solids, Total Suspended (mg/L)	Inflow	15	312.338	mg/L	211.176
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Solids, Total Suspended (mg/L)	Inflow	45	345.594	mg/L	365.542
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Solids, Total Suspended (mg/L)	Outflow	45	187.819	mg/L	157.010
HD	ARC Oil Seperator	Solids, Total Suspended (mg/L)	Outflow	9	96.754	mg/L	63.076
HD	ARC Oil Seperator	Solids, Total Suspended (mg/L)	Inflow	9	112.328	mg/L	86.335
HD	Orcas	Zinc, Dissolved (ug/L as Zn)	Inflow	4	48.370	ug/L	31.362
HD	Orcas	Zinc, Dissolved (ug/L as Zn)	Outflow	4	57.297	ug/L	38.947
HD	MCTT Catchbasin	Zinc, Dissolved (ug/L as Zn)	Inflow	13	25.065	ug/L	59.266
HD	MCTT Catchbasin	Zinc, Dissolved (ug/L as Zn)	Outflow	13	29.771	ug/L	47.160
HD	Filmore CDS	Zinc, Dissolved (ug/L as Zn)	Outflow	7	59.262	ug/L	23.938
HD	Filmore CDS	Zinc, Dissolved (ug/L as Zn)	Inflow	7	5286.411	ug/L	1477946.000
HD	Addison-Wesley Incterceptor	Zinc, Dissolved (ug/L as Zn)	Inflow	6	58.956	ug/L	70.271
HD	Addison-Wesley Incterceptor	Zinc, Dissolved (ug/L as Zn)	Outflow	6	48.120	ug/L	20.852
HD	MCTT Milwaukee	Zinc, Dissolved (ug/L as Zn)	Inflow	15	14.099	ug/L	8.458
HD	MCTT Milwaukee	Zinc, Dissolved (ug/L as Zn)	Outflow	15	8.855	ug/L	2.353
HD	Sacramento Stormvault	Zinc, Dissolved (ug/L as Zn)	Outflow	10	28.236	ug/L	11.154
HD	Sacramento Stormvault	Zinc, Dissolved (ug/L as Zn)	Inflow	10	79.807	ug/L	106.645
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Zinc, Dissolved (ug/L as Zn)	Outflow	13	42.412	ug/L	30.643
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Zinc, Dissolved (ug/L as Zn)	Inflow	12	48.755	ug/L	50.199
HD	Orcas	Zinc, Total (ug/L as Zn)	Inflow	4	137.829	ug/L	130.066
HD	Orcas	Zinc, Total (ug/l as Zn)	Outflow	4	74.704	ug/L	33.974
HD	MCTT Minocqua	Zinc, Total (ug/L as Zn)	Outflow	7	16.263	ug/L	12.128
HD	MCTT Minocqua	Zinc, Total (ug/L as Zn)	Inflow	7	333.622	ug/L	873.101
HD	MCTT Catchbasin	Zinc, Total (ug/L as Zn)	Outflow	13	205.428	ug/L	354.865
HD	MCTT Catchbasin	Zinc, Total (ug/L as Zn)	Inflow	13	369.105	ug/L	617.569
HD	UVA Stormvault Phase I	Zinc, Total (ug/L as Zn)	Outflow	6	72.380	ug/L	49.092
HD	UVA Stormvault Phase I	Zinc, Total (ug/L as Zn)	Inflow	6	153.416	ug/L	84.839
HD	Filmore CDS	Zinc, Total (ug/L as Zn)	Outflow	7	116.556	ug/L	47.136
HD	Filmore CDS	Zinc, Total (ug/L as Zn)	Inflow	7	236.218	ug/L	945.882
HD	Addison-Wesley Incterceptor	Zinc, Total (ug/l as Zn)	Inflow	6	142.539	ug/L	109.713
HD	Addison-Wesley Incterceptor	Zinc, Total (ug/L as Zn)	Outflow	6	72.673	ug/L	19.554
HD	Stormceptor STC 3600	Zinc, Total (ug/L as Zn)	Outflow	4	89.659	ug/L	44.221
HD	Stormceptor STC 3600	Zinc, Total (ug/L as Zn)	Inflow	5	360.435	ug/L	493.546
HD	MCTT Milwaukee	Zinc, Total (ug/L as Zn)	Outflow	15	22.174	ug/L	6.365
HD	MCTT Milwaukee	Zinc, Total (ug/L as Zn)	Inflow	15	186.820	ug/L	71.030
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Zinc, Total (ug/L as Zn)	Outflow	13	177.344	ug/L	72.198
HD	Urban Storm Treatment Unit in Madison, Wisconsin	Zinc, Total (ug/L as Zn)	Inflow	13	235.144	ug/L	120.806
HD	ARC Oil Seperator	Zinc, Total (ug/L as Zn)	Outflow	9	97.979	ug/l	44.029
HD	ARC Oil Seperator	Zinc, Total (ug/l as Zn)	Inflow	9	101.046	ug/L	43.236

TABLE F-10

SUMMARY OF ANNUAL RUNOFF VOLUMES (FT ^{3})
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	Volume (ft3) Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project	0.00	0	529,919	0	33,851	0	0	560,631	1,124,410
First Phase	0.00	0	2,655,690	0	159,145	0	0	385,910	3,200,745
Off-site	67.72	0	2,345,865	0	0	0	1,989,406	434,771	4,770,109
Subtotal	67.72	0	5,531,474	0	193,006	0	1,989,406	1,381,311	9,095,264
Centinela Ditch at Lincoln									
Proposed Project	0.00	0	0	0	0	0	0	0	0
First Phase	0.00	0	99,212	0	0	0	0	835,207	934,418
Off-site	0.00	0	618,972	68,737	0	0	493,773	49,572	1,231,054
Subtotal	0.00	0	718,184	68,737	0	0	493,773	884,779	2,165,473
Central Storm Drain (future)									
Proposed Project	0.00	0	0	0	0	0	0	0	0
First Phase	0.00	0	0	0	0	0	0	0	0
Off-site	0.00	0	0	0	0	0	0	0	0
Subtotal	0.00	0	0	0	0	0	0	0	0
Lincoln Storm Drain - South									
Proposed Project	0.00	0	0	0	0	0	0	0	0
First Phase	0.00	0	0	0	0	0	0	203	203
Off-site	0.00	0	139,167	165,579	0	238,379	1,197,600	4,063	1,744,788
Subtotal	0.00	0	139,167	165,579	0	238,379	1,197,600	4,266	1,744,991
Direct to Freshwater Marsh (Future)									
Proposed Project	0.00	0	0	0	0	0	0	0	0
First Phase	0.00	0	0	0	0	0	1,608	322,015	323,623
Off-site	0.00	0	0	0	0	0	0	0	0
Subtotal	0.00	0	0	0	0	0	1,608	322,015	323,623
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0	529,919	0	33,861	0	0	560,631	1,124,410
First Phase	0.00	0	2,754,902	0	159,145	0	1,608	1,543,334	4,458,989
Off-site	67.72	0	3,104,005	234,316	0	238,379	3,680,779	488,406	7,745,952
Total	67.72	0	6,388,826	234,316	193,006	238,379	3,682,387	2,592,371	13,329,351

TABLE F-10

SUMMARY OF ANNUAL RUNOFF VOLUMES (FT ^{3})
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	Volume (ft3) Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project	0.00	0	0	0	0	0	0	384,284	384,284
First Phase	0.00	0	10,835	0	0	0	0	949,689	960,525
Off-site	2,215,163.07	0	408,292	1,231,511	0	310,502	1,500,619	489,219	6,155,305
Subtotal	2,215,163.07	0	419,127	1,231,511	0	310,502	1,500,619	1,823,192	7,500,115
Former Area B Residential**									
Proposed Project	0.00	0	0	0	0	0	0	0	0
First Phase	0.00	0	0	0	0	0	0	0	0
Off-site	0.00	0	0	0	0	0	0	0	0
Subtotal	0.00	0	0	0	0	0	0	0	0
East Wetlands									
Proposed Project	0.00	0	0	0	0	0	0	0	0
First Phase	0.00	0	0	0	0	0	0	0	0
Off-site	0.00	0	0	56,547	47,405	0	468,521	860,297	1,432,771
Subtotal	0.00	0	0	56,547	47,405	0	468,521	860,297	1,432,771
South Wetlands									
Proposed Project	0.00	0	0	0	0	0	0	0	0
First Phase	0.00	0	0	0	0	0	0	0	0
Off-site	0.00	0	119,528	118,851	54,177	355,875	2,032,349	433,044	3,113,824
Subtotal	0.00	0	119,528	118,851	54,177	355,875	2,032,349	433,044	3,113,824
North Wetlands***									
Proposed Project	0.00	0	0	0	0	0	0	0	0
First Phase	0.00	0	0	0	0	0	0	0	0
Off-site	0.00	0	218,401	320,660	98,196	339	83,957	1,399,291	2,120,844
Subtotal	0.00	0	218,401	320,660	98,196	339	83,957	1,399,291	2,120,844
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0	0	0	0	0	0	384,284	384,284
First Phase	0.00	0	10,835	0	0	0	0	949,689	960,525
Off-site	2,215,163.07	0	746,221	1,727,570	199,778	666,716	4,085,447	3,181,850	12,822,745
Total	2,215,163.07	0	757,056	1,727,570	199,778	666,716	4,085,447	4,515,824	14,167,554
Total Area - South of Ballona Channel									
Proposed Project	0.00	0	529,919	0	33,861	0	0	944,915	1,508,695
First Phase	0.00	0	2,765,737	0	159,145	0	1,608	2,493,023	5,419,514
Off-site	2,215,230.79	0	3,850,226	1,961,885	199,778	905,095	7,766,226	3,670,256	20,568,697
Total	2,215,230.79	0	7,145,881.74	1,961,885.48	392,783.42	905,094.91	7,767,833.98	7,108,194.85	27,496,905.18

* In Pre-First Phase, the Jefferson Drain outlet is located near the Culver/Jefferson intersection and receives a portion of the runoff from the Former Area B Residential Area and then discharges directly into the Ballona Wetlands.

** In Pre-First Phase, the Former Area B Residential Area discharges to the Jefferson Drain and the North Wetlands.

*** In Pre-First Phase, a portion of the Former Area B Residential Area discharges to the North Wetlands.

TABLE F-11

SUMMARY OF TOTAL SUSPENDED SOLIDS LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TSS Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project	0.00	0.00	2237.15	0.00	0.00	0.00	0.00	7826.40	10063.54
First Phase	0.00	0.00	11211.47	0.00	0.00	0.00	0.00	5387.30	16598.76
Off-site	0.75	0.00	9903.49	0.00	0.00	0.00	5003.04	6069.39	20976.67
Subtotal	0.75	0.00	23352.10	0.00	0.00	0.00	5003.04	19283.08	47638.98
Centinela Ditch at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	418.84	0.00	0.00	0.00	0.00	11659.47	12078.31
Off-site	0.00	0.00	2613.10	169.08	0.00	0.00	1241.76	692.02	4715.97
Subtotal			3031.94	169.08	0.00	0.00	1241.76	12351.50	16794.28
Central Storm Drain (future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.84	2.84
Off-site	0.00	0.00	587.52	407.28	0.00	599.49	3011.78	56.72	4662.79
Subtotal	0.00	0.00	587.52	407.28	0.00	599.49	3011.78	59.56	4665.63
Direct to Freshwater Marsh (Future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	4.04	4495.32	4499.37
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	4.04	4495.32	4499.37
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	2237.15	0.00	0.00	0.00	0.00	7826.40	10063.54
First Phase	0.00	0.00	11630.31	0.00	0.00	0.00	4.04	21544.93	33179.28
Off-site	0.75	0.00	13104.11	576.36	0.00	599.49	9256.58	6818.14	30355.43
Total	0.75	0.00	26971.56	576.36	0.00	599.49	9260.63	36189.46	73598.25

TABLE F-11

SUMMARY OF TOTAL SUSPENDED SOLIDS LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TSS Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5364.61	5364.61
First Phase	0.00	0.00	45.74	0.00	0.00	0.00	0.00	13257.65	13303.40
Off-site	24594.31	0.00	1723.68	3029.23	0.00	780.86	3773.82	6829.48	40731.39
Subtotal	24594.31	0.00	1769.42	3029.23	0.00	780.86	3773.82	25451.74	59399.39
Former Area B Residential**									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	139.09	0.00	0.00	1178.26	12009.74	13327.09
Subtotal	0.00	0.00	0.00	139.09	0.00	0.00	1178.26	12009.74	13327.09
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	504.61	292.35	0.00	894.97	5111.04	6045.29	12848.25
Subtotal	0.00	0.00	504.61	292.35	0.00	894.97	5111.04	6045.29	12848.25
North Wetlands***									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	922.02	788.75	0.00	0.85	211.14	19534.08	21456.84
Subtotal	0.00	0.00	922.02	788.75	0.00	0.85	211.14	19534.08	21456.84
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5364.61	5364.61
First Phase	0.00	0.00	45.74	0.00	0.00	0.00	0.00	13257.65	13303.40
Off-site	24594.31	0.00	3150.30	4249.42	0.00	1676.69	10274.26	44418.59	88363.58
Total	24594.31	0.00	3196.05	4249.42	0.00	1676.69	10274.26	63040.85	107031.58
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	2237.15	0.00	0.00	0.00	0.00	13191.00	15428.15
First Phase	0.00	0.00	11676.05	0.00	0.00	0.00	4.04	34802.58	46482.67
Off-site	24595.07	0.00	16254.41	4825.78	0.00	2276.17	19530.84	51236.73	118719.01
Total	24595.07	0.00	30167.61	4825.78	0.00	2276.17	19534.89	99230.32	180629.83

TABLE F-12

SUMMARY OF TOTAL PHOSPHORUS LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TP Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project	0.00	0.00	13.21	0.00	0.00	0.00	0.00	4.33	17.54
First Phase	0.00	0.00	66.20	0.00	0.00	0.00	0.00	2.98	69.18
Off-site	0.00	0.00	58.47	0.00	0.00	0.00	29.36	3.36	91.20
Subtotal	0.00	0.00	137.88	0.00	0.00	0.00	29.36	10.68	177.92
Centinela Ditch at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	2.47	0.00	0.00	0.00	0.00	6.46	8.93
Off-site	0.00	0.00	15.43	1.27	0.00	0.00	7.29	0.38	24.37
Subtotal	0.00	0.00	17.90	1.27	0.00	0.00	7.29	6.84	33.30
Central Storm Drain (future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	3.47	3.05	0.00	3.52	17.68	0.03	27.75
Subtotal	0.00	0.00	3.47	3.05	0.00	3.52	17.68	0.03	27.75
Direct to Freshwater Marsh (Future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.02	2.49	2.51
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.02	2.49	2.51
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	13.21	0.00	0.00	0.00	0.00	4.33	17.54
First Phase	0.00	0.00	68.67	0.00	0.00	0.00	0.02	11.93	80.63
Off-site	0.00	0.00	77.37	4.32	0.00	3.52	54.33	3.78	143.32
Total	0.00	0.00	159.25	4.32	0.00	3.52	54.35	20.05	241.48

TABLE F-12

SUMMARY OF TOTAL PHOSPHORUS LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TP Loads
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.97
First Phase	0.00	0.00	0.27	0.00	0.00	0.00	0.00	7.34	7.61
Off-site	42.62	0.00	10.18	22.72	0.00	4.58	22.15	3.78	106.03
Subtotal	42.62	0.00	10.45	22.72	0.00	4.58	22.15	14.10	116.62
Former Area B Residential**									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	1.04	0.00	0.00	6.92	6.65	14.61
Subtotal	0.00	0.00	0.00	1.04	0.00	0.00	6.92	6.65	14.61
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	2.98	2.19	0.00	5.25	30.00	3.35	43.77
Subtotal	0.00	0.00	2.98	2.19	0.00	5.25	30.00	3.35	43.77
North Wetlands***									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	5.44	5.91	0.00	0.00	1.24	10.82	23.42
Subtotal	0.00	0.00	5.44	5.91	0.00	0.00	1.24	10.82	23.42
Total Area - Ballona Wetlands Tributary	0.00	0.00	10.89	11.83	0.00	0.01	2.46	21.64	46.85
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.97	2.97
First Phase	0.00	0.00	0.27	0.00	0.00	0.00	0.00	7.34	7.61
Off-site	42.62	0.00	18.60	31.87	0.00	9.84	60.30	24.60	187.83
Total	42.62	0.00	18.87	31.87	0.00	9.84	60.30	34.92	198.42
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	13.21	0.00	0.00	0.00	0.00	7.31	20.52
First Phase	0.00	0.00	68.94	0.00	0.00	0.00	0.02	19.28	88.24
Off-site	42.63	0.00	95.97	36.19	0.00	13.36	114.63	28.38	331.15
Total	42.63	0.00	178.12	36.19	0.00	13.36	114.65	54.96	439.90

TABLE F-13

SUMMARY OF TOTAL KJELDAHL NITROGEN LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
Runoff Coefficients	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project	0.00	0.00	102.97	0.00	0.00	0.00	0.00	34.15	137.12
First Phase	0.00	0.00	516.02	0.00	0.00	0.00	0.00	23.51	539.53
Off-site	0.01	0.00	456.82	0.00	0.00	0.00	224.76	26.48	707.07
Subtotal	0.01	0.00	1074.81	0.00	0.00	0.00	224.76	84.14	1383.72
Centinela Ditch at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	19.28	0.00	0.00	0.00	0.00	50.87	70.15
Off-site	0.00	0.00	120.27	4.52	0.00	0.00	55.79	3.02	183.59
Subtotal	0.00	0.00	139.55	4.52	0.00	0.00	55.79	53.89	253.75
Central Storm Drain (future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Off-site	0.00	0.00	27.04	10.88	0.00	26.93	135.30	0.25	200.41
Subtotal	0.00	0.00	27.04	10.88	0.00	26.93	135.30	0.26	200.42
Direct to Freshwater Marsh (Future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.18	19.61	19.80
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.18	19.61	19.80
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	102.97	0.00	0.00	0.00	0.00	34.15	137.12
First Phase	0.00	0.00	535.30	0.00	0.00	0.00	0.18	94.01	629.49
Off-site	0.01	0.00	603.13	15.40	0.00	26.93	415.85	29.75	1091.08
Total	0.01	0.00	1241.40	15.40	0.00	26.93	416.04	157.90	1857.58

TABLE F-13

SUMMARY OF TOTAL KJELDAHL NITROGEN LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.41	23.41
First Phase	0.00	0.00	2.11	0.00	0.00	0.00	0.00	57.85	59.95
Off-site	315.85	0.00	79.33	80.94	0.00	35.08	169.54	29.80	710.54
Subtotal	315.85	0.00	81.44	80.94	0.00	35.08	169.54	111.05	793.90
Former Area B Residential**									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	3.72	0.00	0.00	52.93	52.40	109.05
Subtotal	0.00	0.00	0.00	3.72	0.00	0.00	52.93	52.40	109.05
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	23.23	7.81	0.00	40.21	229.61	26.38	327.24
Subtotal	0.00	0.00	23.23	7.81	0.00	40.21	229.61	26.38	327.24
North Wetlands***									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	42.44	21.08	0.00	0.04	9.49	85.23	158.27
Subtotal	0.00	0.00	42.44	21.08	0.00	0.04	9.49	85.23	158.27
Total Area - Ballona Wetlands Tributary	0.00	0.00	84.87	42.15	0.00	0.08	18.97	170.46	316.54
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.41	23.41
First Phase	0.00	0.00	2.11	0.00	0.00	0.00	0.00	57.85	59.95
Off-site	315.85	0.00	145.00	113.55	0.00	75.33	461.57	193.81	1305.10
Total	315.85	0.00	147.10	113.55	0.00	75.33	461.57	275.06	1388.46
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	102.97	0.00	0.00	0.00	0.00	57.56	160.52
First Phase	0.00	0.00	537.40	0.00	0.00	0.00	0.18	151.85	689.44
Off-site	315.86	0.00	748.13	128.95	0.00	102.26	877.43	223.56	2396.18
Total	315.86	0.00	1388.50	128.95	0.00	102.26	877.61	432.97	3246.14

* In Pre-First Phase, the Jefferson Drain outlet is located near the Culver/Jefferson intersection and receives a portion of the runoff from the Former Area B Residential Area and then discharges directly into the Ballona Wetlands.

