Jamison and Associates, Inc.

SOUTHERN CALIFORNIA EDISON

DRAFT CLOSURE PLAN

ORMOND BEACH GENERATING STATION

RETENTION BASIN SITE,

VENTURA COUNTY, CALIFORNIA

January 2009

Jamison and Associates, Inc.
PO Box 34802
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CLOSURE PLAN FOR THE WASTEWATER RETENTION BASIN SITE AT THE ORMOND BEACH GENERATING STATION

January 2009

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Cecil R. House, Senior Vice President

Rick Greenwood, Director, Environment, Health & Safety

Randall S. Weidner, Project Manager

The undersigned certifies that all interpretative work conducted in support of this document was conducted in accordance with DTSC and EPA guidance.

Dennis Jamison, CHG #471

The undersigned certifies that all investigative work conducted in support of this document was conducted in accordance with DTSC-approved work plans.

Patrick Hamilton, CEG #998

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INTRODUCTION

In 1996, Southern California Edison Company (Edison) implemented a Water Quality Monitoring Program in response to a Final Judgment pursuant to a Stipulation, handed down by the Superior Court of California, Los Angeles County, Number BC 121219 on February 1, 1995. The Stipulation alleged that Edison had stored hazardous wastes in non-permitted wastewater retention basins at their electrical generating stations in southern California. Edison agreed to clean close these basins according to Chapter 15 of Title 22, California Code of Regulations. The Ormond Beach Generating Station is one of the facilities cited in the agreement.

There are three wastewater retention basins or waste management units at the Ormond Beach Generating Station. These basins are presently lined with a high-density polyethylene (HDPE) liner to prevent leakage of wastewater from the basins. The retention basins and their associated pipelines and appurtenances form the retention basin site (or waste management unit) that is the subject of this report.

This Closure Plan is organized into sections that cover facility and waste descriptions, site characterization activities, and plans and standards for site remediation. These sections are based on Department of Toxic Substances Control (DTSC) guidance for surface-impoundment closure plans (DTSC, 2006). The purpose of the Closure Plan is to allow DTSC and public review of the proposed plans, standards, and contingencies for remediating the retention basin site at the Ormond Beach Generating Station. Once the Closure Plan is approved, SCE will implement the plan, under the guidance and direction of DTSC. After the site is remediated, a Closure Certification Report will be generated to document the remediation process and demonstrate that the standards set forth in this Closure Plan were achieved. The Closure Certification Report will be approved by DTSC before the site closure is considered complete.

1. FACILITY IDENTIFICATION

Site Name: Ormond Beach Generating Station (wastewater retention basin site)

SCE EPA Identification Number:	CAD000631036
Site Code:	400438
Contact Person (Project Manager):	Randall Weidner (626) 302-4033
Facility and Mailing Address:	6635 South Edison Drive, Oxnard, California, 93033
Facility Owner and Operator:	Reliant Energy Inc.
Nature of Business:	Generation of Electricity

The Ormond Beach Generating Station (the station), is a 1,500 megawatt plant in Oxnard California. Under waste discharge permit #CA0001198 the station can discharge up to 688.2 million gallons per day (mgd) of once-through cooling water from two steam electric generating units and low volume wastes (from the retention basins) into the Pacific Ocean. The combined effluent is discharged through an ocean outfall (Discharge Serial No. 001) located approximately 1,790 feet offshore Ormond Beach at a depth of 20 feet (California EPA, 2008).

SCE sold the station in 1998, but retained responsibility under the contract of sale for environmental liability associated with the past operation of the retention basins during the period of SCE's ownership. This liability resulted from the past practice of temporarily storing boiler chemical cleaning wastes in the retention basins prior to the early 1990's. SCE discontinued the practice of storing hazardous boiler chemical cleaning wastewater in the North and South retention basins during the late 1980's.

Note that SCE is closing the Hazardous Waste Management Unit (HWMU) but is not physically closing the retention basins, which are necessary for continued operation of the station. Thus, the basins will remain in operation after the HWMU is closed.

2. FACILITY LOCATION

The station is located on the California coast, approximately 5 miles south of the City of Oxnard in Ventura County (**Figure 1**). An aerial photo of the station and surrounding area is shown on **Figure 2** (Perry, 2005). The station property has an area of 37 acres. The retention basin site is a subset of the station property as shown on **Figures 3 and 4**.