** In Pre-First Phase, the Former Area B Residential Area discharges to the Jefferson Drain and the North Wetlands.

*** In Pre-First Phase, a portion of the Former Area B Residential Area discharges to the North Wetlands.

TABLE F-14

SUMMARY OF OIL AND GREASE LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	O&G Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project	0.00	0.00	108.42	0.00	0.00	0.00	0.00	0.00	108.42
First Phase	0.00	0.00	543.37	0.00	0.00	0.00	0.00	0.00	543.37
Off-site	0.01	0.00	479.98	0.00	0.00	0.00	161.45	0.00	641.44
Subtotal	0.01	0.00	1131.78	0.00	0.00	0.00	161.45	0.00	1293.24
Centinela Ditch at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	20.30	0.00	0.00	0.00	0.00	0.00	20.30
Off-site	0.00	0.00	126.65	13.30	0.00	0.00	40.07	0.00	180.02
Subtotal	0.00	0.00	146.95	13.30	0.00	0.00	40.07	0.00	200.32
Central Storm Drain (future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	28.47	32.04	0.00	19.35	97.19	0.00	177.06
Subtotal	0.00	0.00	28.47	32.04	0.00	19.35	97.19	0.00	177.06
Direct to Freshwater Marsh (Future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	108.42	0.00	0.00	0.00	0.00	0.00	108.42
First Phase	0.00	0.00	563.67	0.00	0.00	0.00	0.13	0.00	563.80
Off-site	0.01	0.00	635.10	45.35	0.00	19.35	298.72	0.00	998.52
Total	0.01	0.00	1307.20	45.35	0.00	19.35	298.85	0.00	1670.74

TABLE F-14

SUMMARY OF OIL AND GREASE LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	O&G Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	2.22	0.00	0.00	0.00	0.00	0.00	2.22
Off-site	235.09	0.00	83.54	238.33	0.00	25.20	121.78	0.00	703.94
Subtotal	235.09	0.00	85.76	238.33	0.00	25.20	121.78	0.00	706.16
Former Area B Residential**									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	10.94	0.00	0.00	38.02	0.00	48.97
Subtotal	0.00	0.00	0.00	10.94	0.00	0.00	38.02	0.00	48.97
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	24.46	23.00	0.00	28.88	164.94	0.00	241.28
Subtotal	0.00	0.00	24.46	23.00	0.00	28.88	164.94	0.00	241.28
North Wetlands***									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	44.69	62.06	0.00	0.03	6.81	0.00	113.58
Subtotal	0.00	0.00	44.69	62.06	0.00	0.03	6.81	0.00	113.58
Total Area - Ballona Wetlands Tributary	0.00	0.00	89.37	124.11	0.00	0.05	13.63	0.00	227.17
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	2.22	0.00	0.00	0.00	0.00	0.00	2.22
Off-site	235.09	0.00	152.68	334.33	0.00	54.11	331.56	0.00	1107.77
Total	235.09	0.00	154.90	334.33	0.00	54.11	331.56	0.00	1109.98
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	108.42	0.00	0.00	0.00	0.00	0.00	108.42
First Phase	0.00	0.00	565.89	0.00	0.00	0.00	0.13	0.00	566.02
Off-site	235.10	0.00	787.78	379.68	0.00	73.45	630.28	0.00	2106.28
Total	235.10	0.00	1462.09	379.68	0.00	73.45	630.41	0.00	2780.73

TABLE F-15

SUMMARY OF TOTAL COPPER LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TCu Loads Subtotals
Runoff Coefficients	0.80	0.80	0.80	0.80	0.60	0.80	0.38	0.24	
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project	0.00	0.00	1.15	0.00	0.00	0.00	0.00	0.31	1.46
First Phase	0.00	0.00	5.76	0.00	0.00	0.00	0.00	0.21	5.98
Off-site	0.00	0.00	5.09	0.00	0.00	0.00	1.38	0.24	6.71
Subtotal	0.00	0.00	12.01	0.00	0.00	0.00	1.38	0.76	14.15
Centinela Ditch at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.46	0.68
Off-site	0.00	0.00	1.34	0.15	0.00	0.00	0.34	0.03	1.86
Subtotal	0.00	0.00	1.56	0.15	0.00	0.00	0.34	0.49	2.54
Central Storm Drain (future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.30	0.35	0.00	0.17	0.83	0.00	1.65
Subtotal	0.00	0.00	0.30	0.35	0.00	0.17	0.83	0.00	1.65
Direct to Freshwater Marsh (Future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	1.15	0.00	0.00	0.00	0.00	0.31	1.46
First Phase	0.00	0.00	5.98	0.00	0.00	0.00	0.00	0.85	6.83
Off-site	0.00	0.00	6.74	0.50	0.00	0.17	2.55	0.27	10.22
Total	0.00	0.00	13.87	0.50	0.00	0.17	2.55	1.44	18.51

TABLE F-15

SUMMARY OF TOTAL COPPER LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TCu Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21
First Phase	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.53	0.55
Off-site	3.85	0.00	0.89	2.61	0.00	0.22	1.04	0.27	8.87
Subtotal	3.85	0.00	0.91	2.61	0.00	0.22	1.04	1.01	9.63
Former Area B Residential**									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.12	0.00	0.00	0.32	0.48	0.92
Subtotal	0.00	0.00	0.00	0.12	0.00	0.00	0.32	0.48	0.92
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.26	0.25	0.00	0.25	1.41	0.24	2.40
Subtotal	0.00	0.00	0.26	0.25	0.00	0.25	1.41	0.24	2.40
North Wetlands***									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.47	0.68	0.00	0.00	0.06	0.77	1.99
Subtotal	0.00	0.00	0.47	0.68	0.00	0.00	0.06	0.77	1.99
Total Area - Ballona Wetlands Tributary	0.00	0.00	0.95	1.36	0.00	0.00	0.12	1.55	3.97
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21
First Phase	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.53	0.55
Off-site	3.85	0.00	1.62	3.66	0.00	0.46	2.83	1.76	14.18
Total	3.85	0.00	1.64	3.66	0.00	0.46	2.83	2.50	14.94
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	1.15	0.00	0.00	0.00	0.00	0.52	1.67
First Phase	0.00	0.00	6.00	0.00	0.00	0.00	0.00	1.38	7.38
Off-site	3.85	0.00	8.36	4.16	0.00	0.63	5.38	2.03	24.40
Total	3.85	0.00	15.51	4.16	0.00	0.63	5.38	3.94	33.46

TABLE F-16

SUMMARY OF TOTAL LEAD LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TPb Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.11	0.80
First Phase	0.00	0.00	3.45	0.00	0.00	0.00	0.00	0.08	3.53
Off-site	0.00	0.00	3.05	0.00	0.00	0.00	0.40	0.09	3.54
Subtotal	0.00	0.00	7.19	0.00	0.00	0.00	0.40	0.28	7.87
Centinela Ditch at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.17	0.30
Off-site	0.00	0.00	0.80	0.02	0.00	0.00	0.10	0.01	0.93
Subtotal	0.00	0.00	0.93	0.02	0.00	0.00	0.10	0.18	1.23
Central Storm Drain (future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.18	0.04	0.00	0.05	0.24	0.00	0.51
Subtotal	0.00	0.00	0.18	0.04	0.00	0.05	0.24	0.00	0.51
Direct to Freshwater Marsh (Future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.11	0.80
First Phase	0.00	0.00	3.58	0.00	0.00	0.00	0.00	0.31	3.89
Off-site	0.00	0.00	4.03	0.05	0.00	0.05	0.75	0.10	4.98
Total	0.00	0.00	8.30	0.05	0.00	0.05	0.75	0.52	9.67

TABLE F-16

SUMMARY OF TOTAL LEAD LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TPb Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08
First Phase	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.19	0.20
Off-site	2.51	0.00	0.53	0.27	0.00	0.06	0.30	0.10	3.78
Subtotal	2.51	0.00	0.54	0.27	0.00	0.06	0.30	0.37	4.06
Former Area B Residential**									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.01	0.00	0.00	0.10	0.17	0.28
Subtotal	0.00	0.00	0.00	0.01	0.00	0.00	0.10	0.17	0.28
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.16	0.03	0.00	0.07	0.41	0.09	0.75
Subtotal	0.00	0.00	0.16	0.03	0.00	0.07	0.41	0.09	0.75
North Wetlands***									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.28	0.07	0.00	0.00	0.02	0.28	0.65
Subtotal	0.00	0.00	0.28	0.07	0.00	0.00	0.02	0.28	0.65
Total Area - Ballona Wetlands Tributary	0.00	0.00	0.57	0.14	0.00	0.00	0.03	0.56	1.30
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08
First Phase	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.19	0.20
Off-site	2.51	0.00	0.97	0.38	0.00	0.14	0.83	0.64	5.46
Total	2.51	0.00	0.98	0.38	0.00	0.14	0.83	0.91	5.74
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.19	0.88
First Phase	0.00	0.00	3.59	0.00	0.00	0.00	0.00	0.50	4.09
Off-site	2.51	0.00	5.00	0.43	0.00	0.18	1.58	0.74	10.44
Total	2.51	0.00	9.28	0.43	0.00	0.18	1.58	1.42	15.41

TABLE F-17

SUMMARY OF TOTAL ZINC LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TZn Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh (future)									
Centinela Ditch (future Riparian Corridor) at Proposed Project Boundary									
Proposed Project	0.00	0.00	7.89	0.00	0.00	0.00	0.00	0.77	**8.66**
First Phase	0.00	0.00	39.55	0.00	0.00	0.00	0.00	0.53	**40.07**
Off-site	0.00	0.00	34.93	0.00	0.00	0.00	12.00	0.60	**47.53**
Subtotal	**0.00**	**0.00**	**82.37**	**0.00**	**0.00**	**0.00**	**12.00**	**1.89**	**96.27**
Centinela Ditch at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	1.48	0.00	0.00	0.00	0.00	1.14	**2.62**
Off-site	0.00	0.00	9.22	0.74	0.00	0.00	2.98	0.07	**13.01**
Subtotal	**0.00**	**0.00**	**10.69**	**0.74**	**0.00**	**0.00**	**2.98**	**1.21**	**15.63**
Central Storm Drain (future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	2.07	1.79	0.00	1.44	7.23	0.01	**12.53**
Subtotal	**0.00**	**0.00**	**2.07**	**1.79**	**0.00**	**1.44**	**7.23**	**0.01**	**12.53**
Direct to Freshwater Marsh (Future)									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.44	**0.45**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.44**	**0.45**
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	7.89	0.00	0.00	0.00	0.00	0.77	**8.66**
First Phase	0.00	0.00	41.02	0.00	0.00	0.00	0.01	2.11	**43.15**
Off-site	0.00	0.00	46.22	2.53	0.00	1.44	22.21	0.67	**73.07**
Total	**0.00**	**0.00**	**95.14**	**2.53**	**0.00**	**1.44**	**22.22**	**3.55**	**124.88**

TABLE F-17

SUMMARY OF TOTAL ZINC LOADS (LBS.)
PLAYA VISTA - South of Ballona - Pre First Phase

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TZn Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Ballona Wetlands									
Jefferson Storm Drain *									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	**0.53**
First Phase	0.00	0.00	0.16	0.00	0.00	0.00	0.00	1.30	**1.46**
Off-site	46.32	0.00	6.08	13.31	0.00	1.87	9.05	0.67	**77.30**
Subtotal	**46.32**	**0.00**	**6.24**	**13.31**	**0.00**	**1.87**	**9.05**	**2.50**	**79.29**
Former Area B Residential**									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.61	0.00	0.00	2.83	1.18	**4.62**
Subtotal	**0.00**	**0.00**	**0.00**	**0.61**	**0.00**	**0.00**	**2.83**	**1.18**	4.62
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	1.78	1.28	0.00	2.15	12.26	0.59	**18.07**
Subtotal	**0.00**	**0.00**	**1.78**	**1.28**	**0.00**	**2.15**	**12.26**	**0.59**	18.07
North Wetlands***									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	3.25	3.46	0.00	0.00	0.51	1.92	**9.14**
Subtotal	**0.00**	**0.00**	**3.25**	**3.46**	**0.00**	**0.00**	**0.51**	**1.92**	9.14
Total Area - Ballona Wetlands Tributary	0.00	0.00	6.50	6.93	0.00	0.00	1.01	3.83	18.29
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	**0.53**
First Phase	0.00	0.00	0.16	0.00	0.00	0.00	0.00	1.30	**1.46**
Off-site	46.32	0.00	11.11	18.67	0.00	4.02	24.65	4.36	**109.13**
Total	**46.32**	**0.00**	**11.27**	**18.67**	**0.00**	**4.02**	**24.65**	**6.19**	**111.12**
Total Area - South of Ballona Channel									
Proposed Project	**0.00**	**0.00**	**7.89**	**0.00**	**0.00**	**0.00**	**0.00**	**1.29**	**9.19**
First Phase	**0.00**	**0.00**	**41.18**	**0.00**	**0.00**	**0.00**	**0.01**	**3.42**	**44.61**
Off-site	**46.32**	**0.00**	**57.33**	**21.20**	**0.00**	**5.46**	**46.86**	**5.03**	**182.20**
Total	**46.32**	**0.00**	**106.41**	**21.20**	**0.00**	**5.46**	**46.87**	**9.74**	**235.99**

TABLE F-18

SUMMARY OF ANNUAL LOADS (LBS)
PLAYA VISTA - South of Ballona - Pre First Phase

	Loads (lbs.)										
	TSS	Total P	TKN	O&G	Total Cu	Diss. Cu	Total Pb	Diss. Pb	Total Zn	Diss. Zn	Volume (ft³)
Freshwater Marsh (not in operation)											
Upper Centinela Ditch	47,639	178	1,384	1,293	14.1	6.6	7.9	3.6	96.3	57.3	9,095,264
Mass Removed in Upper Centinela Ditch	*0*	*0*	*-383*	*0*	*-2.6*	*0.0*	*0.0*	*0.0*	*0.0*	*-27.5*	
Centinela Ditch at Proposed Project Boundary	**47,639**	**178**	**1,000**	**1,293**	**11.5**	**6.6**	**7.9**	**3.6**	**96.3**	**29.8**	**9,095,264**
Lower Centinela Ditch	16,794	33	254	200	2.5	1.2	1.2	0.6	15.6	7.3	2,165,473
Mass Removed in Lower Centinela Ditch	*-1,715*	*0*	*-16*	*0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.2*	
Centinela Ditch at Lincoln	**62,718**	**211**	**1,239**	**1,494**	**14.1**	**7.8**	**9.1**	**4.2**	**111.9**	**36.9**	**11,260,737**
Central Storm Drain	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0
Total Playa Vista Area	**62,718**	**211**	**1,239**	**1,494**	**14**	**8**	**9**	**4**	**112**	**37**	**11,260,737**
% of PV Area through WQ Inlets	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
% Removal - WQ Inlet	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
First and Second Phase, Including Offsite	**62,718**	**211**	**1,239**	**1,494**	**14.1**	**7.8**	**9.1**	**4.2**	**111.9**	**36.9**	**11,260,737**
Lincoln Storm Drain - South	4,666	28	200	177	1.6	0.8	0.5	0.2	12.5	7.5	1,744,991
Centinela and Lincoln	**67,384**	**239**	**1,439**	**1,671**	**15.7**	**8.5**	**9.6**	**4.4**	**124.4**	**44.4**	**13,005,728**
Mass Removed in Pretreatment Areas	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
Direct to Freshwater Marsh	4,499	3	20	0	0.2	0.1	0.1	0.0	0.5	0.3	323,623
Main Body of Freshwater Marsh	**71,883**	**241**	**1,459**	**1,671**	**15.9**	**8.6**	**9.7**	**4.4**	**124.9**	**44.7**	13,329,351
Mass Removed in Main Body of Marsh	*0*	*0*	*0*	*0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	
Effluent from Future Marsh Area	**71,883**	**241**	**1,459**	**1,671**	**15.9**	**8.8**	**9.7**	**4.4**	**124.9**	**44.7**	**13,329,351**
Ballona Wetlands											
Jefferson Storm Drain	59,399	117	794	706	9.6	4.5	4.1	1.9	79.3	47.2	7,500,115
Freshwater Marsh Effluent (Not in Operation)	71,883	241	1,459	1,671	16	9	10	4	125	45	13,329,351
East Wetlands	13,327	15	109	49	0.9	0.4	0.3	0.1	4.6	2.7	1,432,771
South Wetlands	12,846	44	327	241	2.4	1.1	0.8	0.3	18.1	10.8	3,113,824
North Wetlands	21,457	23	158	114	2.0	0.9	0.7	0.3	9.1	5.4	2,120,844
Former Area B	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0
Off-site Stormwater Runoff Direct to Wetlands	47,632.2	81.8	594.6	403.8	5.3	2.5	1.7	0.8	31.8	18.9	6,667,439
Total Area - Ballona Wetlands Tributary	**178,915**	**440**	**2,847**	**2,781**	**30.9**	**15.6**	**15.4**	**7.1**	**236.0**	**110.8**	**27,496,905**
Mass Removed in Wetlands	*-111,028*	*-45*	*-526*	*-189*	*-5.4*	*-5.0*	*0.0*	*0.0*	*-172.7*	*-84.7*	
Ballona Wetlands Effluent	**67,887**	**395**	**2,321**	**2,592**	**25.5**	**10.6**	**15.4**	**7.1**	**63.3**	**26.1**	**27,496,905**
Ballona Channel											
Freshwater Wetlands System	0	0	0	0	0	0	0	0	0	0	0
Ballona Wetlands	67,887	395	2,321	2,592	25.5	10.6	15.4	7.1	63.3	26.1	27,496,906.18
Total Ballona Channel Influent	**67,887**	**395**	**2,321**	**2,592**	**25.5**	**10.6**	**15.4**	**7.1**	**63.3**	**26.1**	**27,496,906.18**

TABLE F-19

SUMMARY OF ANNUAL CONCENTRATIONS (MG/L)
PLAYA VISTA - South of Ballona - Pre First Phase

	Concentrations										
	mg/L				ug/L						
	TSS	Total P	TKN	O&G	Total Cu	Diss. Cu	Total Pb	Diss. Pb	Total Zn	Diss. Zn	Volume (ft³)
Freshwater Marsh (not in operation)											
Upper Centinela Ditch	83.9	0.3	2.4	2.3	24.9	11.6	13.9	6.3	169.5	100.9	9,095,264
% Removed in Upper Centinela Ditch	*0%*	*0%*	*26%*	*0%*	*18%*	*0%*	*0%*	*0%*	*0%*	*48%*	
Centinela Ditch at Proposed Project Boundary	83.9	0.3	1.8	2.3	20.3	11.6	13.9	6.3	169.5	52.5	**9,095,264**
Lower Centinela Ditch	124.2	0.2	1.9	1.5	18.8	8.7	9.1	4.2	115.6	53.8	2,165,473
Percent Removed in Lower Centinela Ditch	*10%*	*0%*	*6%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*2%*	
Centinela Ditch at Lincoln	89.2	0.3	1.8	2.1	20.0	11.0	12.9	5.9	159.2	52.5	11,260,737
Central Storm Drain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Total Playa Vista Area	**89.2**	**0.3**	**1.8**	**2.1**	**20.0**	**11.0**	**12.9**	**5.9**	**159.2**	**52.5**	**11,260,737**
First and Second Phase, Including Offsite	89.2	0.3	1.8	2.1	20.0	11.0	12.9	5.9	159.2	52.5	**11,260,737**
Lincoln Storm Drain - South	42.8	0.3	1.8	1.6	15.1	7.0	4.7	2.1	115.0	68.4	1,744,991
Freshwater Marsh	83.0	0.3	1.8	2.1	19.4	10.5	11.0	5.4	153.3	54.7	**13,005,728**
% Removed in Primary Management Areas	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Direct to Freshwater Marsh	222.7	0.1	1.0	0.0	8.9	4.1	3.2	1.5	22.3	13.3	323,623
Main Body of Freshwater Marsh	86.4	0.3	1.8	2.0	19.1	10.3	11.6	5.3	150.1	53.7	**13,329,351**
% Removed in Main Body of Marsh	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Effluent from Future Marsh Area	86.4	0.3	1.8	2.0	0.0	0.0	0.0	0.0	0.2	0.1	**13,329,351**
Ballona Wetlands											
Jefferson Storm Drain	126.9	0.2	1.7	1.5	20.6	9.6	8.7	4.0	169.3	100.8	7,600,115
Freshwater Marsh Effluent (Not in Operation)	86.4	0.3	1.8	2.0	19.1	10.3	11.6	5.3	150.1	53.7	13,329,351
East Wetlands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,432,771
South Wetlands	66.1	0.2	1.7	1.2	12.4	5.8	3.9	1.8	92.9	55.3	3,113,824
North Wetlands	162.1	0.2	1.2	0.9	15.0	7.0	4.9	2.3	69.1	41.1	2,120,844
Former Area B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Off-site Stormwater Runoff Direct to Wetlands	114.4	0.2	1.4	1.0	12.8	5.9	4.0	1.9	76.5	45.5	6,867,439
Total Area - Ballona Wetlands Tributary	**104.2**	**0.3**	**1.7**	**1.6**	**18.0**	**8.1**	**9.0**	**4.1**	**137.5**	**64.5**	**27,496,905**
Mass Removed in Wetlands	*62%*	*10%*	*18%*	*7%*	*17%*	*32%*	*0%*	*0%*	*73%*	*76%*	
Ballona Wetlands Effluent	39.5	0.2	1.4	1.5	14.8	6.2	9.0	4.1	36.9	15.2	**27,496,905**
Ballona Channel											
Freshwater Wetlands System	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Ballona Wetlands	39.5	0.2	1.4	1.5	14.8	6.2	9.0	4.1	36.9	15.2	27,496,905.18
Total Ballona Channel Influent	**39.5**	**0.2**	**1.4**	**1.5**	**14.8**	**6.2**	**9.0**	**4.1**	**36.9**	**15.2**	**27,496,905.18**

TABLE F-20

SUMMARY OF ANNUAL RUNOFF (FT^3)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								Volume (ft3)
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0	0	529919	0	33861	0	0	560631	1124410
First Phase	0	0	2426115	0	142215	0	0	77405	2645735
Off-site	2032	0	2360087	15237	0	0	1979755	483936	4841047
Subtotal	2032	0	5316120	15237	176075	0	1979755	1121972	8611192
Riparian Corridor at Lincoln									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	506555	0	331834	1010063	0	181324	2029776
Off-site	0	0	609830	0	0	0	505353	0	1115183
Subtotal	0	0	1116385	0	331834	1010063	505353	181324	3144959
Total Riparian Corridor Tributary Area	2032	0	6432506	15237	507910	1010063	2485108	1303296	11756152
Central Storm Drain									
Proposed Project	0	0	0	0	0	0	0	378494	378494
First Phase	0	0	1293815	0	0	1936490	0	133479	3363784
Off-site	339	0	0	275964	0	0	0	0	276303
Subtotal	339	0	1293815	275964	0	1936490	0	511973	4018581
Jefferson Storm Drain									
Proposed Project	0	7250	0	0	0	12084	0	0	19334
First Phase	0	0	507232	0	0	629469	0	18691	1155393
Off-site	2216163	0	400910	1378805	0	310502	1500619	6298	5812297
Subtotal	2216163	7250	908142	1378805	0	952055	1500619	24989	6987025
Lincoln Storm Drain - South									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	2438	2438
Off-site	0	0	130025	209259	0	238379	1197600	0	1775263
Subtotal	0	0	130025	209259	0	238379	1197600	2438	1777701
Freshwater Wetlands									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	9481	328448	0	1608	220636	560173
Off-site	0	0	0	0	0	0	0	0	0
Subtotal	0	0	0	9481	328448	0	1608	220636	560173
Total Area - Freshwater Marsh Tributary									
Proposed Project	0	7250	529919	0	33861	12084	0	939125	1522239
First Phase	0	0	4733717	9481	802497	3576022	1608	633973	9757299
Off-site	2217533	0	3500852	1679266	0	548881	5183326	490234	13620093
Total	2217533	7250	8764488	1688746	836358	4136987	5184936	2063332	25099631

TABLE F-20

SUMMARY OF ANNUAL RUNOFF (FT^3)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								Volume (ft3)
	0.80	0.80	0.60	0.60	0.60	0.80	0.38	0.24	Subtotals
Former Area B Residential (Direct to Ballona Channel)									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	0	285445	0	0	0	512786	798231
Subtotal	0	0	0	285445	0	0	0	512786	798231
Total Area - Former Area B Residential									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	0	285445	0	0	0	512786	798231
Total	0	0	0	285445	0	0	0	512786	798231
Ballona Wetlands									
East Wetlands									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	0	74632	30475	0	468521	859891	1433719
Subtotal	0	0	0	74632	30475	0	468521	859891	1433719
South Wetlands									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	119528	117835	54177	355875	2032349	433348	3113113
Subtotal	0	0	119528	117835	54177	355875	2032349	433348	3113113
North Wetlands									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	218401	197408	98196	339	84118	1202527	1800988
Subtotal	0	0	218401	197408	98196	339	84118	1202527	1800988
Total Area - Ballona Wetlands Tributary									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	337929	390075	182847	356214	2584989	2495766	6347820
Total	0	0	337929	390075	182847	356214	2584989	2495766	6347820
Total Area - South of Ballona Channel									
Proposed Project	0	7250	529919	0	33861	12084	0	939125	1522239
First Phase	0	0	4733717	5481	802497	3576022	1608	633973	9757299
Off-site	2217533	0	3838781	2554785	182847	905095	7768316	3498786	20966144
Total	2217533	7250	9102417	2564266	1019205	4493201	7769925	5071884	32245682

TABLE F-21a

SUMMARY OF TOTAL SUSPENDED SOLIDS RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TSS Loads
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.36	0.24	Subtotals
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	7,158.48	7860.61
Subtotal	**0.00**	**0.00**	**0.00**	**702.13**	**0.00**	**0.00**	**0.00**	**7158.48**	**7860.61**
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	7,158.48	7860.61
Total	**0.00**	**0.00**	**0.00**	**702.13**	**0.00**	**0.00**	**0.00**	**7158.48**	**7860.61**
Ballona Wetlands									
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	184.07	0.00	0.00	1,178.26	12,004.07	13366.39
Subtotal	**0.00**	**0.00**	**0.00**	**184.07**	**0.00**	**0.00**	**1178.26**	**12004.07**	**13366.39**
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	504.61	289.85	0.00	894.97	5,111.04	6,049.54	12850.01
Subtotal	**0.00**	**0.00**	**504.61**	**289.85**	**0.00**	**894.97**	**5111.04**	**6049.54**	**12850.01**
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	922.02	485.58	0.00	0.85	211.54	16,767.26	18407.25
Subtotal	**0.00**	**0.00**	**922.02**	**485.58**	**0.00**	**0.85**	**211.54**	**16787.26**	**18407.25**
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	1,426.63	959.49	0.00	895.82	6,500.84	34,840.67	44623.65
Total	**0.00**	**0.00**	**1426.63**	**959.49**	**0.00**	**895.82**	**6500.84**	**34840.67**	**44623.65**
Total Area - South of Ballona Channel									
Proposed Project	0.00	24.42	2237.15	0.00	0.00	30.39	0.00	13110.17	15402.13
First Phase	0.00	0.00	19984.23	23.32	0.00	8993.14	4.04	8850.25	37854.98
Off-site	24620.63	0.00	16205.09	6284.17	0.00	2276.17	19536.10	48843.01	117766.18
Total	24620.63	24.42	38427.47	6307.50	0.00	11299.70	19540.15	70803.44	171023.30

TABLE F-21b

SUMMARY OF TOTAL SUSPENDED SOLIDS LOADS REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TSS Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Riparian Corridor Tributary Area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (Lincoln Blvd Bioswale)	0.00	0.00	0.00	-211.61	0.00	0.00	0.00	0.00	-211.61
Subtotal	0.00	0.00	0.00	-211.61	0.00	0.00	0.00	0.00	-211.61
Jefferson Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (CDS Unit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-21b

SUMMARY OF TOTAL SUSPENDED SOLIDS LOADS REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TSS Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ballona Wetlands									
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal									
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-21a

SUMMARY OF TOTAL SUSPENDED SOLIDS RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TSS Loads
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	2,237.15	0.00	0.00	0.00	0.00	7,826.40	**10063.54**
First Phase	0.00	0.00	10,242.27	0.00	0.00	0.00	0.00	1,080.58	**11322.85**
Off-site	22.56	0.00	9,963.52	37.48	0.00	0.00	4,978.78	6,755.74	**21758.08**
Subtotal	**22.56**	**0.00**	**22442.95**	**37.48**	**0.00**	**0.00**	**4978.78**	**15662.72**	**43144.48**
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	2,138.51	0.00	0.00	2,540.15	0.00	2,531.28	**7209.94**
Off-site	0.00	0.00	2,574.51	0.00	0.00	0.00	1,270.88	0.00	**3845.39**
Subtotal	**0.00**	**0.00**	**4713.02**	**0.00**	**0.00**	**2540.15**	**1270.88**	**2531.28**	**11055.33**
Total Riparian Corridor Tributary Area	**22.56**	**0.00**	**27155.96**	**37.48**	**0.00**	**2540.15**	**6249.66**	**18194.00**	**54199.81**
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5,283.77	**5283.77**
First Phase	0.00	0.00	5,462.07	0.00	0.00	4,869.97	0.00	1,863.36	**12195.40**
Off-site	3.76	0.00	0.00	678.81	0.00	0.00	0.00	0.00	**682.57**
Subtotal	**3.76**	**0.00**	**5462.07**	**678.81**	**0.00**	**4869.97**	**0.00**	**7147.14**	**18161.74**
Jefferson Storm Drain									
Proposed Project	0.00	24.42	0.00	0.00	0.00	30.39	0.00	0.00	**54.81**
First Phase	0.00	0.00	2,141.37	0.00	0.00	1,583.02	0.00	260.93	**3985.32**
Off-site	24,594.31	0.00	1,692.51	3,391.54	0.00	780.86	3,773.82	87.92	**34320.97**
Subtotal	**24594.31**	**24.42**	**3833.88**	**3391.54**	**0.00**	**2394.27**	**3773.82**	**348.85**	**38361.10**
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.03	**34.03**
Off-site	0.00	0.00	548.92	514.73	0.00	599.49	3,011.78	0.00	**4674.91**
Subtotal	**0.00**	**0.00**	**548.92**	**514.73**	**0.00**	**599.49**	**3011.78**	**34.03**	**4708.95**
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	23.32	0.00	0.00	4.04	3,080.07	**3107.44**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**23.32**	**0.00**	**0.00**	**4.04**	**3080.07**	**3107.44**
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	24.42	2,237.15	0.00	0.00	30.39	0.00	13,110.17	**15402.13**
First Phase	0.00	0.00	19,984.23	23.32	0.00	8,993.14	4.04	8,850.25	**37854.98**
Off-site	24,620.63	0.00	14,779.47	4,622.55	0.00	1,380.35	13,035.26	6,843.67	**65281.92**
Total	**24620.63**	**24.42**	**37000.84**	**4645.87**	**0.00**	**10403.88**	**13039.30**	**28804.09**	**118539.04**

TABLE F-22a

SUMMARY OF TOTAL PHOSPHORUS RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TP Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	13.21	0.00	0.00	0.00	0.00	4.33	17.54
First Phase	0.00	0.00	60.47	0.00	0.00	0.00	0.00	0.60	61.07
Off-site	0.04	0.00	58.83	0.28	0.00	0.00	29.22	3.74	92.11
Subtotal	0.04	0.00	132.51	0.28	0.00	0.00	29.22	8.68	170.72
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	12.53	0.00	0.00	14.91	0.00	1.40	28.94
Off-site	0.00	0.00	15.20	0.00	0.00	0.00	7.46	0.00	22.66
Subtotal	0.00	0.00	27.83	0.00	0.00	14.91	7.46	1.40	51.60
Total Riparian Corridor Tributary Area	0.04	0.00	160.34	0.28	0.00	14.91	36.68	10.08	222.32
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.93	2.93
First Phase	0.00	0.00	32.25	0.00	0.00	28.58	0.00	1.03	61.86
Off-site	0.01	0.00	0.00	5.09	0.00	0.00	0.00	0.00	5.10
Subtotal	0.01	0.00	32.25	5.09	0.00	28.58	0.00	3.96	69.89
Jefferson Storm Drain									
Proposed Project	0.00	0.14	0.00	0.00	0.00	0.18	0.00	0.00	0.32
First Phase	0.00	0.00	12.64	0.00	0.00	9.29	0.00	0.14	22.08
Off-site	42.62	0.00	9.99	25.43	0.00	4.58	22.15	0.05	104.83
Subtotal	42.62	0.14	22.64	25.43	0.00	14.05	22.15	0.19	127.23
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
Off-site	0.00	0.00	3.24	3.86	0.00	3.52	17.58	0.00	28.30
Subtotal	0.00	0.00	3.24	3.86	0.00	3.52	17.58	0.02	28.31
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.17	0.00	0.00	0.02	1.71	1.90
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.17	0.00	0.00	0.02	1.71	1.90
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.14	13.21	0.00	0.00	0.18	0.00	7.26	20.79
First Phase	0.00	0.00	117.99	0.17	0.00	52.78	0.02	4.90	175.87
Off-site	42.67	0.00	87.26	34.66	0.00	8.10	76.50	3.79	252.99
Total	42.67	0.14	218.46	34.84	0.00	61.06	76.53	15.95	449.66

TABLE F-22a

SUMMARY OF TOTAL PHOSPHORUS RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TP Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	5.27	0.00	0.00	0.00	3.97	9.23
Subtotal	0.00	0.00	0.00	5.27	0.00	0.00	0.00	3.97	9.23
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	5.27	0.00	0.00	0.00	3.97	9.23
Total	0.00	0.00	0.00	5.27	0.00	0.00	0.00	3.97	9.23
Ballona Wetlands									
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	1.38	0.00	0.00	6.92	6.65	14.94
Subtotal	0.00	0.00	0.00	1.38	0.00	0.00	6.92	6.65	14.94
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	2.98	2.17	0.00	5.25	30.00	3.35	43.75
Subtotal	0.00	0.00	2.98	2.17	0.00	5.25	30.00	3.35	43.75
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	5.44	3.64	0.00	0.00	1.24	9.30	19.63
Subtotal	0.00	0.00	5.44	3.64	0.00	0.00	1.24	9.30	19.63
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	8.42	7.20	0.00	5.26	38.15	19.30	78.33
Total	0.00	0.00	8.42	7.20	0.00	5.26	38.15	19.30	78.33
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.14	13.21	0.00	0.00	0.18	0.00	7.26	20.79
First Phase	0.00	0.00	117.99	0.17	0.00	52.78	0.02	4.90	175.87
Off-site	42.67	0.00	95.68	47.12	0.00	13.36	114.66	27.05	340.55

TABLE F-22a

SUMMARY OF TOTAL PHOSPHORUS RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TP Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.36	0.24	
Total	42.67	0.14	226.89	47.30	0.00	66.32	114.68	39.22	537.22

TABLE F-22b

SUMMARY OF TOTAL PHOSPHORUS REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TP Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Riparian Corridor Tributary Area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (Lincoln Blvd. Bioswales)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jefferson Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (CDS Unit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-22b

SUMMARY OF TOTAL PHOSPHORUS REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TP Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ballona Wetlands									
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-22b

SUMMARY OF TOTAL PHOSPHORUS REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TP Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-23a

SUMMARY OF TOTAL KJELDAHL NITROGEN RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	102.97	0.00	0.00	0.00	0.00	34.15	137.12
First Phase	0.00	0.00	471.41	0.00	0.00	0.00	0.00	4.71	476.13
Off-site	0.29	0.00	458.58	1.00	0.00	0.00	223.67	29.48	713.02
Subtotal	0.29	0.00	1032.96	1.00	0.00	0.00	223.67	68.34	1326.27
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	98.43	0.00	0.00	114.12	0.00	11.04	223.59
Off-site	0.00	0.00	118.49	0.00	0.00	0.00	57.09	0.00	175.59
Subtotal	0.00	0.00	216.92	0.00	0.00	114.12	57.09	11.04	399.18
Total Riparian Corridor Tributary Area	0.29	0.00	1249.89	1.00	0.00	114.12	280.77	79.39	1725.45
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.05	23.05
First Phase	0.00	0.00	251.40	0.00	0.00	218.78	0.00	8.13	478.31
Off-site	0.05	0.00	0.00	18.14	0.00	0.00	0.00	0.00	18.19
Subtotal	0.05	0.00	251.40	18.14	0.00	218.78	0.00	31.18	519.55
Jefferson Storm Drain									
Proposed Project	0.00	1.11	0.00	0.00	0.00	1.37	0.00	0.00	2.48
First Phase	0.00	0.00	98.56	0.00	0.00	71.12	0.00	1.14	170.82
Off-site	315.85	0.00	77.90	90.62	0.00	35.08	169.54	0.38	689.37
Subtotal	315.85	1.11	176.46	90.62	0.00	107.56	169.54	1.52	862.67
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15
Off-site	0.00	0.00	25.26	13.75	0.00	26.93	135.30	0.00	201.26
Subtotal	0.00	0.00	25.26	13.75	0.00	26.93	135.30	0.15	201.40
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.62	0.00	0.00	0.18	13.44	14.24
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.62	0.00	0.00	0.18	13.44	14.24
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	1.11	102.97	0.00	0.00	1.37	0.00	57.20	162.65
First Phase	0.00	0.00	919.80	0.62	0.00	404.02	0.18	38.62	1363.24
Off-site	316.19	0.00	680.24	123.52	0.00	62.01	585.61	29.86	1797.43
Total	316.19	1.11	1703.01	124.14	0.00	467.40	585.79	125.68	3323.32