The station is located between the Calleguas Creek watershed and the Santa Clara watershed in an area referred to as the Miscellaneous Coastal Ventura Watershed Management Area which includes several coastal areas that are not included directly in any of Ventura County's Watershed Areas (Lyons 2008).

2.1 CLIMATE AND SURFACE HYDROLOGY

The station is situated in Ventura County which has a Mediterranean-type climate with warm, dry summers and cool, wet winters. Ormond Beach is located in the southern part of the Oxnard Plain, which is part of the Ventura Basin. The Oxnard Plain is generally flat, with a slight increase in elevation inland. The Santa Monica and Santa Ynez Mountains, which form the eastern and northern boundaries of the Ventura Basin, rise abruptly from the Oxnard Plain to elevations of more than 1,000 feet (SulTech 2004).

Precipitation occurs mainly from November through April. Records indicate annual average rainfall at Naval Air Station Point Mugu (approximately five miles east of the site) is 11.84 inches. The minimum monthly average, 0.01 inches, occurs in July. The maximum monthly average, 2.72 inches, occurs in January. The 100-year maximum 24-hour rainfall at Naval Air Station Point Mugu is 5.05 inches (SulTech 2005). The Flood Insurance Rate Maps for Ventura County shows the Ormond Beach site on the boundary of the 100-year flood boundary.

The Pacific Ocean lies about 600 feet west of the site (**Figure 1**). The average tidal range at Port Hueneme was 2.8 feet in 2007 and the average spring tidal range was 5.4 feet.

The Ormond Beach wetlands consist of ten fragmented sites that extend from the wastewater treatment facility adjacent to Port Hueneme, including the beach lagoon within the coastal dune zone, and down the coast to the southeast of the station (CERES 2008). The wetlands historically covered more than 500 acres as part of the wetlands complex of the Oxnard plain behind the historical coastal dunes extending from the current harbor at Port Hueneme to Mugu Lagoon; however, the wetlands currently cover approximately 217 acres (CERES 2008; MEC Analytical Systems 1991; McClellan Engineers 1985).

In the early 1900's, Port Hueneme was constructed in one of the larger lagoons, agriculture fields intruded into the wetlands in the 1920's and extensive drainage canals were constructed in the 1930s. In the 1950's and 1960's, heavy industrial facilities were sited within the wetlands (CERES; McClellan Engineers 1985). The majority of wetlands at Ormond Beach are not directly tidally connected, but historically they were probably connected to

Mugu Lagoon through channels and sloughs, which provide limited tidal influence. The beach lagoon and drainage channels are tidally influenced for short periods of time when the beach berm is breached. Southeast of the station, the drainage channel receives some tidal water from leaking flap gates connected to Mugu Lagoon (CERES 2008; Jones and Stokes 1994). An aerial photo showing the wetlands surrounding the station in March 2005 is shown in **Figure 2** (Perry, 2005).

2.2 HYDROGEOLOGY

The station is situated in the southern edge of the Oxnard Plain groundwater basin. The plain is bounded by the Santa Monica Mountains, Transverse Range, and Pacific Ocean. The strata in the Oxnard Plain comprise several thousand feet of marine and continental sediments of Tertiary and Quaternary age which were deposited on a pre-Cretaceous basement of igneous and metamorphic rocks.

Six aquifers have been identified within Pleistocene- to Holocene-age deposits in the Ventura Basin. In order of increasing depth, they are as follows: Semi-Perched aquifer, Oxnard aquifer, Mugu aquifer, Hueneme aquifer, Fox Canyon aquifer, and Grimes Canyon aquifer. The aquifers are separated by aquitards that are leaky and discontinuous across the Ventura Basin. Together, the Oxnard and the Mugu aquifers form the upper aquifer system. The Hueneme, the Fox Canyon, and the Grimes Canyon aquifers comprise the lower aquifer system (SulTech 2004).

Information from NAWS Point Mugu indicates that the Semi-Perched Aquifer extends from the water table to an average of 75 feet below ground surface (bgs) over most of the Oxnard Plain. This aquifer is highly variable and is composed of fluvial deposits of sand and gravel interbedded with silt and clay (Tetra Tech EMI 2003).

The depth to the water table varies from approximately 2.0 to 8.5 feet bgs across the retention basin site. The water table is shallowest at the north end of the retention basin site. The most recent annual groundwater monitoring report (Hamilton, 2008), presenting data for the period of March 1997 through December 2007, indicates the historical range of seasonal and annual variation in the depth to water is approximately 4 feet.