TABLE F-23a

SUMMARY OF TOTAL KJELDAHL NITROGEN RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	18.76	0.00	0.00	0.00	31.23	50.00
Subtotal	0.00	0.00	0.00	18.76	0.00	0.00	0.00	31.23	50.00
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	18.76	0.00	0.00	0.00	31.23	50.00
Total	0.00	0.00	0.00	18.76	0.00	0.00	0.00	31.23	50.00
Ballona Wetlands									
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	4.92	0.00	0.00	52.93	52.38	110.23
Subtotal	0.00	0.00	0.00	4.92	0.00	0.00	52.93	52.38	110.23
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	23.23	7.74	0.00	40.21	229.61	26.40	327.19
Subtotal	0.00	0.00	23.23	7.74	0.00	40.21	229.61	26.40	327.19
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	42.44	12.97	0.00	0.04	9.50	73.25	138.20
Subtotal	0.00	0.00	42.44	12.97	0.00	0.04	9.50	73.25	138.20
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	65.66	25.64	0.00	40.25	292.05	152.02	575.62
Total	0.00	0.00	65.66	25.64	0.00	40.25	292.05	152.02	575.62
Total Area - South of Ballona Channel									
Proposed Project	0.00	1.11	102.97	0.00	0.00	1.37	0.00	57.20	162.65
First Phase	0.00	0.00	919.80	0.62	0.00	404.02	0.18	38.62	1363.24
Off-site	316.19	0.00	745.90	167.92	0.00	102.26	877.66	213.12	2423.04

TABLE F-23a

SUMMARY OF TOTAL KJELDAHL NITROGEN RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Total	316.19	1.11	1768.67	168.54	0.00	507.64	877.85	308.93	3948.93

TABLE F-23b

SUMMARY OF TOTAL KJELDAHL NITROGEN REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Riparian Corridor Tributary Area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (Lincoln Blvd. Bioswales)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jefferson Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (CDS Unit)	0.00	0.00	-6.91	0.00	0.00	0.00	0.00	0.00	-6.91
Subtotal	0.00	0.00	-6.91	0.00	0.00	0.00	0.00	0.00	-6.91
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-23b

SUMMARY OF TOTAL KJELDAHL NITROGEN REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ballona Wetlands									
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal									
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-23b

SUMMARY OF TOTAL KJELDAHL NITROGEN REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-24a

SUMMARY OF OIL AND GREASE RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	O&G Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	108.42	0.00	0.00	0.00	0.00	0.00	108.42
First Phase	0.00	0.00	496.40	0.00	0.00	0.00	0.00	0.00	496.40
Off-site	0.22	0.00	482.89	2.95	0.00	0.00	160.67	0.00	646.72
Subtotal	0.22	0.00	1087.71	2.95	0.00	0.00	160.67	0.00	1251.55
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	103.64	0.00	0.00	81.97	0.00	0.00	185.62
Off-site	0.00	0.00	124.78	0.00	0.00	0.00	41.01	0.00	165.79
Subtotal	0.00	0.00	228.42	0.00	0.00	81.97	41.01	0.00	351.40
Total Riparian Corridor Tributary Area	0.22	0.00	1316.13	2.95	0.00	81.97	201.68	0.00	1602.95
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	264.72	0.00	0.00	157.16	0.00	0.00	421.88
Off-site	0.04	0.00	0.00	53.41	0.00	0.00	0.00	0.00	53.44
Subtotal	0.04	0.00	264.72	53.41	0.00	157.16	0.00	0.00	475.32
Jefferson Storm Drain									
Proposed Project	0.00	1.04	0.00	0.00	0.00	0.98	0.00	0.00	2.02
First Phase	0.00	0.00	103.78	0.00	0.00	51.09	0.00	0.00	154.87
Off-site	235.09	0.00	82.03	266.83	0.00	25.20	121.78	0.00	730.94
Subtotal	235.09	1.04	185.81	266.83	0.00	77.26	121.78	0.00	887.82
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	26.60	40.50	0.00	19.35	97.19	0.00	183.64
Subtotal	0.00	0.00	26.60	40.50	0.00	19.35	97.19	0.00	183.64
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	1.83	0.00	0.00	0.13	0.00	1.97
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	1.83	0.00	0.00	0.13	0.00	1.97
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	1.04	108.42	0.00	0.00	0.98	0.00	0.00	110.44
First Phase	0.00	0.00	968.55	1.83	0.00	290.22	0.13	0.00	1260.73
Off-site	235.34	0.00	716.30	363.69	0.00	44.54	420.66	0.00	1780.53
Total	235.34	1.04	1793.27	365.52	0.00	335.74	420.79	0.00	3151.70

TABLE F-24a

SUMMARY OF OIL AND GREASE RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	O&G Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	55.24	0.00	0.00	0.00	0.00	55.24
Subtotal	0.00	0.00	0.00	55.24	0.00	0.00	0.00	0.00	55.24
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	55.24	0.00	0.00	0.00	0.00	55.24
Total	0.00	0.00	0.00	55.24	0.00	0.00	0.00	0.00	55.24
Ballona Wetlands									
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	14.48	0.00	0.00	38.02	0.00	52.51
Subtotal	0.00	0.00	0.00	14.48	0.00	0.00	38.02	0.00	52.51
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	24.46	22.80	0.00	28.88	164.94	0.00	241.08
Subtotal	0.00	0.00	24.46	22.80	0.00	28.88	164.94	0.00	241.08
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	44.69	38.20	0.00	0.03	6.83	0.00	89.74
Subtotal	0.00	0.00	44.69	38.20	0.00	0.03	6.83	0.00	89.74
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	69.14	75.49	0.00	28.91	209.79	0.00	383.33
Total	0.00	0.00	69.14	75.49	0.00	28.91	209.79	0.00	383.33
Total Area - South of Ballona Channel									
Proposed Project	0.00	1.04	108.42	0.00	0.00	0.98	0.00	0.00	110.44
First Phase	0.00	0.00	968.55	1.83	0.00	290.22	0.13	0.00	1260.73
Off-site	235.34	0.00	785.44	494.42	0.00	73.45	630.45	0.00	2219.10

TABLE F-24a

SUMMARY OF OIL AND GREASE RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								O&G Loads Subtotals
	0.80	0.80	0.80	0.80	0.80	0.60	0.38	0.24	
Total	235.34	1.04	1862.42	496.25	0.00	364.65	630.58	0.00	3590.27

TABLE F-24b

SUMMARY OF OIL AND GREASE REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								OG Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Riparian Corridor Tributary Area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (Jefferson Bioswales)	0.00	0.00	0.00	-7.19	0.00	0.00	0.00	0.00	-7.19
Subtotal	0.00	0.00	0.00	-7.19	0.00	0.00	0.00	0.00	-7.19
Jefferson Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (CDS Unit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-24b

SUMMARY OF OIL AND GREASE REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								OG Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ballona Wetlands									
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal									
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-24b

SUMMARY OF OIL AND GREASE REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	OG Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-25a

SUMMARY OF TOTAL COPPER RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TCu Loads Subtotals
Runoff Coefficients	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	1.15	0.00	0.00	0.00	0.00	0.31	1.46
First Phase	0.00	0.00	5.27	0.00	0.00	0.00	0.00	0.04	5.31
Off-site	0.00	0.00	5.12	0.03	0.00	0.00	1.37	0.27	6.80
Subtotal	0.00	0.00	11.54	0.03	0.00	0.00	1.37	0.62	13.57
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	1.10	0.00	0.00	0.70	0.00	0.10	1.90
Off-site	0.00	0.00	1.32	0.00	0.00	0.00	0.35	0.00	1.67
Subtotal	0.00	0.00	2.42	0.00	0.00	0.70	0.35	0.10	3.57
Total Riparian Corridor Tributary Area	0.00	0.00	13.96	0.03	0.00	0.70	1.72	0.72	17.14
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21
First Phase	0.00	0.00	2.81	0.00	0.00	1.34	0.00	0.07	4.22
Off-site	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.59
Subtotal	0.00	0.00	2.81	0.58	0.00	1.34	0.00	0.28	5.02
Jefferson Storm Drain									
Proposed Project	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.02
First Phase	0.00	0.00	1.10	0.00	0.00	0.44	0.00	0.01	1.55
Off-site	3.85	0.00	0.87	2.92	0.00	0.22	1.04	0.00	8.90
Subtotal	3.85	0.01	1.97	2.92	0.00	0.66	1.04	0.01	10.46
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.28	0.44	0.00	0.17	0.83	0.00	1.72
Subtotal	0.00	0.00	0.28	0.44	0.00	0.17	0.83	0.00	1.72
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.12	0.14
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.12	0.14
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.01	1.15	0.00	0.00	0.01	0.00	0.52	1.69
First Phase	0.00	0.00	10.27	0.02	0.00	2.48	0.00	0.35	13.12
Off-site	3.85	0.00	7.60	3.98	0.00	0.38	3.59	0.27	19.67
Total	3.85	0.01	19.02	4.00	0.00	2.86	3.59	1.14	34.49

TABLE F-25a

SUMMARY OF TOTAL COPPER RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TCu Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.28	0.89
Subtotal	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.28	0.89
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	7,158.48	0.89
Total	0.00	0.00	0.00	702.13	0.00	0.00	0.00	7158.48	0.89
Ballona Wetlands									
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.16	0.00	0.00	0.32	0.48	0.96
Subtotal	0.00	0.00	0.00	0.16	0.00	0.00	0.32	0.48	0.96
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.26	0.25	0.00	0.25	1.41	0.24	2.40
Subtotal	0.00	0.00	0.26	0.25	0.00	0.25	1.41	0.24	2.40
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.47	0.42	0.00	0.00	0.06	0.67	1.52
Subtotal	0.00	0.00	0.47	0.42	0.00	0.00	0.06	0.67	1.52
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.73	0.83	0.00	0.25	1.79	1.38	4.98
Total	0.00	0.00	0.73	0.83	0.00	0.25	1.79	1.38	4.98
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.01	1.15	0.00	0.00	0.01	0.00	0.52	1.69
First Phase	0.00	0.00	10.27	0.02	0.00	2.48	0.00	0.35	13.12
Off-site	3.85	0.00	8.33	706.94	0.00	0.63	5.38	7160.13	25.54

TABLE F-25a

SUMMARY OF TOTAL COPPER RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TCu Loads Subtotals
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Total	3.85	0.01	19.76	706.96	0.00	3.11	5.38	7161.00	40.35

TABLE F-25b

SUMMARY OF TOTAL COPPER LOADS REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TCu Loads
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**0.00**	0.00	0.00	0.00	**0.00**	**0.00**	**0.00**	0.00
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	0.00	**0.00**	**0.00**	0.00	**0.00**	**0.00**	**0.00**	**0.00**
Total Riparian Corridor Tributary Area	**0.00**	0.00	**0.00**	**0.00**	0.00	**0.00**	**0.00**	**0.00**	0.00
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (Jefferson Bioswales)	0.00	0.00	0.00	-0.42	0.00	0.00	0.00	0.00	-0.42
Subtotal	**0.00**	**0.00**	**0.00**	**-0.42**	**0.00**	0.00	0.00	0.00	-0.42
Jefferson Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	**0.00**	0.00	**0.00**	**0.00**	0.00	**0.00**	0.00	**0.00**
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (CDS Unit)	0.00	0.00	-0.17	-0.26	0.00	0.00	0.00	0.00	-0.43
Subtotal	**0.00**	**0.00**	-0.17	**-0.26**	0.00	0.00	**0.00**	**0.00**	**-0.43**
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00

TABLE F-25b

SUMMARY OF TOTAL COPPER LOADS REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TCu Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ballona Wetlands									
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal									
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-25b

SUMMARY OF TOTAL COPPER LOADS REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TCu Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-26a

SUMMARY OF TOTAL LEAD RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TPb Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.11	0.80
First Phase	0.00	0.00	3.15	0.00	0.00	0.00	0.00	0.02	3.17
Off-site	0.00	0.00	3.07	0.00	0.00	0.00	0.40	0.10	3.57
Subtotal	0.00	0.00	6.91	0.00	0.00	0.00	0.40	0.22	7.54
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.66	0.00	0.00	0.21	0.00	0.04	0.90
Off-site	0.00	0.00	0.79	0.00	0.00	0.00	0.10	0.00	0.89
Subtotal	0.00	0.00	1.45	0.00	0.00	0.21	0.10	0.04	1.79
Total Riparian Corridor Tributary Area	0.00	0.00	8.36	0.00	0.00	0.21	0.50	0.26	9.33
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08
First Phase	0.00	0.00	1.68	0.00	0.00	0.39	0.00	0.03	2.10
Off-site	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.06
Subtotal	0.00	0.00	1.68	0.06	0.00	0.39	0.00	0.10	2.24
Jefferson Storm Drain									
Proposed Project	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
First Phase	0.00	0.00	0.66	0.00	0.00	0.13	0.00	0.00	0.79
Off-site	2.51	0.00	0.52	0.30	0.00	0.06	0.30	0.00	3.70
Subtotal	2.51	0.01	1.18	0.30	0.00	0.19	0.30	0.01	4.50
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.17	0.05	0.00	0.05	0.24	0.00	0.51
Subtotal	0.00	0.00	0.17	0.05	0.00	0.05	0.24	0.00	0.51
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.05
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.05
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.01	0.69	0.00	0.00	0.00	0.00	0.19	0.88
First Phase	0.00	0.00	6.15	0.00	0.00	0.73	0.00	0.13	7.01
Off-site	2.51	0.00	4.55	0.41	0.00	0.11	1.05	0.10	8.74
Total	2.51	0.01	11.39	0.41	0.00	0.84	1.05	0.41	16.63

TABLE F-26a

SUMMARY OF TOTAL LEAD RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TPb Loads
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.10	0.17
Subtotal	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.10	0.17
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	7,158.48	0.17
Total	0.00	0.00	0.00	702.13	0.00	0.00	0.00	7158.48	0.17
Ballona Wetlands									
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.02	0.00	0.00	0.10	0.17	0.28
Subtotal	0.00	0.00	0.00	0.02	0.00	0.00	0.10	0.17	0.28
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.16	0.03	0.00	0.07	0.41	0.09	0.75
Subtotal	0.00	0.00	0.16	0.03	0.00	0.07	0.41	0.09	0.75
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.28	0.04	0.00	0.00	0.02	0.24	0.59
Subtotal	0.00	0.00	0.28	0.04	0.00	0.00	0.02	0.24	0.59
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.44	0.09	0.00	0.07	0.52	0.50	1.62
Total	0.00	0.00	0.44	0.09	0.00	0.07	0.52	0.50	1.62
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.01	0.69	0.00	0.00	0.00	0.00	0.19	0.88
First Phase	0.00	0.00	6.15	0.00	0.00	0.73	0.00	0.13	7.01
Off-site	2.51	0.00	4.99	702.63	0.00	0.18	1.58	7159.08	10.52

TABLE F-26a

SUMMARY OF TOTAL LEAD RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TPb Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Total	2.51	0.01	11.82	702.63	0.00	0.91	1.58	7159.39	18.41

TABLE F-26b

SUMMARY OF TOTAL LEAD REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TPb Loads
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Riparian Corridor Tributary Area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (Jefferson Bioswales)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jefferson Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (CDS Unit)	0.00	0.00	-0.06	0.00	0.00	0.00	0.00	0.00	-0.06
Subtotal	0.00	0.00	-0.06	0.00	0.00	0.00	0.00	0.00	-0.06
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-26b

SUMMARY OF TOTAL LEAD REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TPb Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ballona Wetlands									
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal									
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-26b

SUMMARY OF TOTAL LEAD REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial /Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TPb Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE F-27a

SUMMARY OF TOTAL ZINC RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TZn Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	7.89	0.00	0.00	0.00	0.00	0.77	8.66
First Phase	0.00	0.00	36.13	0.00	0.00	0.00	0.00	0.11	36.23
Off-site	0.04	0.00	35.14	0.16	0.00	0.00	11.95	0.66	47.96
Subtotal	0.04	0.00	79.16	0.16	0.00	0.00	11.95	1.54	92.85
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	7.54	0.00	0.00	6.09	0.00	0.25	13.89
Off-site	0.00	0.00	9.08	0.00	0.00	0.00	3.05	0.00	12.13
Subtotal	0.00	0.00	16.62	0.00	0.00	6.09	3.05	0.25	26.02
Total Riparian Corridor Tributary Area	0.04	0.00	95.79	0.16	0.00	6.09	15.00	1.79	118.87
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.52
First Phase	0.00	0.00	19.27	0.00	0.00	11.69	0.00	0.18	31.13
Off-site	0.01	0.00	0.00	2.98	0.00	0.00	0.00	0.00	2.99
Subtotal	0.01	0.00	19.27	2.98	0.00	11.69	0.00	0.70	34.64
Jefferson Storm Drain									
Proposed Project	0.00	0.08	0.00	0.00	0.00	0.07	0.00	0.00	0.15
First Phase	0.00	0.00	7.55	0.00	0.00	3.80	0.00	0.03	11.38
Off-site	46.32	0.00	5.97	14.90	0.00	1.87	9.05	0.01	78.12
Subtotal	46.32	0.08	13.52	14.90	0.00	5.74	9.05	0.03	89.65
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	1.94	2.26	0.00	1.44	7.23	0.00	12.86
Subtotal	0.00	0.00	1.94	2.26	0.00	1.44	7.23	0.00	12.87
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.10	0.00	0.00	0.01	0.30	0.41
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.10	0.00	0.00	0.01	0.30	0.41
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.08	7.89	0.00	0.00	0.07	0.00	1.29	9.33
First Phase	0.00	0.00	70.49	0.10	0.00	21.58	0.01	0.87	93.05
Off-site	46.36	0.00	52.13	20.30	0.00	3.31	31.28	0.67	154.06

TABLE F-27a

SUMMARY OF TOTAL ZINC RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TZn Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Total	46.36	0.08	130.51	20.41	0.00	24.96	31.29	2.83	256.44

TABLE F-27a

SUMMARY OF TOTAL ZINC RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TZn Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	3.08	0.00	0.00	0.00	0.70	3.79
Subtotal	0.00	0.00	0.00	3.08	0.00	0.00	0.00	0.70	3.79
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	3.08	0.00	0.00	0.00	0.70	3.79
Total	0.00	0.00	0.00	3.08	0.00	0.00	0.00	0.70	3.79
Ballona Wetlands									
East Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.81	0.00	0.00	2.83	1.18	4.81
Subtotal	0.00	0.00	0.00	0.81	0.00	0.00	2.83	1.18	4.81
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	1.78	1.27	0.00	2.15	12.26	0.59	18.06
Subtotal	0.00	0.00	1.78	1.27	0.00	2.15	12.26	0.59	18.06
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	3.25	2.13	0.00	0.00	0.51	1.65	7.54
Subtotal	0.00	0.00	3.25	2.13	0.00	0.00	0.51	1.65	7.54
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	5.03	4.21	0.00	2.15	15.60	3.42	30.41
Total	0.00	0.00	5.03	4.21	0.00	2.15	15.60	3.42	30.41
Total Area - South of Ballona Channel									

TABLE F-27a

SUMMARY OF TOTAL ZINC RUNOFF LOADS (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TZn Loads Subtotals
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Proposed Project	0.00	0.08	7.89	0.00	0.00	0.07	0.00	1.29	9.33
First Phase	0.00	0.00	70.49	0.10	0.00	21.58	0.01	0.87	93.05
Off-site	46.36	0.00	57.16	27.60	0.00	5.46	46.88	4.79	188.26
Total	46.36	0.08	135.54	27.71	0.00	27.11	46.89	6.95	290.64

TABLE F-27b

SUMMARY OF TOTAL ZINC REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients								TZn Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Riparian Corridor at Lincoln									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Riparian Corridor Tributary Area	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00
Central Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (Jefferson Bioswales)	0.00	0.00	0.00	-2.28	0.00	0.00	0.00	0.00	**-2.28**
Subtotal	**0.00**	**0.00**	**0.00**	**-2.28**	**0.00**	**0.00**	**0.00**	**0.00**	**-2.28**
Jefferson Storm Drain									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (CDS Unit)	0.00	0.00	-1.17	-1.03	0.00	-0.04	-0.21	0.00	**-2.45**
Subtotal	**0.00**	**0.00**	**-1.17**	**-1.03**	**0.00**	**-0.04**	**-0.21**	**0.00**	**-2.45**
Freshwater Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Freshwater Marsh Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-27b