Within the Oxnard Plain, the Semi-Perched and Oxnard Aquifers are separated by a leaky aquitard known as the clay cap-confining layer. The aquitard consists of silt and clay with lenses of fine- to medium-grained sand. The thickness of the clay cap-confining layer is reported to be between 10 and 100 feet. The clay cap is highly variable and breaks may be important conduits to downward groundwater flow (Tetra Tech EMI 2003).

The Upper Aquifer System consists of the Oxnard and Mugu Aquifers. The confined Oxnard Aquifer is located between 100 and 330 feet bgs and consists of Holocene-age fine- and coarse-grained sand and gravel. Interbedded silt and clay layers separate the aquifer into

several zones. The Oxnard Aquifer is a major groundwater producer and is considered the principal aquifer beneath the Oxnard Plain. The Oxnard Aquifer is generally separated from the underlying Mugu Aquifer by an aquitard that consists of silt and clay of very low permeability that ranges in thickness from 10 to 100 feet across the Oxnard Plain (Tetra Tech EMI 2003).

The confined Mugu Aquifer is within upper Pleistocene-age deposits located about 300 to 500 feet bgs. Regionally, the aquifer is about 100 feet thick and is characterized by fine- to coarse-grained sand and fine gravel with discontinuous interbeds of silt and clay (Tetra Tech EMI 2003).

The Hueneme, Fox Canyon, and Grimes Canyon Aquifers make up the Lower Aquifer System in the Oxnard Plain. The Hueneme Aquifer is generally present below the Mugu Aquifer in the Oxnard Plain at depths between 400 and 1,500 feet bgs and is the uppermost unit of the Lower Aquifer System. The aquifer is composed of interbedded sand, silt, and clay. Because the Hueneme Aquifer has been subjected to folding and erosion, it is very thick in some places and absent in others (Tetra Tech EMI 2003).

The Fox Canyon and Grimes Canyon Aquifers are confined and lie below the Hueneme Aquifer. The Fox Canyon Aquifer consists of 100 to 200 feet of fine- to medium-grained sand and gravel with interbedded silt and clay. The permeability of the aquifer is relatively high and is considered the principal lower Pleistocene Aquifer. A thin aquitard that consists of silt and clay separates the Fox Canyon Aquifer from the underlying Grimes Canyon Aquifer. The Grimes Canyon Aquifer consists of fine- to coarse-grained sand and gravel and has relatively high permeability (Tetra Tech EMI 2003).

Regional groundwater level contours between Port Hueneme and Point Mugu indicate that groundwater flow is generally to the southeast, parallel to the coast (Tetra Tech EMI 2003). However, at the station groundwater flow is to the east. The eastward gradient at the station is very small (0.0004 to 0.002) (Hamilton, 2008), implying low groundwater velocities. This interpretation is supported by observations of 1,4-dioxane in groundwater. For the 8-year period since 1,4-dioxane monitoring began (i.e., since March 2000) the 1,4-dioxane plume has remained within the area between the North Retention Basin and the Administration Building (**Figure 3**). Quarterly contour maps of 1,4-dioxane concentrations are presented in the annual groundwater monitoring report for the retention basin site (Hamilton, 2008).

The depth to groundwater in the plume area is approximately two feet bgs. Tidal influences were investigated in 1996 (Hamilton, 1997). Little or no tidal influence on water levels in the monitoring wells was found.

3. FACILITY DESIGN

3.1 RETENTION BASINS

When the construction of the station was completed in 1972, there were two wastewater retention basins at the facility. These were designated the North and South Basins (**Figure 3**). The two basins were originally constructed with a single liner of asphaltic concrete. In 1986, both basins were retrofitted with a single layer of a synthetic liner (HDPE) installed over the existing asphalt liner. In 1989, the Boiler Chemical Cleaning Basin (BCCB) was created by partitioning the northeast corner of the North Basin with concrete walls. This unit was established over the existing liner of the North Basin (**Figure 4**). It is double lined with HDPE and has a leachate collection system installed between the two layers of liner material.

The North and South Retention basins are used to collect and store nonhazardous wastewater from the facility. The wastewater, containing minor amounts of oil, grease, and suspended solids, is systematically comingled with cooling water from the station and discharged to the ocean under the provisions of a National Pollutant Discharge Elimination System (NPDES) permit.