SUMMARY OF TOTAL ZINC REMOVED (LBS.)
PLAYA VISTA - FIRST PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	TZn Loads
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.36	0.24	Subtotals
Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Former Area B Residential									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Ballona Wetlands									
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Subtotal									
South Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
North Wetlands									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Ballona Wetlands Tributary									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - South of Ballona Channel									
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-28

SUMMARY OF ANNUAL LOADS (LBS)
PLAYA VISTA - FIRST PHASE PROJECT

	Loads (lbs.)										
	TSS	Total P	TKN	O&G	Total Cu	Diss. Cu	Total Pb	Diss. Pb	Total Zn	Diss. Zn	Volume (ft³)
Freshwater Marsh											
Upper Riparian Corridor	43,144	171	1,326	1,252	13.6	6.3	7.5	3.4	92.9	55.2	8,611,192
Mass Removed Through WQ Inlets (25% of First Phase)	*-849*	*-2*	*0*	*-25*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.9*	*-0.5*	
Upper Riparian Corridor Influent	42,295	169	1,326	1,227	13.4	6.2	7.4	3.4	91.9	55	8,611,192
Mass Removed in Upper Riparian Corridor	*-28,923*	*-20*	*-526*	*-528*	*-7.3*	*-0.9*	*-2.3*	*-1.0*	*-16.4*	*-35.8*	
Riparian Corridor at Proposed Project Boundary	**13,372**	**150**	**800**	**699**	**6.1**	**5.3**	**5.1**	**2.4**	**75.6**	**18.9**	**8,611,192**
Lower Riparian Corridor	11,055	52	399	351	3.6	1.7	1.8	0.8	26.0	15.5	3,144,959
Mass Removed Through WQ Inlets (25% of First Phase)	*-541*	*-1*	*0*	*-9*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.3*	*-0.2*	
Lower Riparian Corridor Influent	10,515	51	399	342	3.5	1.6	1.8	0.8	25.7	15	
Mass Removed in Lower Riparian Corridor	*-5,631*	*0*	*-107*	*-87*	*-1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*-8.4*	
Riparian Corridor at Lincoln	**18,258**	**200**	**1,092**	**954**	**8.4**	**7.0**	**6.9**	**3.2**	**101.2**	**25.9**	**11,756,152**
Central Storm Drain	17,950	70	520	468	5	2	2	1	32	19	4,018,581
Mass Removed Through WQ Inlets (25% of First Phase)	*-1,311*	*-2*	*0*	*-21*	*-0.1*	*-0.1*	*-0.1*	*0.0*	*-0.8*	*0*	
Influent to Central Storm Drain Pretreatment Area	16,639	68	520	447	4.5	2.1	2.2	1.0	31.6	18.8	
Jefferson Storm Drain	38,361	127	863	888	10.5	4.9	4.5	2.1	89.6	53.3	6,987,025
Mass Removed Through WQ Inlets (25% of First Phase)	*-299*	*-1*	*0*	*-8*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.3*	*0*	
Influent to Jefferson Storm Drain Pretreatment Area	38,062	127	863	880	10.4	4.8	4.5	2.0	89.4	53.2	
Total Playa Vista Area	**72,957**	**395**	**2,475**	**2,281**	**23**	**14**	**14**	**6**	**222**	**98**	**22,761,757**
Lincoln Storm Drain - South	4,709	28	201	184	1.7	0.8	0.5	0.2	12.9	7.7	1,777,701
Influent to RC and Lincoln Pretreatment Area	22,965	229	1,294	1,138	10.1	7.8	7.4	3.4	114.1	33.5	13,533,852
Freshwater Marsh Pretreatment Areas	**77,666**	**424**	**2,676**	**2,465**	**25**	**15**	**14**	**6**	**235**	**105**	**24,539,458**
Total Mass Removed in Pretreatment Areas	*-31,533*	*-108*	*-687*	*-528*	*-7.6*	*-3.6*	*-3.4*	*-1.1*	*-100.1*	*-46.2*	
Riparian Corridor/Lincoln Storm Drain PMA	**20,634**	**214**	**1,204**	**1,077**	**8.9**	**7.1**	**6.9**	**3.2**	**99.6**	**28.5**	**13,533,852**
Central Storm Drain PMA	**14,950**	**64**	**486**	**423**	**4.1**	**2.0**	**2.0**	**0.9**	**28.2**	**16.7**	**4,018,581**
Jefferson Storm Drain PMA	**34,199**	**119**	**807**	**833**	**9.6**	**4.5**	**4.2**	**2.0**	**79.7**	**47.3**	**6,987,025**
Effluent from Central Storm Drain Pretreatment Area	9,883	51	386	351	3.1	1.6	1.6	0.8	18.0	10.4	4,018,581
Effluent from Jefferson Storm Drain Pretreatment Area	22,608	94	641	691	7.2	3.6	3.4	1.7	50.9	29.5	6,987,025
Effluent from RC and Lincoln Pretreatment Area	13,641	170	956	894	6.7	5.7	5.6	2.8	63.6	17.8	13,533,852
Direct to Freshwater Marsh	3,107	2	14	2	0.1	0.1	0.0	0.0	0.4	0.2	560,173
Main Body of Freshwater Marsh	**49,240**	**317**	**1,996**	**1,939**	**17.1**	**10.9**	**10.8**	**5.3**	**132.9**	**58.0**	**25,099,631**
Mass Removed in Main Body of Marsh	*-31,533*	*-108*	*-687*	*-528*	*-7.6*	*-3.6*	*-3.4*	*-1.1*	*-100.1*	*-46.2*	
Freshwater Marsh Effluent	**17,707**	**208.7**	**1,309.4**	**1,410.2**	**9.4**	**7.3**	**7.2**	**4.2**	**32.7**	**11.8**	**25,099,631**
Ballona Wetlands											
Freshwater Marsh Effluent (8% Overflow)	1,416.6	16.7	104.8	112.8	0.8	0.6	0.6	0.3	2.6	0.9	2,007,970
East Wetlands	13,366	15	110	53	1.0	0.4	0.3	0.1	4.8	2.9	1,433,719
South Wetlands	12,850	44	327	241	2.4	1.1	0.8	0.3	18.1	10.7	3,113,113
North Wetlands	18,407	20	138	90	1.6	0.8	0.6	0.3	7.5	4.5	1,800,988
Off-site Stormwater Runoff Direct to Wetlands	44,624	78	576	383	5.0	2.3	1.6	0.7	30.4	18.1	6,347,820
Total Area - Ballona Wetlands Tributary	**46,040**	**95**	**680**	**496**	**5.7**	**2.9**	**2.2**	**1.1**	**33.0**	**19.0**	**8,355,791**
Mass Removed in Wetlands	*-25,411*	*0*	*0*	*0*	*0.0*	*0.0*	*0.0*	*0.0*	*-13.8*	*-11.1*	
Ballona Wetlands Effluent	**20,630**	**95**	**680**	**496**	**5.7**	**2.9**	**2.2**	**1.1**	**19.2**	**7.9**	**8,355,791**
Ballona Channel											
Freshwater Wetlands System (92% of FWM Effluent)	16,290	192	1,205	1,297	8.7	6.7	6.6	3.9	30.1	10.9	23,091,661
Ballona Wetlands	20,630	95	680	496	5.7	2.9	2.2	1.1	19.2	7.9	8,355,791
Direct to Ballona Channel (Former Area B)	0	0	0	0	0	0	0	0	0	0	0
Total Ballona Channel Influent	**36,920**	**287**	**1,885**	**1,794**	**14.4**	**9.6**	**8.8**	**4.9**	**49.3**	**18.8**	**31,447,451**

TABLE F-29

SUMMARY OF CONCENTRATIONS (MG/L)
PLAYA VISTA - FIRST PHASE PROJECT

	Concentrations										
	(mg/l)				(ug/l)						
	TSS	Total P	TKN	O&G	Total Cu	Diss. Cu	Total Pb	Diss. Pb	Total Zn	Diss. Zn	Volume (ft³)
Freshwater Marsh											
Upper Riparian Corridor Influent (after WQ Inlets)	78.7	0.31	2.5	2.3	25.0	11.6	13.8	6.3	171.0	101.8	8,611,192
% Removed in Upper Riparian Corridor	*68%*	*12%*	*40%*	*43%*	*54%*	*14%*	*31%*	*30%*	*18%*	*65%*	
Riparian Corridor at Proposed Project Boundary	**24.9**	**0.3**	**1.5**	**1.3**	**11.4**	**9.9**	**9.6**	**4.4**	**140.6**	**35.2**	**8,611,192**
Lower Riparian Corridor Influent (after WQ Inlets)	53.6	0.26	2.0	1.7	18.0	8.3	9.0	4.1	130.7	77.8	3,144,959
% Removed in Lower Riparian Corridor	*54%*	*0%*	*27%*	*25%*	*37%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*55%*	
Riparian Corridor at Lincoln	**24.9**	**0.3**	**1.5**	**1.3**	**11.4**	**9.5**	**9.4**	**4.3**	**137.9**	**35.2**	**11,756,152**
Influent to Central Storm Drain Pretreatment Area	66.3	0.27	2.1	1.8	17.9	8.3	8.6	3.9	125.9	74.9	4,018,581
Influent to Jefferson Storm Drain Pretreatment Area	87.3	0.29	2.0	2.0	23.9	11.1	10.3	4.7	204.9	121.9	6,987,025
Total FWM Project Area Tributaries	**51.3**	**0.28**	**1.7**	**1.6**	**16.4**	**9.8**	**9.5**	**4.4**	**156.4**	**68.8**	**22,761,757**
Lincoln Storm Drain - South	42.4	0.26	1.8	1.7	15.5	7.2	4.6	2.1	115.9	69.0	1,777,701
Influent to RC and Lincoln Pretreatment Area	27.2	0.27	1.5	1.3	11.9	9.2	8.8	4.0	135.0	39.7	
Freshwater Marsh Pretreatment Areas	**50.7**	**0.28**	**1.7**	**1.6**	**16.3**	**9.6**	**9.2**	**4.2**	**153.4**	**68.8**	**24,539,458**
% Removed in Pretreatment Areas	*41%*	*26%*	*26%*	*21%*	*31%*	*25%*	*24%*	*17%*	*43%*	*44%*	
Riparian Corridor/Lincoln Storm Drain PMA	**24.4**	**0.25**	**1.4**	**1.3**	**10.5**	**8.4**	**8.2**	**3.8**	**117.9**	**33.7**	**13,533,852**
Central Storm Drain PMA	**59.6**	**0.25**	**1.9**	**1.7**	**16.5**	**7.8**	**8.1**	**3.8**	**112.3**	**66.6**	**4,018,581**
Jefferson Storm Drain PMA	**78.4**	**0.27**	**1.9**	**1.9**	**22.0**	**10.4**	**9.6**	**4.5**	**182.8**	**108.4**	**6,987,025**
Effluent from Central Storm Drain Pretreatment Area	39.4	0.20	1.5	1.4	12.3	6.2	6.5	3.2	71.7	41.6	4,018,581
Effluent from Jefferson Storm Drain Pretreatment Area	51.8	0.22	1.5	1.6	16.5	8.3	7.7	3.9	116.7	67.7	6,987,025
Effluent from RC and Lincoln Pretreatment Area	16.1	0.20	1.1	1.1	7.9	6.7	6.8	3.3	75.3	21.1	13,533,852
Direct to Freshwater Marsh	88.9	0.05	0.4	0.1	4.1	1.9	1.3	0.6	11.9	7.1	560,173
Main Body of Freshwater Marsh	**31.4**	**0.20**	**1.3**	**1.2**	**10.9**	**7.0**	**6.8**	**3.4**	**84.8**	**37.0**	**25,099,631**
% Removed in Main Body of Marsh	*64%*	*34%*	*34%*	*27%*	*45%*	*33%*	*32%*	*21%*	*75%*	*80%*	
Freshwater Marsh Effluent	**11.3**	**0.13**	**0.8**	**0.9**	**6.0**	**4.7**	**4.6**	**2.7**	**20.9**	**7.5**	**25,099,631**
Ballona Wetlands											
Freshwater Marsh Effluent (8% Overflow)	11.3	0.13	0.8	0.9	6.0	2.9	4.6	2.7	20.9	6.9	2,007,970
East Wetlands	149.3	0.17	1.2	0.6	10.7	5.0	3.2	1.5	53.8	32.0	1,433,719
South Wetlands	66.1	0.23	1.7	1.2	12.4	5.7	3.9	1.8	92.9	55.3	3,113,113
North Wetlands	163.7	0.17	1.2	0.8	14.4	6.7	5.2	2.4	67.1	39.9	1,800,968
Off-site Stormwater Runoff Direct to Wetlands	112.6	0.20	1.5	1.0	12.6	5.8	4.1	1.9	76.7	45.7	6,347,820
Total Area - Ballona Wetlands Tributary	**88.3**	**0.18**	**1.3**	**1.0**	**11.0**	**5.6**	**4.2**	**2.1**	**63.3**	**36.5**	**8,355,791**
% Removed in Lower Ballona Wetlands	*55%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*42%*	*58%*	
Ballona Wetlands Effluent	**39.5**	**0.18**	**1.3**	**1.0**	**11.0**	**5.6**	**4.2**	**2.1**	**36.9**	**15.2**	**8,355,791**
Ballona Channel											
Freshwater Wetlands System (92% of FWM Effluent)	11.3	0.13	0.8	0.9	6.0	2.9	4.6	2.7	20.9	6.9	23,091,661
Ballona Wetlands	39.5	0.18	1.3	1.0	11.0	5.3	4.2	2.1	36.9	12.1	8,355,791
Total Ballona Channel Influent	**18.8**	**0.15**	**0.96**	**0.91**	**7.34**	**3.52**	**4.49**	**2.52**	**25.13**	**8.3**	**31,447,451**

TABLE F-30

SUMMARY OF RUNOFF FROM TRIBUTARY AREA SOUTH OF BALLONA (FT³)
PLAYA VISTA - South of Ballona - Proposed Project

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	Volume (ft3)
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh									
Riparian Corridor at Proposed Project Boundary									
Proposed Project									
Buildings	0	114,158	0	0	0	244,487	0	0	358,645
Impervious Areas	0	57,079	0	0	0	122,244	0	0	179,323
Pervious Areas	0	19,026	0	0	118,715	40,748	0	145,171	323,660
Roads	0	76,787	0	0	0	168,735	0	0	247,521
Proposed Project Subtotal	0	269,050	0	0	118,715	576,213	0	145,171	1,109,149
First Phase	0	0	2,426,115	0	142,215	0	0	77,405	2,645,735
Off-site	2,032	0	2,360,087	15,237	0	0	1,979,755	483,936	4,841,047
Subtotal	**2,032**	**269,050**	**4,786,201**	**15,237**	**260,930**	**576,213**	**1,979,755**	**706,512**	**8,595,931**
Riparian Corridor at Lincoln									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	506,555	0	331,834	1,010,063	0	181,324	2,029,776
Off-site	0	0	609,830	0	0	0	505,353	0	1,115,183
Subtotal	**0**	**0**	**1,116,385**	**0**	**331,834**	**1,010,063**	**505,353**	**181,324**	**3,144,959**
Total Riparian Corridor Tributary Area	**2,032**	**269,050**	**5,902,587**	**15,237**	**592,764**	**1,586,276**	**2,485,109**	**887,836**	**11,740,891**
Central Storm Drain									
Proposed Project									
Buildings	0	236,006	0	0	0	757,435	0	0	995,442
Impervious Areas	0	119,003	0	0	0	378,718	0	0	497,721
Pervious Areas	0	39,668	0	0	0	125,239	0	39,266	204,173
Roads	0	110,056	0	0	0	350,245	0	0	460,302
Proposed Project Subtotal	0	506,734	0	0	0	1,612,638	0	38,266	2,157,637
First Phase	0	0	1,293,815	0	0	1,936,490	0	133,479	3,363,784
Off-site	339	0	0	275,964	0	0	0	0	276,303
Subtotal	**339**	**506,734**	**1,293,815**	**275,964**	**0**	**3,549,128**	**0**	**171,745**	**5,797,724**
Jefferson Storm Drain									
Proposed Project									
Buildings	0	2,621	0	0	0	4,368	0	0	6,989
Impervious Areas	0	1,310	0	0	0	2,184	0	0	3,494
Pervious Areas	0	437	0	0	0	728	0	0	1,165
Roads	0	2,882	0	0	0	4,804	0	0	7,686
Proposed Project Subtotal	0	7,250	0	0	0	12,084	0	0	19,334
First Phase	0	0	507,232	0	0	629,469	0	18,691	1,155,393
Off-site	2,215,153	0	400,910	1,378,805	0	310,502	1,500,619	6,298	5,812,297
Subtotal	**2,215,153**	**7,250**	**908,142**	**1,378,805**	**0**	**952,055**	**1,500,619**	**24,989**	**6,987,025**
Lincoln Storm Drain - South									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	2,438	2,438
Off-site	0	0	130,025	209,259	0	238,379	1,197,600	0	1,775,263
Subtotal	**0**	**0**	**130,025**	**209,259**	**0**	**238,379**	**1,197,600**	**2,438**	**1,777,701**
Freshwater Wetlands									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	9,481	328,448	0	1,608	220,636	560,173
Off-site	0	0	0	0	0	0	0	0	0
Subtotal	**0**	**0**	**0**	**9,481**	**328,448**	**0**	**1,608**	**220,636**	**560,173**
Total Area - Freshwater Marsh Tributary									
Proposed Project	0	783,034	0	0	118,715	2,200,935	0	183,437	3,286,121
First Phase	0	0	4,733,717	9,481	802,497	3,576,022	1,608	633,973	9,757,299
Off-site	2,217,533	0	3,500,852	1,879,266	0	548,881	5,183,328	490,234	13,820,093
Total	**2,217,533**	**783,034**	**8,234,569**	**1,888,746**	**921,213**	**6,325,838**	**5,184,936**	**1,307,644**	**26,863,513**

TABLE F-30

SUMMARY OF RUNOFF FROM TRIBUTARY AREA SOUTH OF BALLONA (FT)
PLAYA VISTA - South of Ballona - Proposed Project

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	High Density Residential	Low Density Residential	Open Space	Volume (ft3)
	Runoff Coefficients								
	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential (Direct to Ballona Channel)									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	0	285,445	0	0	0	512,786	798,231
Subtotal	0	0	0	285,445	0	0	0	512,786	798,231
Total Area - Former Area B Residential									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	0	285,445	0	0	0	512,786	798,231
Total	0	0	0	285,445	0	0	0	512,786	798,231
Ballona Wetlands									
East Wetlands									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	0	74,832	30,475	0	468,521	859,891	1,433,719
Subtotal	0	0	0	74,832	30,475	0	468,521	859,891	1,433,719
South Wetlands									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	119,528	117,835	54,177	355,675	2,032,349	433,348	3,113,113
Subtotal	0	0	119,528	117,835	54,177	355,675	2,032,349	433,348	3,113,113
North Wetlands									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	218,401	197,408	98,196	339	84,118	1,202,527	1,800,988
Subtotal	0	0	218,401	197,408	98,196	339	84,118	1,202,527	1,800,988
Total Area - Ballona Wetlands Tributary									
Proposed Project	0	0	0	0	0	0	0	0	0
First Phase	0	0	0	0	0	0	0	0	0
Off-site	0	0	337,929	390,075	182,847	356,214	2,584,989	2,495,766	6,347,820
Total	0	0	337,929	390,075	182,847	356,214	2,584,989	2,495,766	6,347,820
Total Area - South of Ballona Channel									
Proposed Project	0	783,034	0	0	118,715	2,200,935	0	183,437	3,286,121
First Phase	0	0	4,733,717	9,481	802,497	3,576,022	1,608	633,973	9,757,299
Off-site	2,217,533	0	3,838,781	2,554,785	182,847	905,095	7,768,316	3,498,786	20,966,144
Total	2,217,533	783,034	8,572,498	2,564,266	1,104,060	6,682,052	7,769,925	4,316,195	34,009,564