The BCCB was used to temporarily hold (for less than 30 days) acidic cleaning solutions from the removal of corrosion and mineral deposits from the boiler tubes. This cleaning process is no longer used at the site. The BCCB is considered out of service and only contains rain water. Previously, the cleaning solutions were stored in the BCCB until removal and disposal off-site.

3.2 PIPELINES

Each of the two generation units are serviced by separate boiler acid wash and fireside wash systems. The pipelines from the two units convey the aqueous waste solutions to a common sump (**Figure 4**). The wastewater sump is referred to as the "common sump" since the various wastewaters originating from the floor drains commingle in this sump. There is an oil/water separator attached to the east side of the common sump which also drains into the sump. The commingled wastewater from the common sump is conveyed to the retention basins via a single ten-inch diameter pipeline. The dimension of the common sump is ten feet by ten feet with a depth of seventeen feet. The boiler acid wash and fireside wash systems are described below.

When the plant was completed in 1972, the pipelines associated with the two systems were both above ground and buried below the ground surface. The pipelines for the two systems were contained in a single trench from the area of the sediment traps to the common sump (**Figure 4**). In 1987, the buried pipelines were replaced with surface pipelines from the generating units to the common sump and from the common sump to the retention basins. There is no record on why the pipelines were replaced or if there had ever been any leaks on the pipelines. However, an interview with the station engineer revealed that he believed a

leak had occurred. The station management concluded that the pipelines should be on the surface to allow for easy inspection.

The pipelines from the generating units to the common sump are discussed in Section 3.2.1. The locations of the buried pipelines are shown in black on **Figure 4**. The location of the surface pipeline installed in 1987 from the common sump to the retention basins is shown in green. The two short road crossing segments are shown in brown. The surface pipeline in these segments is contained in concrete trenches.

A third system that conveyed wastewater to the retention basins is the pipeline associated with the boiler water treatment facility. In the past, this six-inch diameter pipeline occasionally conveyed low pH wastewater from the regeneration of a demineralizer system.

3.2.1 BOILER ACID WASH

During the production of steam, the boiler tubes could become coated with material deposited from circulating water. The coating would cause the heating cycle to become less efficient. When this occurred, an acid wash would be performed on the boiler. This was performed by injecting an acid solution into the boiler tubes. The resultant waste material was conveyed through pipelines to the common sump and then the retention basin.

Between 1972 and 1987, the waste material from the boiler wash drained into surface collector pipes which directed the material to a ten-inch diameter pipeline. As shown on **Figure 4**, the collector pipelines are located on both sides of the generating units and rests on the massive reinforced concrete footings for the boilers. These footings are about thirty feet wide and ten feet thick. The pipeline was encased in the one-foot thick concrete slab connecting the footings. The two collector pipelines joined and continued to the common sump. The pipeline was buried from the area of the fireside wash sediment traps to the common sump for both units.

In 1987, the original boiler wash pipelines were replaced with surface pipelines which are either at grade or in a concrete trench. It was determined by geophysical methods that the pipeline from Unit 1 to the common sump had been removed. Evidence for the trench route shown on **Figure 4** was observed in the ground radar. However, there was no metallic signature in the magnetic survey. The station has no record of removing the pipeline. The old boiler wash pipeline from Unit 2 remains in the trench location shown on the **Figure 4**.

3.2.2 FIRESIDE WASH

During the burning of fossil fuels, deposits occur on the boiler walls and on the boiler tubes. The deposits cause a reduction in the efficiency of the heat transfer in the tubes. A process called a fireside wash was used to clean the deposits from the boiler when it was determined necessary. This was performed by externally washing the boilers tubes with water. The wash water was collected in a series of drains. The fireside wash drain system is a system of

surface, ten-inch diameter pipelines which conveys the wastewater to the sediment traps adjacent to each unit (**Figure 4**). The dimension of the traps is seven feet by seven feet and about eleven feet in depth. The traps also collect water from the adjacent stacks in a six-inch diameter drain line. Between 1972 and 1987, the traps allowed the wastewater to gravity flow through buried pipelines to the common sump. These pipelines were replaced in 1987 with surface pipelines which are either at grade or in a concrete trench. These pipelines are parallel to the boiler acid wash pipelines.

3.2.3 WATER TREATMENT FACILITY

Prior to 1991, the station operated a demineralizer to produce ultra-clean water for the steam system. This process utilized both acid and caustic materials. The regeneration wastewater was collected in a small sump associated with the treatment facility. The dimension of the sump is eight feet by eight feet with a depth of eight feet. During the process, this sump would often contain water with a low pH value. The station discontinued this process in 1991 and presently uses a portable reverse osmosis system. The sump is presently used to collect regeneration water from the reverse osmosis unit. This wastewater contains concentrations of general anions and cations similar to those generated in home reverse osmosis units.