TABLE F-31a

SUMMARY OF TOTAL SUSPENDED SOLIDS RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TSS Loads Subtotals
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project	0.00	906.23	0.00	0.00	0.00	0.00	1,449.09	0.00	2,026.58	**4,381.90**
First Phase	0.00	0.00	10,242.27	0.00	0.00	0.00	0.00	0.00	1,080.58	**11,322.85**
Off-site	22.56	0.00	9,963.52	37.48	0.00	0.00	0.00	4,978.78	6,755.74	**21,758.08**
Subtotal	**22.56**	**906.23**	**20,205.80**	**37.48**	**0.00**	**0.00**	**1,449.09**	**4,978.78**	**9,862.90**	**37,462.83**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	2,138.51	0.00	0.00	0.00	2,540.15	0.00	2,531.28	**7,209.94**
Off-site	0.00	0.00	2,574.51	0.00	0.00	0.00	0.00	1,270.88	0.00	**3,845.39**
Subtotal	**0.00**	**0.00**	**4,713.02**	**0.00**	**0.00**	**0.00**	**2,540.15**	**1,270.88**	**2,531.28**	**11,055.33**
Total Riparian Corridor Tributary Area	**22.56**	**906.23**	**24,918.82**	**37.48**	**0.00**	**0.00**	**3,989.24**	**6,249.66**	**12,394.18**	**48,518.16**
Central Storm Drain										
Proposed Project	0.00	1,706.81	0.00	0.00	0.00	0.00	4,055.53	0.00	534.19	**6,296.53**
First Phase	0.00	0.00	5,462.07	0.00	0.00	0.00	4,369.97	0.00	1,863.36	**12,195.40**
Off-site	3.76	0.00	0.00	678.81	0.00	0.00	0.00	0.00	0.00	**682.57**
Subtotal	**3.76**	**1,706.81**	**5,462.07**	**678.81**	**0.00**	**0.00**	**8,925.50**	**0.00**	**2,397.55**	**19,174.50**
Jefferson Storm Drain										
Proposed Project	0.00	24.42	0.00	0.00	0.00	0.00	30.39	0.00	0.00	**54.81**
First Phase	0.00	0.00	2,141.37	0.00	0.00	0.00	1,583.02	0.00	260.93	**3,985.32**
Off-site	24,594.31	0.00	1,692.51	3,391.54	0.00	0.00	780.86	3,773.82	87.92	**34,320.97**
Subtotal	**24,594.31**	**24.42**	**3,833.88**	**3,391.54**	**0.00**	**0.00**	**2,394.27**	**3,773.82**	**348.85**	**38,361.10**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.03	**34.03**
Off-site	0.00	0.00	548.92	514.73	0.00	0.00	599.49	3,011.78	0.00	**4,674.91**
Subtotal	**0.00**	**0.00**	**548.92**	**514.73**	**0.00**	**0.00**	**599.49**	**3,011.78**	**34.03**	**4,708.95**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	23.32	0.00	0.00	0.00	4.04	3,080.07	**3,107.44**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**23.32**	**0.00**	**0.00**	**0.00**	**4.04**	**3,080.07**	**3,107.44**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	2,637.46	0.00	0.00	0.00	0.00	5,535.01	0.00	2,560.77	**10,733.24**
First Phase	0.00	0.00	19,984.23	23.32	0.00	0.00	8,993.14	4.04	8,850.25	**37,854.98**
Off-site	24,620.63	0.00	14,779.47	4,622.55	0.00	0.00	1,380.35	13,035.26	6,843.67	**65,281.92**
Total	**24,620.63**	**2,637.46**	**34,763.69**	**4,645.87**	**0.00**	**0.00**	**15,908.49**	**13,039.30**	**18,254.69**	**113,870.15**

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TSS Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.36	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	0.00	7,158.48	**7,860.61**
Subtotal	**0.00**	**0.00**	**0.00**	**702.13**	**0.00**	**0.00**	**0.00**	**0.00**	**7,158.48**	7,860.61
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	0.00	7,158.48	**7,860.61**
Total	**0.00**	**0.00**	**0.00**	**702.13**	**0.00**	**0.00**	**0.00**	**0.00**	**7,158.48**	7,860.61
Ballona Wetlands										
East Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	184.07	0.00	0.00	0.00	1,178.26	12,004.07	**13,366.39**
Subtotal	**0.00**	**0.00**	**0.00**	**184.07**	**0.00**	**0.00**	**0.00**	**1,178.26**	**12,004.07**	13,366.39
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	504.61	289.85	0.00	0.00	894.97	5,111.04	6,049.54	**12,850.01**
Subtotal	**0.00**	**0.00**	**504.61**	**289.85**	**0.00**	**0.00**	**894.97**	**5,111.04**	**6,049.54**	12,850.01
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	922.02	485.58	0.00	0.00	0.85	211.54	16,787.26	**18,407.25**
Subtotal	**0.00**	**0.00**	**922.02**	**485.58**	**0.00**	**0.00**	**0.85**	**211.54**	**16,787.26**	18,407.25
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	1,426.63	959.49	0.00	0.00	895.82	6,500.84	34,840.87	**44,623.65**
Total	**0.00**	**0.00**	**1,426.63**	**959.49**	**0.00**	**0.00**	**895.82**	**6,500.84**	**34,840.87**	44,623.65
Total Area - South of Ballona Channel										
Proposed Project	**0.00**	**2,637.46**	**0.00**	**0.00**	**0.00**	0.00	**5,535.01**	**0.00**	**2,560.77**	10,733.24
First Phase	**0.00**	**0.00**	**19,984.23**	**23.32**	**0.00**	0.00	**8,993.14**	**4.04**	**8,850.25**	**37,854.98**
Off-site	**24,620.63**	**0.00**	**16,206.09**	**6,284.17**	**0.00**	0.00	**2,276.17**	**19,536.10**	**48,843.01**	**117,766.18**
Total	**24,620.63**	**2,637.46**	**36,190.32**	**6,307.50**	**0.00**	**0.00**	**16,804.32**	**19,540.15**	**60,254.04**	**166,354.41**

TABLE F-31b

SUMMARY OF TOTAL SUSPENDED SOLIDS LOADS REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TSS Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project (Onsite Biofilters)	0.00	-418.86	0.00	0.00	0.00	0.00	-440.09	0.00	0.00	**-858.95**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**-418.86**	**0.00**	**0.00**	**0.00**	**0.00**	**-440.09**	**0.00**	**0.00**	**-858.95**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Riparian Corridor Tributary Area	**0.00**	**-418.86**	**0.00**	**0.00**	**0.00**	**0.00**	**-440.09**	**0.00**	**0.00**	**-858.95**
Central Storm Drain										
Proposed Project (Onsite Biofilters)	0.00	-398.73	0.00	0.00	0.00	0.00	-622.52	0.00	0.00	**-1021.26**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (Lincoln Blvd Bioswales)	0.00	0.00	0.00	-211.61	0.00	0.00	0.00	0.00	0.00	**-211.61**
Subtotal	**0.00**	**-398.73**	**0.00**	**-211.61**	**0.00**	**0.00**	**-622.52**	**0.00**	**0.00**	**-1232.87**
Jefferson Storm Drain										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (CDS Unit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-31b

SUMMARY OF TOTAL SUSPENDED SOLIDS LOADS REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TSS Loads
	0.80	0.60	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Ballona Wetlands										
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00
Subtotal										
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - South of Ballona Channel										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-32a

SUMMARY OF TOTAL PHOSPHORUS RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TP Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project	0.00	5.34	0.00	0.00	0.00	0.00	8.50	0.00	1.12	**14.97**
First Phase	0.00	0.00	60.47	0.00	0.00	0.00	0.00	0.00	0.60	**61.07**
Off-site	0.04	0.00	58.83	0.28	0.00	0.00	0.00	29.22	3.74	**92.11**
Subtotal	**0.04**	**5.34**	**119.30**	**0.28**	**0.00**	**0.00**	**8.50**	**29.22**	**5.46**	**168.15**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	12.63	0.00	0.00	0.00	14.91	0.00	1.40	**28.94**
Off-site	0.00	0.00	15.20	0.00	0.00	0.00	0.00	7.46	0.00	**22.66**
Subtotal	**0.00**	**0.00**	**27.83**	**0.00**	**0.00**	**0.00**	**14.91**	**7.46**	**1.40**	**51.60**
Total Riparian Corridor Tributary Area	**0.04**	**5.34**	**147.13**	**0.28**	**0.00**	**0.00**	**23.41**	**36.68**	**6.87**	**219.74**
Central Storm Drain										
Proposed Project	0.00	10.05	0.00	0.00	0.00	0.00	23.60	0.00	0.30	**34.15**
First Phase	0.00	0.00	32.25	0.00	0.00	0.00	28.58	0.00	1.03	**61.86**
Off-site	0.01	0.00	0.00	5.09	0.00	0.00	0.00	0.00	0.00	**5.10**
Subtotal	**0.01**	**10.05**	**32.25**	**5.09**	**0.00**	**0.00**	**52.38**	**0.00**	**1.33**	**101.11**
Jefferson Storm Drain										
Proposed Project	0.00	0.14	0.00	0.00	0.00	0.00	0.18	0.00	0.00	**0.32**
First Phase	0.00	0.00	12.64	0.00	0.00	0.00	9.29	0.00	0.14	**22.08**
Off-site	42.62	0.00	9.99	25.43	0.00	0.00	4.58	22.15	0.05	**104.83**
Subtotal	**42.62**	**0.14**	**22.64**	**25.43**	**0.00**	**0.00**	**14.05**	**22.15**	**0.19**	**127.23**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	**0.02**
Off-site	0.00	0.00	3.24	3.86	0.00	0.00	3.52	17.68	0.00	**28.30**
Subtotal	**0.00**	**0.00**	**3.24**	**3.86**	**0.00**	**0.00**	**3.52**	**17.68**	**0.02**	**28.31**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.02	1.71	**1.90**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.17**	**0.00**	**0.00**	**0.00**	**0.02**	**1.71**	**1.90**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	15.54	0.00	0.00	0.00	0.00	32.49	0.00	1.42	**49.44**
First Phase	0.00	0.00	117.99	0.17	0.00	0.00	52.78	0.02	4.90	**175.87**
Off-site	42.67	0.00	87.26	34.66	0.00	0.00	8.10	76.50	3.79	**252.99**
Total	**42.67**	**15.54**	**205.25**	**34.84**	**0.00**	**0.00**	**93.37**	**76.53**	**10.11**	**478.31**

TABLE F-32a

SUMMARY OF TOTAL PHOSPHORUS RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TP Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	5.27	0.00	0.00	0.00	0.00	3.97	9.23
Subtotal	**0.00**	**0.00**	**0.00**	**5.27**	**0.00**	**0.00**	**0.00**	**0.00**	**3.97**	**9.23**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	0.00	7,158.48	9.23
Total	**0.00**	**0.00**	**0.00**	**702.13**	**0.00**	**0.00**	**0.00**	**0.00**	**7,158.48**	**9.23**
Ballona Wetlands										
East Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	1.38	0.00	0.00	0.00	6.92	6.65	14.94
Subtotal	**0.00**	**0.00**	**0.00**	**1.38**	**0.00**	**0.00**	**0.00**	**6.92**	**6.65**	**14.94**
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	2.98	2.17	0.00	0.00	5.25	30.00	3.35	43.75
Subtotal	**0.00**	**0.00**	**2.98**	**2.17**	**0.00**	**0.00**	**5.25**	**30.00**	**3.35**	**43.75**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	5.44	3.64	0.00	0.00	0.00	1.24	9.30	19.63
Subtotal	**0.00**	**0.00**	**5.44**	**3.64**	**0.00**	**0.00**	**0.00**	**1.24**	**9.30**	**19.63**
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	8.42	7.20	0.00	0.00	5.26	38.15	19.30	78.33
Total	**0.00**	**0.00**	**8.42**	**7.20**	**0.00**	**0.00**	**5.26**	**38.15**	**19.30**	**78.33**
Total Area - South of Ballona Channel										
Proposed Project	**0.00**	**15.54**	**0.00**	**0.00**	**0.00**	**0.00**	**32.49**	**0.00**	**1.42**	**49.44**
First Phase	**0.00**	**0.00**	**117.99**	**0.17**	**0.00**	**0.00**	**52.78**	**0.02**	**4.90**	**175.87**
Off-site	**42.67**	**0.00**	**95.68**	**743.99**	**0.00**	**0.00**	**13.36**	**114.66**	**7,181.57**	**340.55**
Total	**42.67**	**15.54**	**213.68**	**744.16**	**0.00**	**0.00**	**98.63**	**114.68**	**7,187.89**	**565.87**

TABLE F-32b

SUMMARY OF TOTAL PHOSPHORUS REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TP Loads
	0.80	0.80	0.80	0.90	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project (Onsite Biofilters)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Riparian Corridor Tributary Area	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Central Storm Drain										
Proposed Project (Onsite Biofilters)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (Lincoln Blvd Bioswales)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Jefferson Storm Drain										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (CDS Unit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-32b

SUMMARY OF TOTAL PHOSPHORUS REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TP Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.36	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Ballona Wetlands										
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Subtotal										
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00
Total Area - South of Ballona Channel										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-33a

SUMMARY OF TOTAL KJELDAHL NITROGEN RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TKN Loads Subtotals
Runoff Coefficients	0.80	0.80	0.80	0.80	0.80	0.80	0.60	0.38	0.24	
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project	0.00	41.34	0.00	0.00	0.00	0.00	65.10	0.00	8.84	**115.28**
First Phase	0.00	0.00	471.41	0.00	0.00	0.00	0.00	0.00	4.71	**476.13**
Off-site	0.29	0.00	458.58	1.00	0.00	0.00	0.00	223.67	29.48	**713.02**
Subtotal	**0.29**	**41.34**	**930.00**	**1.00**	**0.00**	**0.00**	**65.10**	**223.67**	**43.03**	**1,304.43**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	98.43	0.00	0.00	0.00	114.12	0.00	11.04	**223.59**
Off-site	0.00	0.00	118.49	0.00	0.00	0.00	0.00	57.09	0.00	**175.59**
Subtotal	**0.00**	**0.00**	**216.92**	**0.00**	**0.00**	**0.00**	**114.12**	**57.09**	**11.04**	**399.18**
Total Riparian Corridor Tributary Area	**0.29**	**41.34**	**1,146.92**	**1.00**	**0.00**	**0.00**	**179.22**	**280.77**	**54.08**	**1,703.61**
Central Storm Drain										
Proposed Project	0.00	77.86	0.00	0.00	0.00	0.00	182.20	0.00	2.33	**262.38**
First Phase	0.00	0.00	251.40	0.00	0.00	0.00	218.78	0.00	8.13	**478.31**
Off-site	0.05	0.00	0.00	18.14	0.00	0.00	0.00	0.00	0.00	**18.19**
Subtotal	**0.05**	**77.86**	**251.40**	**18.14**	**0.00**	**0.00**	**400.98**	**0.00**	**10.46**	**758.88**
Jefferson Storm Drain										
Proposed Project	0.00	1.11	0.00	0.00	0.00	0.00	1.37	0.00	0.00	**2.48**
First Phase	0.00	0.00	98.56	0.00	0.00	0.00	71.12	0.00	1.14	**170.82**
Off-site	315.85	0.00	77.90	90.62	0.00	0.00	35.08	169.54	0.38	**689.37**
Subtotal	**315.85**	**1.11**	**176.46**	**90.62**	**0.00**	**0.00**	**107.56**	**169.54**	**1.52**	**862.67**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	**0.15**
Off-site	0.00	0.00	25.26	13.75	0.00	0.00	26.93	135.30	0.00	**201.26**
Subtotal	**0.00**	**0.00**	**25.26**	**13.75**	**0.00**	**0.00**	**26.93**	**135.30**	**0.15**	**201.40**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.62	0.00	0.00	0.00	0.18	13.44	**14.24**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.62**	**0.00**	**0.00**	**0.00**	**0.18**	**13.44**	**14.24**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	120.31	0.00	0.00	0.00	0.00	248.66	0.00	11.17	**380.14**
First Phase	0.00	0.00	919.80	0.62	0.00	0.00	404.02	0.18	38.62	**1,363.24**
Off-site	316.19	0.00	680.24	123.52	0.00	0.00	62.01	585.61	29.86	**1,797.43**
Total	**316.19**	**120.31**	**1,600.04**	**124.14**	**0.00**	**0.00**	**714.69**	**585.79**	**79.65**	**3,540.81**

TABLE F-33a

SUMMARY OF TOTAL KJELDAHL NITROGEN RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TKN Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	18.76	0.00	0.00	0.00	0.00	31.23	50.00
Subtotal	0.00	0.00	0.00	18.76	0.00	0.00	0.00	0.00	31.23	50.00
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	18.76	0.00	0.00	0.00	0.00	31.23	50.00
Total	0.00	0.00	0.00	18.76	0.00	0.00	0.00	0.00	31.23	50.00
Ballona Wetlands										
East Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	4.92	0.00	0.00	0.00	52.93	52.38	110.23
Subtotal	0.00	0.00	0.00	4.92	0.00	0.00	0.00	52.93	52.38	110.23
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	23.23	7.74	0.00	0.00	40.21	229.51	26.40	327.19
Subtotal	0.00	0.00	23.23	7.74	0.00	0.00	40.21	229.51	26.40	327.19
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	42.44	12.97	0.00	0.00	0.04	9.50	73.25	138.20
Subtotal	0.00	0.00	42.44	12.97	0.00	0.00	0.04	9.50	73.25	138.20
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	65.66	25.64	0.00	0.00	40.25	292.05	152.02	575.62
Total	0.00	0.00	65.66	25.64	0.00	0.00	40.25	292.05	152.02	575.62
Total Area - South of Ballona Channel										
Proposed Project	0.00	120.31	0.00	0.00	0.00	0.00	248.66	0.00	11.17	380.14
First Phase	0.00	0.00	919.80	0.62	0.00	0.00	404.02	0.18	38.62	1,363.24
Off-site	316.19	0.00	745.90	167.92	0.00	0.00	102.26	877.66	213.12	2,423.04
Total	316.19	120.31	1,665.70	168.54	0.00	0.00	754.94	877.85	262.90	4,166.42

TABLE F-33b

SUMMARY OF TOTAL KJELDAHL NITROGEN REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TKN Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project (Onsite Biofilters)	0.00	-11.22	0.00	0.00	0.00	0.00	-2.25	0.00	0.00	-13.47
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**-11.22**	**0.00**	**0.00**	**0.00**	**0.00**	**-2.25**	**0.00**	**0.00**	**-13.47**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Riparian Corridor Tributary Area	**0.00**	**-11.22**	**0.00**	**0.00**	**0.00**	**0.00**	**-2.25**	**0.00**	**0.00**	**-13.47**
Central Storm Drain										
Proposed Project (Onsite Biofilters)	0.00	-10.68	0.00	0.00	0.00	0.00	-3.18	0.00	0.00	-13.86
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (Lincoln Blvd Bioswales)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**-10.68**	**0.00**	**0.00**	**0.00**	**0.00**	**-3.18**	**0.00**	**0.00**	**-13.86**
Jefferson Storm Drain										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site (CDS Unit)	0.00	0.00	-6.91	0.00	0.00	0.00	0.00	0.00	0.00	-6.91
Subtotal	**0.00**	**0.00**	**-6.91**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**-6.91**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-33b

SUMMARY OF TOTAL KJELDAHL NITROGEN REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TKN Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Ballona Wetlands										
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Subtotal										
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - South of Ballona Channel										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-34a

SUMMARY OF OIL AND GREASE RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	O&G Loads
	Runoff Coefficients									
	0.90	0.80	0.80	0.80	0.30	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	55.24	0.00	0.00	0.00	0.00	0.00	**55.24**
Subtotal	**0.00**	**0.00**	**0.00**	**55.24**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**55.24**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	55.24	0.00	0.00	0.00	0.00	0.00	**55.24**
Total	**0.00**	**0.00**	**0.00**	**55.24**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**55.24**
Ballona Wetlands										
East Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	14.48	0.00	0.00	0.00	38.02	0.00	**52.51**
Subtotal	**0.00**	**0.00**	**0.00**	**14.48**	**0.00**	**0.00**	**0.00**	**38.02**	**0.00**	**52.51**
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	24.45	22.80	0.00	0.00	28.88	164.94	0.00	**241.08**
Subtotal	**0.00**	**0.00**	**24.46**	**22.80**	**0.00**	**0.00**	**28.88**	**164.94**	**0.00**	**241.08**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	44.69	38.20	0.00	0.00	0.03	5.83	0.00	**89.74**
Subtotal	**0.00**	**0.00**	**44.69**	**38.20**	**0.00**	**0.00**	**0.03**	**6.83**	**0.00**	**89.74**
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	69.14	75.49	0.00	0.00	28.91	209.79	0.00	**383.33**
Total	**0.00**	**0.00**	**69.14**	**75.49**	**0.00**	**0.00**	**28.91**	**209.79**	**0.00**	**383.33**
Total Area - South of Ballona Channel										
Proposed Project	**0.00**	**111.88**	**0.00**	**0.00**	**0.00**	**0.00**	**178.62**	**0.00**	**0.00**	**290.50**
First Phase	**0.00**	**0.00**	**968.55**	**1.83**	**0.00**	**0.00**	**290.22**	**0.13**	**0.00**	**1,260.73**
Off-site	**235.34**	**0.00**	**785.44**	**494.42**	**0.00**	**0.00**	**73.45**	**630.45**	**0.00**	**2,219.10**
Total	**235.34**	**111.88**	**1,753.99**	**496.25**	**0.00**	**0.00**	**542.29**	**630.58**	**0.00**	**3,770.33**

TABLE F-34a

SUMMARY OF OIL AND GREASE RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	ndustrial	Commercial/R esidential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	O&G Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project	0.00	38.44	0.00	0.00	0.00	0.00	46.76	0.00	0.00	**85.21**
First Phase	0.00	0.00	496.40	0.00	0.00	0.00	0.00	0.00	0.00	**496.40**
Off-site	0.22	0.00	482.89	2.95	0.00	0.00	0.00	160.67	0.00	**646.72**
Subtotal	**0.22**	**38.44**	**979.29**	**2.95**	**0.00**	**0.00**	**46.76**	**160.67**	**0.00**	**1,228.33**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	103.64	0.00	0.00	0.00	81.97	0.00	0.00	**185.62**
Off-site	0.00	0.00	124.78	0.00	0.00	0.00	0.00	41.01	0.00	**165.79**
Subtotal	**0.00**	**0.00**	**228.42**	**0.00**	**0.00**	**0.00**	**81.97**	**41.01**	**0.00**	**351.40**
Total Riparian Corridor Tributary Area	**0.22**	**38.44**	**1,207.71**	**2.95**	**0.00**	**0.00**	**128.74**	**201.68**	**0.00**	**1,579.73**
Central Storm Drain										
Proposed Project	0.00	72.40	0.00	0.00	0.00	0.00	130.88	0.00	0.00	**203.28**
First Phase	0.00	0.00	264.72	0.00	0.00	0.00	157.16	0.00	0.00	**421.88**
Off-site	0.04	0.00	0.00	53.41	0.00	0.00	0.00	0.00	0.00	**53.44**
Subtotal	**0.04**	**72.40**	**264.72**	**53.41**	**0.00**	**0.00**	**288.03**	**0.00**	**0.00**	**678.60**
Jefferson Storm Drain										
Proposed Project	0.00	1.04	0.00	0.00	0.00	0.00	0.98	0.00	0.00	**2.02**
First Phase	0.00	0.00	103.78	0.00	0.00	0.00	51.09	0.00	0.00	**154.87**
Off-site	235.09	0.00	82.03	265.83	0.00	0.00	25.20	121.78	0.00	**730.94**
Subtotal	**235.09**	**1.04**	**185.81**	**265.83**	**0.00**	**0.00**	**77.26**	**121.78**	**0.00**	**887.82**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	26.60	40.50	0.00	0.00	19.35	97.19	0.00	**183.64**
Subtotal	**0.00**	**0.00**	**26.60**	**40.50**	**0.00**	**0.00**	**19.35**	**97.19**	**0.00**	**183.64**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	1.83	0.00	0.00	0.00	0.13	0.00	**1.97**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**1.83**	**0.00**	**0.00**	**0.00**	**0.13**	**0.00**	**1.97**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	111.88	0.00	0.00	0.00	0.00	178.62	0.00	0.00	**290.50**
First Phase	0.00	0.00	968.55	1.83	0.00	0.00	290.22	0.13	0.00	**1,260.73**
Off-site	235.34	0.00	716.30	363.69	0.00	0.00	44.54	420.66	0.00	**1,780.53**
Total	**235.34**	**111.88**	**1,684.85**	**365.52**	**0.00**	**0.00**	**513.38**	**420.79**	**0.00**	**3,331.75**

TABLE F-34b

SUMMARY OF OIL AND GREASE REMOVED ON-SITE (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	OG Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project (Onsite Biofilters)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Riparian Corridor Tributary Area	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Central Storm Drain										
Proposed Project (Onsite Biofilters)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (Lincoln Blvd Bioswales)	0.00	0.00	0.00	-7.19	0.00	0.00	0.00	0.00	0.00	**-7.19**
Subtotal	**0.00**	**0.00**	**0.00**	**-7.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**-7.19**
Jefferson Storm Drain										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (CDS Unit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-34b

SUMMARY OF OIL AND GREASE REMOVED ON-SITE (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	OG Loads Subtotals
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.36	0.24	
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Ballona Wetlands										
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Subtotal										
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - South of Ballona Channel										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-35a

SUMMARY OF TOTAL COPPER RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TCu Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project	0.00	0.39	0.00	0.00	0.00	0.00	0.40	0.00	0.08	**0.86**
First Phase	0.00	0.00	5.27	0.00	0.00	0.00	0.00	0.00	0.04	**5.31**
Off-site	0.00	0.00	5.12	0.03	0.00	0.00	0.00	1.37	0.27	**6.80**
Subtotal	**0.00**	**0.39**	**10.39**	**0.03**	**0.00**	**0.00**	**0.40**	**1.37**	**0.39**	**12.97**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	1.10	0.00	0.00	0.00	0.70	0.00	0.10	**1.90**
Off-site	0.00	0.00	1.32	0.00	0.00	0.00	0.00	0.35	0.00	**1.67**
Subtotal	**0.00**	**0.00**	**2.42**	**0.00**	**0.00**	**0.00**	**0.70**	**0.35**	**0.10**	**3.57**
Total Riparian Corridor Tributary Area	**0.00**	**0.39**	**12.81**	**0.03**	**0.00**	**0.00**	**1.10**	**1.72**	**0.49**	**16.54**
Central Storm Drain										
Proposed Project	0.00	0.73	0.00	0.00	0.00	0.00	1.12	0.00	0.02	**1.86**
First Phase	0.00	0.00	2.81	0.00	0.00	0.00	1.34	0.00	0.07	**4.22**
Off-site	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	**0.59**
Subtotal	**0.00**	**0.73**	**2.81**	**0.58**	**0.00**	**0.00**	**2.46**	**0.00**	**0.10**	**6.67**
Jefferson Storm Drain										
Proposed Project	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	**0.02**
First Phase	0.00	0.00	1.10	0.00	0.00	0.00	0.44	0.00	0.01	**1.55**
Off-site	3.85	0.00	0.87	2.92	0.00	0.00	0.22	1.04	0.00	**8.90**
Subtotal	**3.85**	**0.01**	**1.97**	**2.92**	**0.00**	**0.00**	**0.66**	**1.04**	**0.01**	**10.46**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.28	0.44	0.00	0.00	0.17	0.83	0.00	**1.72**
Subtotal	**0.00**	**0.00**	**0.28**	**0.44**	**0.00**	**0.00**	**0.17**	**0.83**	**0.00**	**1.72**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.12	**0.14**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.12**	**0.14**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	1.12	0.00	0.00	0.00	0.00	1.52	0.00	0.10	**2.75**
First Phase	0.00	0.00	10.27	0.02	0.00	0.00	2.48	0.00	0.35	**13.12**
Off-site	3.85	0.00	7.60	3.98	0.00	0.00	0.38	3.59	0.27	**19.67**
Total	**3.85**	**1.12**	**17.87**	**4.00**	**0.00**	**0.00**	**4.38**	**3.59**	**0.72**	**35.54**

TABLE F-35a

SUMMARY OF TOTAL COPPER RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TCu Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.28	0.89
Subtotal	**0.00**	**0.00**	**0.00**	**0.60**	**0.00**	**0.00**	**0.00**	**0.00**	**0.28**	**0.89**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	0.00	######	0.89
Total	**0.00**	**0.00**	**0.00**	**702.13**	**0.00**	**0.00**	**0.00**	**0.00**	**######**	**0.89**
Ballona Wetlands										
East Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.32	0.48	0.96
Subtotal	**0.00**	**0.00**	**0.00**	**0.16**	**0.00**	**0.00**	**0.00**	**0.32**	**0.48**	**0.96**
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.26	0.25	0.00	0.00	0.25	1.41	0.24	2.40
Subtotal	**0.00**	**0.00**	**0.26**	**0.25**	**0.00**	**0.00**	**0.25**	**1.41**	**0.24**	**2.40**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.47	0.42	0.00	0.00	0.00	0.06	0.67	1.62
Subtotal	**0.00**	**0.00**	**0.47**	**0.42**	**0.00**	**0.00**	**0.00**	**0.06**	**0.67**	**1.62**
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.73	0.83	0.00	0.00	0.25	1.79	1.38	4.98
Total	**0.00**	**0.00**	**0.73**	**0.83**	**0.00**	**0.00**	**0.25**	**1.79**	**1.38**	**4.98**
Total Area - South of Ballona Channel										
Proposed Project	0.00	1.12	0.00	0.00	0.00	0.00	1.52	0.00	0.10	2.75
First Phase	0.00	0.00	10.27	0.02	0.00	0.00	2.48	0.00	0.35	13.12
Off-site	3.85	0.00	8.33	706.94	0.00	0.00	0.63	5.38	######	25.54
Total	**3.85**	**1.12**	**18.61**	**706.96**	**0.00**	**0.00**	**4.63**	**5.38**	**######**	**41.41**

TABLE F-36a

SUMMARY OF TOTAL LEAD RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TPb Loads Subtotals
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project	0.00	0.20	0.00	0.00	0.00	0.00	0.12	0.00	0.03	**0.35**
First Phase	0.00	0.00	3.15	0.00	0.00	0.00	0.00	0.00	0.02	**3.17**
Off-site	0.00	0.00	3.07	0.00	0.00	0.00	0.00	0.40	0.10	**3.57**
Subtotal	**0.00**	**0.20**	**6.22**	**0.00**	**0.00**	**0.00**	**0.12**	**0.40**	**0.14**	**7.09**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.65	0.00	0.00	0.00	0.21	0.00	0.04	**0.90**
Off-site	0.00	0.00	0.79	0.00	0.00	0.00	0.00	0.10	0.00	**0.89**
Subtotal	**0.00**	**0.00**	**1.45**	**0.00**	**0.00**	**0.00**	**0.21**	**0.10**	**0.04**	**1.79**
Total Riparian Corridor Tributary Area	**0.00**	**0.20**	**7.67**	**0.00**	**0.00**	**0.00**	**0.32**	**0.50**	**0.18**	**8.88**
Central Storm Drain										
Proposed Project	0.00	0.36	0.00	0.00	0.00	0.00	0.33	0.00	0.01	**0.72**
First Phase	0.00	0.00	1.68	0.00	0.00	0.00	0.39	0.00	0.03	**2.10**
Off-site	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	**0.06**
Subtotal	**0.00**	**0.38**	**1.68**	**0.06**	**0.00**	**0.00**	**0.72**	**0.00**	**0.03**	**2.88**
Jefferson Storm Drain										
Proposed Project	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.01**
First Phase	0.00	0.00	0.66	0.00	0.00	0.00	0.13	0.00	0.00	**0.79**
Off-site	2.51	0.00	0.52	0.30	0.00	0.00	0.06	0.30	0.00	**3.70**
Subtotal	**2.51**	**0.01**	**1.18**	**0.30**	**0.00**	**0.00**	**0.19**	**0.30**	**0.01**	**4.50**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.17	0.05	0.00	0.00	0.05	0.24	0.00	**0.51**
Subtotal	**0.00**	**0.00**	**0.17**	**0.05**	**0.00**	**0.00**	**0.05**	**0.24**	**0.00**	**0.51**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	**0.05**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.05**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	0.59	0.00	0.00	0.00	0.00	0.45	0.00	0.04	**1.07**
First Phase	0.00	0.00	6.15	0.00	0.00	0.00	0.73	0.00	0.13	**7.01**
Off-site	2.51	0.00	4.55	0.41	0.00	0.00	0.11	1.05	0.10	**8.74**
Total	**2.51**	**0.59**	**10.70**	**0.41**	**0.00**	**0.00**	**1.28**	**1.05**	**0.26**	**16.81**

TABLE F-36a

SUMMARY OF TOTAL LEAD RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TPb Loads
	0.80	0.60	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.10	**0.17**
Subtotal	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	**0.17**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	702.13	0.00	0.00	0.00	0.00	7,158.48	**0.17**
Total	**0.00**	**0.00**	**0.00**	**702.13**	**0.00**	**0.00**	**0.00**	**0.00**	**7,158.48**	**0.17**
Ballona Wetlands										
East Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.10	0.17	**0.28**
Subtotal	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.10**	**0.17**	**0.28**
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.16	0.03	0.00	0.00	0.07	0.41	0.09	**0.75**
Subtotal	**0.00**	**0.00**	**0.16**	**0.03**	**0.00**	**0.00**	**0.07**	**0.41**	**0.09**	**0.75**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.28	0.04	0.00	0.00	0.00	0.02	0.24	**0.59**
Subtotal	**0.00**	**0.00**	**0.28**	**0.04**	**0.00**	**0.00**	**0.00**	**0.02**	**0.24**	**0.59**
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.44	0.09	0.00	0.00	0.07	0.52	0.50	**1.62**
Total	**0.00**	**0.00**	**0.44**	**0.09**	**0.00**	**0.00**	**0.07**	**0.52**	**0.50**	**1.62**
Total Area - South of Ballona Channel										
Proposed Project	**0.00**	**0.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.45**	**0.00**	**0.04**	**1.07**
First Phase	**0.00**	**0.00**	**6.15**	**0.00**	**0.00**	**0.00**	**0.73**	**0.00**	**0.13**	**7.01**
Off-site	**2.51**	**0.00**	**4.99**	**702.63**	**0.00**	**0.00**	**0.18**	**1.58**	**7,159.08**	**10.52**
Total	**2.51**	**0.59**	**11.14**	**702.63**	**0.00**	**0.00**	**1.36**	**1.58**	**7,159.24**	**18.60**

TABLE F-36b

SUMMARY OF TOTAL LEAD REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TPb Loads
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project (Onsite Biofilters)	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**-0.01**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**-0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**-0.01**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Riparian Corridor Tributary Area	**0.00**	**-0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**-0.01**
Central Storm Drain										
Proposed Project (Onsite B of ters)	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**-0.01**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (Lincoln Blvd Bioswales)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**-0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**-0.01**
Jefferson Storm Drain										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (CDS Jr :)	0.00	0.00	-0.06	0.00	0.00	0.00	0.00	0.00	0.00	**-0.06**
Subtotal	**0.00**	**0.00**	**-0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**-0.06**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-36b

SUMMARY OF TOTAL LEAD REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TPb Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.50	0.38	0.24	**Subtotals**
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Ballona Wetlands										
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Subtotal										
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - South of Ballona Channel										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-37a

SUMMARY OF TOTAL ZINC RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	
	Runoff Coefficients									TZn Loads
	0.80	0.80	0.80	0.80	0.80	0.30	0.60	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project	0.00	2.81	0.00	0.00	0.00	0.00	3.48	0.00	0.20	**6.49**
First Phase	0.00	0.00	36.13	0.00	0.00	0.00	0.00	0.00	0.11	**36.23**
Off-site	0.04	0.00	35.14	0.16	0.00	0.00	0.00	11.95	0.66	**47.96**
Subtotal	**0.04**	**2.81**	**71.27**	**0.16**	**0.00**	**0.00**	**3.48**	**11.95**	**0.97**	**90.68**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	7.54	0.00	0.00	0.00	6.09	0.00	0.25	**13.89**
Off-site	0.00	0.00	9.08	0.00	0.00	0.00	0.00	3.05	0.00	**12.13**
Subtotal	**0.00**	**0.00**	**16.62**	**0.00**	**0.00**	**0.00**	**6.09**	**3.05**	**0.25**	**26.02**
Total Riparian Corridor Tributary Area	**0.04**	**2.81**	**87.89**	**0.16**	**0.00**	**0.00**	**9.57**	**15.00**	1.22	116.70
Central Storm Drain										
Proposed Project	0.00	5.30	0.00	0.00	0.00	0.00	9.73	0.00	0.05	**15.09**
First Phase	0.00	0.00	19.27	0.00	0.00	0.00	11.69	0.00	0.16	**31.13**
Off-site	0.01	0.00	0.00	2.98	0.00	0.00	0.00	0.00	0.00	**2.99**
Subtotal	**0.01**	**5.30**	**19.27**	**2.98**	**0.00**	**0.00**	**21.42**	**0.00**	**0.24**	**49.21**
Jefferson Storm Drain										
Proposed Project	0.00	0.08	0.00	0.00	0.00	0.00	0.07	0.00	0.00	**0.15**
First Phase	0.00	0.00	7.55	0.00	0.00	0.00	3.80	0.00	0.03	**11.38**
Off-site	46.32	0.00	5.97	14.90	0.00	0.00	1.87	9.05	0.01	**78.12**
Subtotal	**46.32**	**0.08**	**13.52**	**14.90**	**0.00**	**0.00**	**5.74**	**9.05**	**0.03**	**89.65**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	1.94	2.26	0.00	0.00	1.44	7.23	0.00	**12.86**
Subtotal	**0.00**	**0.00**	**1.94**	**2.26**	**0.00**	**0.00**	**1.44**	**7.23**	**0.00**	**12.87**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.01	0.30	**0.41**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.10**	**0.00**	**0.00**	**0.00**	**0.01**	**0.30**	**0.41**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	8.19	0.00	0.00	0.00	0.00	13.28	0.00	0.25	**21.72**
First Phase	0.00	0.00	70.49	0.10	0.00	0.00	21.58	0.01	0.87	**93.05**
Off-site	46.36	0.00	52.13	20.30	0.00	0.00	3.31	31.28	0.67	**154.06**
Total	**46.36**	**8.19**	**122.62**	**20.41**	**0.00**	**0.00**	**38.17**	**31.29**	**1.79**	**268.83**