In 1996, an integrity test was performed on the sump. The results of the test were presented in a report titled "Sump Integrity Report" dated December 19, 1996. It was determined that the sump had leaked low pH water to the soil as shown by soil discoloration and lower than background soil pH values of the samples. Subsequent to the test, the sump was repaired and returned to service.

4. DESCRIPTION OF HAZARDOUS WASTE CONSTITUENTS

This section presents available information on boiler chemical cleaning waste that was used at the station, and the investigation methods used to detect this waste in environmental media at the retention basin site.

Constituents of Concern (COCs) are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the regulated unit (California Code of Regulations, 22 CCR s 66264.93). In this case the regulated unit is the retention basin site. Inorganic COCs present at concentrations that are statistically elevated with respect to site-specific background levels become Constituents of Potential Concern (COPCs) and are carried forward into a health risk assessment (DTSC, 1997). In addition, detected volatile organic compounds (VOCs) become COPCs unless the regulated unit is not the source of VOC contamination or the percentage of detections is determined by DTSC to be statistically insignificant.

Accordingly, inorganic chemicals found in site investigation samples are termed "elevated" if their concentrations are determined through statistical analyses to be significantly higher than corresponding background levels. Background concentrations for inorganic chemicals in site soil and groundwater are statistically-determined average concentrations derived from samples that are unaffected by site operations. Chemicals that are detected at high concentrations are not necessarily elevated if their background concentrations are also detected at high levels. Chloride in coastal groundwater is an example of this situation. Summary statistics for soil, soil gas, and groundwater COC concentrations in site investigation samples are presented in **Tables 1** through **3**.

For the Ormond Beach retention basin site SCE acknowledges its opinion that 1,4 dioxane is the most highly elevated COC found in groundwater samples. 1,1-Dichloroethane (1,1-DCA) is a VOC of secondary concern in groundwater at the site. This acknowledgement is to assist the reader in understanding the weight and probable conclusions that may be formed based on the site investigation data. No VOCs were detected in any soil sample. 1,1,1-Trichloroethane was detected at two soil gas probe locations (in trace amounts). Tetrachloroethene (PCE) was detected at one soil gas probe location.

Statistical analyses for all inorganic COCs will be presented in the Closure Certification Report, to be issued following site remediation [as described in Section 16].) Thus other chemicals could potentially be identified as COPCs. Prior to DTSC approval of SCE's application for site closure, concentrations of all COPCs (elevated chemicals and VOCs) will have to meet the Closure Performance Standards described in Sections 11 or 19.

4.1 LIST OF COMPOUNDS

Refer to Appendix A for a representative analysis of boiler chemical cleaning waste. The chemicals generally associated with boiler chemical cleaning include the following: copper, nickel, vanadium, and zinc. The chemicals with the highest concentrations (greater than 1 mg/l) in Appendix A are: total chromium, copper, fluorine, lead, molybdenum, nickel, and zinc.

4.2 LIST OF TEST METHODS

Analytical test methods used to evaluate the compounds listed in Appendix A are shown in **Table 4** and discussed in Section 9. In summary, metals are analyzed in soil and groundwater samples collected at the retention basin site, while VOCs are analyzed in soil, soil gas, and groundwater samples.

4.3 LIST OF SIGNIFICANT HAZARDOUS WASTE CONSTITUENTS

Refer to Appendix A for a representative analysis of boiler chemical cleaning waste. A preliminary assessment was performed for the metals having the highest concentrations in boiler chemical cleaning waste (listed at the end of Section 4.1), by reviewing concentrations for these metals in on-site soil and groundwater samples (Tables 1a and 3, respectively). The assessment indicated that these metals have higher maximum concentrations in soil and groundwater samples from the exposure area (defined below) than in corresponding background samples.

4.4 BACKGROUND AND SITE INVESTIGATION

Field investigations were performed within and around the retention basin site to characterize soil, soil gas, and groundwater in the area where historical boiler chemical cleaning operations may have led to contamination. For purposes of this Closure Plan, this potential area of contamination will be defined as the "exposure area", which includes the basin, pipeline, and associated down gradient area (**Figure 4**).