TABLE F-37a

SUMMARY OF TOTAL ZINC RUNOFF LOADS (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TZn Loads Subtotals
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Total	**46.36**	**8.19**	**127.65**	**27.71**	**0.00**	**0.00**	**40.32**	**46.89**	**5.91**	**303.03**

TABLE F-37b

SUMMARY OF TOTAL ZINC REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residential	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residential	Open Space	TZn Loads
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	Subtotals
Freshwater Marsh										
Riparian Corridor at Proposed Project Boundary										
Proposed Project (Onsite Biofilters)	0.00	-1.98	0.00	0.00	0.00	0.00	-1.86	0.00	0.00	**-3.84**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**-1.98**	**0.00**	**0.00**	**0.00**	**0.00**	**-1.86**	**0.00**	**0.00**	**-3.84**
Riparian Corridor at Lincoln										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Riparian Corridor Tributary Area	**0.00**	**-1.98**	**0.00**	**0.00**	**0.00**	**0.00**	**-1.86**	**0.00**	**0.00**	**-3.84**
Central Storm Drain										
Proposed Project (Onsite Biofilters)	0.00	-1.88	0.00	0.00	0.00	0.00	-2.63	0.00	0.00	**-4.51**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (Lincoln Blvd Bioswales)	0.00	0.00	0.00	-2.28	0.00	0.00	0.00	0.00	0.00	**-2.28**
Subtotal	**0.00**	**-1.88**	**0.00**	**-2.28**	**0.00**	**0.00**	**-2.63**	**0.00**	**0.00**	**-6.79**
Jefferson Storm Drain										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Lincoln Storm Drain - South										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site (CDS Unit)	0.00	0.00	-1.17	-1.03	0.00	0.00	-0.04	-0.21	0.00	**-2.45**
Subtotal	**0.00**	**0.00**	**-1.17**	**-1.03**	**0.00**	**0.00**	**-0.04**	**-0.21**	**0.00**	**-2.45**
Freshwater Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Freshwater Marsh Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE F-37b

SUMMARY OF TOTAL ZINC REMOVED (LBS.)
PLAYA VISTA - SECOND PHASE PROJECT

Tributary Name	Industrial	Commercial/ Residentia	Commercial	Major Roadways	Open Water	Other or Unknown	High Density Residential	Low Density Residentia	Open Space	TZn Loads Subtotals
	Runoff Coefficients									
	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.38	0.24	
Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Former Area B Residential										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Ballona Wetlands										
East Wetlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Subtotal										
South Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
North Wetlands										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subtotal	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - Ballona Wetlands Tributary										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Area - South of Ballona Channel										
Proposed Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
First Phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Off-site	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

* Onsite biofilters include vegetated planter boxes for roof runoff and vegetated swales for roadway runoff

TABLE F-38

SUMMARY OF ANNUAL LOADS (LBS)
PLAYA VISTA - PROPOSED PROJECT

	Loads (lbs.) TSS	Total P	TKN	O&G	Total Cu	Diss. Cu	Total Pb	Diss. Pb	Total Zn	Diss. Zn	Volume (ft3)
Freshwater Marsh											
Upper Riparian Corridor	36,604	168	1,291	1,228	12.7	5.9	7.1	3.2	86.8	51.7	8,595,931
Mass Removed Through WQ Inlets (25% of First and Second Phase)	-1,113	-2	0	-29	-0.1	-0.1	-0.1	-0.1	-1.0	-0.6	
Upper Riparian Corridor Influent	35,490	166	1,291	1,199	12.6	5.8	6.9	3.2	85.8	51	8,595,931
Mass Removed in Upper Riparian Corridor	-22,142	-17	-492	-502	-6.4	-0.5	-1.8	-0.8	-10.4	-32.2	
Riparian Corridor at Proposed Project Boundary	**13,349**	**149**	**799**	**698**	**6.1**	**5.3**	**5.1**	**2.4**	**75.4**	**18.9**	**8,595,931**
Lower Riparian Corridor	11,055	52	399	351	3.6	1.7	1.6	0.8	26.0	15.5	3,144,959
Mass Removed Through WQ Inlets (25% of First and Second Phase)	-541	-1	0	-9	0.0	0.0	0.0	0.0	-0.3	-0.2	
Lower Riparian Corridor Influent	10,515	51	399	342	3.5	1.6	1.8	0.8	25.7	15	
Mass Removed in Lower Riparian Corridor	-5,631	0	-107	-87	-1.3	0.0	0.0	0.0	0.0	-8.4	
Riparian Corridor at Lincoln	**18,232**	**200**	**1,091**	**953**	**8.4**	**7.0**	**8.9**	**3.2**	**101.1**	**25.8**	**11,740,891**
Central Storm Drain	17,942	101	745	671	6	3	3	1	42	25	5,797,724
Mass Removed Through WQ Inlets (25% of 1st and 100% of 2nd Phase)	-2,497	-5	0	-62	-0.3	-0.1	-0.2	-0.1	-1.6	-1	
Influent to Central Storm Drain Pretreatment Area	15,444	96	745	610	5.7	2.7	2.7	1.2	40.6	24	
Jefferson Storm Drain	38,361	127	863	888	10.5	4.9	4.5	2.1	89.6	53.3	6,987,025
Mass Removed Through WQ Inlets (25% of First and Second Phase)	-303	-1	0	-8	0.0	0.0	0.0	0.0	-0.3	0	
Influent to Jefferson Storm Drain Pretreatment Area	38,058	127	863	880	10.4	4.8	4.5	2.0	89.4	53.2	
Total Playa Vista Area	71,735	423	2,699	2,442	24	14	14	6	231	103	24,525,639
Lincoln Storm Drain - South	4,709	28	201	184	1.7	0.8	0.5	0.2	12.9	7.7	1,777,701
Influent to RC and Lincoln Pretreatment Area	22,941	229	1,292	1,136	10	8	7	3	114	33	13,518,591
Total Influent to Freshwater Marsh Pretreatment Areas	76,444	451	2,900	2,626	25	15	15	7	244	111	26,303,340
Total Mass Removed in Pretreatment Areas	-30,300	-115	-756	-559	-8.1	-3.6	-3.5	-1.1	-104.6	-49.2	
Riparian Corridor/Lincoln Storm Drain PMA	**20,668**	**214**	**1,208**	**1,076**	**9.3**	**7.3**	**7.0**	**3.3**	**101.7**	**29.8**	**13,518,591**
Central Storm Drain PMA	**13,914**	**90**	**696**	**577**	**5.3**	**2.5**	**2.5**	**1.2**	**36.2**	**21.5**	**5,797,724**
Jefferson Storm Drain PMA	**34,287**	**119**	**806**	**833**	**9.6**	**4.5**	**4.2**	**2.0**	**79.8**	**47.3**	**6,987,025**
Effluent from RC and Lincoln Pretreatment Area	13,848	170	955	894	7.0	5.9	5.6	2.8	65.1	16.6	13,518,591
Effluent from Central Storm Drain Pretreatment Area	9,323	72	551	480	3.9	2.0	2.0	1.0	23.2	13.4	5,797,724
Effluent from Jefferson Storm Drain Pretreatment Area	22,973	94	638	693	7.2	3.7	3.4	1.7	51.0	29.6	6,987,025
Direct to Freshwater Marsh	3,107	2	14	2	0.1	0.1	0.0	0.0	0.4	0.2	560,173
Main Body of Freshwater Marsh	**49,251**	**338**	**2,158**	**2,069**	**18.2**	**11.6**	**11.1**	**5.6**	**139.7**	**61.8**	**26,863,513**
Mass Removed in Main Body of Marsh	-30,300	-115	-756	-559	-8.1	-3.8	-3.5	-1.1	-104.6	-49.2	
Freshwater Marsh Effluent	**18,951**	**223.4**	**1,401.4**	**1,509.3**	**10.1**	**7.8**	**7.7**	**4.5**	**35.0**	**12.6**	**26,863,513**
Ballona Wetlands											
Freshwater Marsh Effluent (8% Overflow)	1,516.1	17.9	112.1	120.7	0.8	0.4	0.6	0.4	2.8	0.9	2,149,081
East Wetlands	13,366	15	110	53	1.0	0.4	0.3	0.1	4.6	2.9	1,433,719
South Wetlands	12,850	44	327	241	2.4	1.1	0.8	0.3	18.1	10.7	3,113,113
North Wetlands	18,407	20	138	90	1.6	0.6	0.5	0.3	7.5	4.5	1,800,988
Off-site Stormwater Runoff Direct to Wetlands	44,624	78	576	383	5.0	2.3	1.5	0.7	30.4	18.1	6,347,620
Total Area - Ballona Wetlands Tributary	46,140	96	688	504	5.8	2.7	2.2	1.1	33.2	19.0	8,496,901
Mass Removed in Wetlands	-25,162	0	0	0	0.0	0.0	0.0	0.0	-13.7	-11.0	
Ballona Wetlands Effluent	**20,978**	**96**	**688**	**504**	**5.8**	**2.7**	**2.2**	**1.1**	**19.6**	**8.1**	**8,496,901**
Ballona Channel											
Freshwater Wetlands System (92% of FWM Effluent)	17,435	205	1,289	1,389	9.3	7.2	7.1	4.1	32.2	11.6	24,714,432
Ballona Wetlands	20,978	96	688	504	5.6	2.7	2.2	1.1	19.6	8.1	8,496,901
Direct to Ballona Channel (Former Area B)	0	0	0	0	0	0	0	0	0	0	0
Total Ballona Channel Influent	38,413	302	1,977	1,893	15.1	9.9	9.3	5.2	51.8	19.7	33,211,333

TABLE F-39

SUMMARY OF CONCENTRATIONS (MG/L)
PLAYA VISTA - FIRST PHASE PROJECT

	Summary Concentrations										Volume
	(mg/l)				(ug/l)						(ft^3)
	TSS	Total P	TKN	O&G	Total Cu	Diss. Cu	Total Pb	Diss. Pb	Total Zn	Diss. Zn	
Freshwater Marsh											
Upper Riparian Corridor Influent (after WQ Inlets)	66.1	0.31	2.4	2.2	23.4	10.9	12.9	5.9	160.0	95.2	8,595,931
% Removed in Upper Riparian Corridor	*62%*	*10%*	*38%*	*42%*	*51%*	*9%*	*26%*	*26%*	*12%*	*63%*	
Riparian Corridor at Proposed Project Boundary	**24.9**	**0.3**	**1.5**	**1.3**	**11.4**	**9.9**	**9.6**	**4.4**	**140.6**	**35.2**	8,595,931
Lower Riparian Corridor Influent (after WQ Inlets)	53.6	0.26	2.0	1.7	18.0	8.3	9.0	4.1	130.7	77.8	3,144,959
% Removed in Lower Riparian Corridor	*54%*	*0%*	*27%*	*25%*	*37%*	*0%*	*0%*	*0%*	*0%*	*55%*	
Riparian Corridor at Lincoln	**24.9**	**0.3**	**1.5**	**1.3**	**11.4**	**9.5**	**9.4**	**4.3**	**137.9**	**35.2**	**11,740,891**
Influent to Central Storm Drain Pretreatment Area	42.7	0.27	2.1	1.7	15.8	7.3	7.4	3.4	112.1	66.7	5,797,724
Influent to Jefferson Storm Drain Pretreatment Area	87.3	0.29	1.98	2.02	23.9	11.1	10.3	4.7	204.9	121.9	6,987,025
Total FWM Project Area Tributaries	**46.9**	**0.28**	**1.8**	**1.6**	**16.0**	**9.5**	**9.2**	**4.2**	**150.9**	**67.4**	**24,525,639**
Lincoln Storm Drain - South	42.4	0.26	1.8	1.7	15.5	7.2	4.6	2.1	115.9	69.0	1,777,701
Influent to RC and Lincoln Pretreatment Area	27.2	0.27	1.5	1.3	11.9	9.2	8.8	4.0	135.0	39.7	
Freshwater Marsh Pretreatment Areas	**46.6**	**0.27**	**1.8**	**1.6**	**16.0**	**9.3**	**8.9**	**4.1**	**148.5**	**67.5**	**26,303,340**
% Removed in Pretreatment Areas	*40%*	*25%*	*26%*	*21%*	*31%*	*25%*	*24%*	*16%*	*43%*	*44%*	
Riparian Corridor/Lincoln Storm Drain PMA	**24.5**	**0.25**	**1.4**	**1.3**	**11.0**	**8.6**	**8.2**	**3.9**	**120.6**	**35.3**	**13,518,591**
Central Storm Drain PMA	**38.4**	**0.25**	**1.9**	**1.6**	**14.5**	**6.9**	**7.0**	**3.2**	**100.1**	**59.3**	**5,797,724**
Jefferson Storm Drain PMA	**78.6**	**0.27**	**1.8**	**1.9**	**22.0**	**10.4**	**9.6**	**4.5**	**182.9**	**108.4**	**6,987,025**
Effluent from RC and Lincoln Pretreatment Area	16.4	0.20	1.1	1.1	8.2	6.9	6.7	3.4	77.1	22.1	13,518,591
Effluent from Central Storm Drain Pretreatment Area	25.8	0.20	1.5	1.3	10.9	5.5	5.7	2.8	64.0	37.1	5,797,724
Effluent from Jefferson Storm Drain Pretreatment Area	52.7	0.22	1.5	1.6	16.5	8.4	7.8	3.9	117.0	67.8	6,987,025
Direct to Freshwater Marsh	88.9	0.05	0.4	0.1	4.1	1.9	1.3	0.6	11.9	7.1	560,173
Main Body of Freshwater Marsh	**29.4**	**0.20**	**1.3**	**1.2**	**10.9**	**6.9**	**6.6**	**3.3**	**83.3**	**36.9**	**26,863,513**
% Removed in Main Body of Marsh	*62%*	*34%*	*35%*	*27%*	*45%*	*32%*	*31%*	*20%*	*75%*	*80%*	
Freshwater Marsh Effluent	**11.3**	**0.13**	**0.8**	**0.9**	**6.02**	**4.66**	**4.59**	**2.68**	**20.89**	**7.53**	**26,863,513**
Influent to Main Body	28.1	0.20	1.31	1.3	11.0	7.0	6.8	3.4	84.8	37.5	
Ballona Wetlands											
Freshwater Marsh Effluent (8% Overflow)	11.3	0.13	0.8	0.9	6.0	2.9	4.6	2.7	20.9	6.9	2,149,081
East Wetlands	149.3	0.17	1.2	0.6	10.7	5.0	3.2	1.5	53.8	32.0	1,433,719
South Wetlands	66.1	0.23	1.7	1.2	12.4	5.7	3.9	1.8	92.9	55.3	3,113,113
North Wetlands	163.7	0.17	1.2	0.8	14.4	6.7	5.2	2.4	67.1	39.9	1,800,988
Off-site Stormwater Runoff Direct to Wetlands	112.6	0.20	1.5	1.0	12.6	5.8	4.1	1.9	76.7	45.7	6,347,820
Total Area - Ballona Wetlands Tributary	**87.0**	**0.18**	**1.3**	**1.0**	**10.9**	**5.1**	**4.2**	**2.1**	**62.6**	**35.9**	**8,496,901**
% Removed in Lower Ballona Wetlands	*55%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*41%*	*58%*	
Ballona Wetlands Effluent	**39.5**	**0.18**	**1.3**	**1.0**	**10.9**	**5.1**	**4.2**	**2.1**	**36.9**	**15**	**8,496,901**
Ballona Channel											
Freshwater Wetlands System (92% of FWM Effluent)	11.3	0.13	0.8	0.9	6.0	2.9	4.6	2.7	20.9	6.9	24,714,432
Ballona Wetlands	39.5	0.18	1.3	1.0	10.9	5.1	4.2	2.1	36.9	15.2	8,496,901
Total Ballona Channel Influent	**18.5**	**0.15**	**0.95**	**0.9**	**7.3**	**4.8**	**4.5**	**2.5**	**25.0**	**9.5**	**33,211,333**

Appendix G
Effect of Saltwater on Metals Partitioning
(GeoSyntec Consultants)

Introduction

Metals change chemical forms in aquatic systems based on pH, salinity, temperature, organic matter and biological activity. A study by Lores and Pennock (1998) characterized the effect of salinity on the complexation of dissolved organic matter (DOM), humic acid, with Cu, Cd, Cr, and Zn. Results from this study indicated that Cu binding with DOM increased with increasing salinity. Another study (EPA) indicates that in sea water systems, aquatic chemists have discovered more metal bound up in organic complexes as compared to inorganic complexes (Bruland et al. 1994). For example within estuarine systems dissolved copper results appear to contain 90% to 99% organic complexes, consequently free copper ion concentrations (the fraction most attributable to aquatic toxicity) are about 100-fold lower than dissolved copper concentrations (Donat et al. 1994). Some increased binding with increased salinity was reported by Fukushima (1994), who suggested that at least part of the increase in binding is likely due to changes in the conformation of the humic molecules exposing more copper binding sites. For primary producers such as phytoplankton, ciliates, copepods, and crab larvae, bioavailability is generally correlated to the free metal ion concentration, thus toxicity is much lower in seawater systems than in freshwater bodies (Sunda et al. 1987).

Use of Los Angeles County Mass Emissions Data

Based on the review of literature above, the metals concentrations in the discharge of Freshwater Marsh to the saline waters of the Ballona Channel and the Ballona Wetlands are expected to repartition according to the ambient water quality of these receiving waters. The Los Angeles County has a mass emissions monitoring station upstream of the Proposed Project in Ballona Channel. Data from this monitoring station indicates that the dissolved copper concentrations in the Ballona Channel are, on average, approximately 48% of the total copper concentration, while dissolved zinc concentrations are approximately 33% of the total zinc concentration (LADPW, 2000). Dissolved lead was not measured at concentrations above the detection limit of 5 ug/L at a statistically significant number of times in the Ballona Channel to summarize the dissolved lead data.

While these local data do not necessarily represent the conditions in the estuary portion of the Ballona Channel since the mass emission station is upstream of the Proposed Project near Culver Drive and Beloit Avenue, the dissolved fractions of dissolved copper and zinc do conservatively agree with data in other estuaries of California. Water quality monitoring conducted in the San Francisco Bay Estuary indicates that dissolved copper, lead, and zinc are rarely measured at concentrations greater than 50% of the total metals concentrations (SFEI, 1997). Therefore, to account for the tendency of dissolved metals to bind with organic matter (metals complexation) during the initial mixing of freshwater with the estuarine waters of the Ballona Channel, an effective dissolved metals concentration was estimated using the observed dissolved and particulate fractionation values from the County of Los Angeles' mass-emissions data for Ballona Creek. Dissolved lead was not adjusted due to the lack of statistically valid data for Ballona Creek.

Conclusions

The pollutant loadings model used to assess potential impacts of the Proposed Project does not account for the transformation, or speciation, of modeled pollutants, except for the use of stormwater control facility performance data from National Stormwater BMP database (www.bmpdatabase.org). This data represents the most current state-of-the-practice performance data of stormwater best management practices, however it is limited in that it can only be used to predict transformations occurring within the BMP system. Therefore, the use of local data to adjust the discharge concentrations of dissolved copper and zinc based on the predicted total metals concentration from the Freshwater Marsh to the Ballona Channel (estuary) and the Ballona Wetlands is believed to more accurately represent the likely contribution of these metals to the saline receiving waters of the Proposed Project.

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