Soil gas samples from 91 probe locations (**Figure 5**) in the exposure area were collected in January 2006 and analyzed for VOCs, using Method 8260B, in an on-site mobile laboratory operated by American Analytics (Komex, 2006). The results are summarized in **Table 2a**. For purposes of confirmation, Summa canister samples were collected at six of the 91 locations and analyzed for VOCs, using Method TO-14A, in a fixed laboratory operated by Severn Trent Laboratories, in Santa Ana, California. (Thus a total of 97 soil gas samples were collected from 91 probe locations.) Using Method TO-14A, three VOCs were detected at very low levels (less than or equal to 0.6 ug/l) in the Summa canister samples, as shown in **Table 2b**. An additional VOC (PCE) was detected in one sample analyzed only by method 8260B.

The TO-14A analyses were designed to confirm the results of the 91 analyses performed with Method 8260B. As shown in **Tables 2a** and **2b**, Method TO-14A has detection limits 70 to 200 times lower than for Method 8260B. No chemicals were detected by Method TO-14A at levels above the corresponding detection limit for Method 8260B, thus the results are internally consistent.

Only PCE exceeded its CHHSL (California Environmental Protection Agency, 2005) concentration and this was at one probe location (SG-45) (**Table 2a**). Probe SG-45 is near the demineralizer sump (**Figure 5**) and is surrounded by soil gas probes that were non-detect for PCE. This finding is not a substitute for a soil gas risk assessment, which will be performed as described in Section 11. However, the finding of a very small percentage of CHHSL exceedances indicates that risk levels associated with the detected soil gas concentrations should be relatively low.

Trace amounts (less than 1 ug/L) of ethylbenzene and m\p-xylene were detected in a total of six monitoring wells at sampling events in March and June 1997. The monitoring wells are in the general vicinity of the soil gas detections described above. Otherwise there are no detections of hydrocarbons in groundwater.

The soil sampling program identified two distinct soil types that were characterized separately by collecting both compliance and background soil samples. The soil types are native soil and landscape soil (that was imported to the site).

For the native soil, three hundred fifty three soil samples from 144 borings in the exposure area were collected during the period of August 1997 through August 2006 (Hamilton, 2006). For the native background soil, twenty three soil samples from 9 borings near the exposure area were collected (**Figure 4**).

For the landscape soil, nineteen soil samples from 9 borings in the exposure area were collected during the period of December 2005 through January 2006 (Hamilton, 2006). For the landscape background soil, twelve soil samples from 4 borings near the exposure area were collected (**Figure 4**).

Lists of COCs that were detected by this characterization program are presented in **Tables 1a** and **1b**, for native soil and landscape soil, respectively. No VOCs were detected in any of the 117 soil samples collected beneath the basin liners through November 2003 (Hamilton 2006). As a result, VOC analyses for soil samples collected at the retention basin site were discontinued with DTSC concurrence after November 2003. (However, soil beneath the basin liners was not analyzed for 1,4-dioxane). Relatively high concentrations of metals were found in the landscape soil, however, there is no indication that these concentrations are elevated above the landscape soil background (i.e., no indication of a release in the landscape soil area) (**Table 1b**).

Five hundred eighty-four groundwater samples were collected from 21 monitoring wells in the exposure area during the period of December 1996 through March 2008 (Hamilton, 2008 and **Table 3**). Two hundred three samples were collected from 5 background monitoring wells during the same period. A list of COCs that were detected during this period is presented in **Table 3**. However, prior to September 2001, analytical detection limits in use were generally higher. The monitoring well locations are shown on **Figure 3**. The background well numbers are OB-4, OB-6, OB-7, OB-8, and OB-20.

5. ESTIMATE AND MANAGEMENT OF MAXIMUM INVENTORY

No hazardous waste was stored in the retention basins and appurtenances during the period of characterization (1996 to 2008). The current owner/operator does not have a permit to store hazardous waste in the retention basins. Non-hazardous wastewater is stored and released under the previously noted NPDES permit.

SCE discontinued the practice of storing hazardous waste in the retention basins approximately 6 to 10 years prior to the sale of the station (in 1998), and assumes the current owner has continued the established practice of complying with the NPDES permit.

The maximum potential historical inventory (i.e., the maximum potential inventory before 1996) is equal to the combined volume of the three basins. The capacities of the North Basin (including the BCCB) and the South Basin are estimated to be 4.2 million gallons (MG) and 1.8 MG, respectively. The combined capacity is 6.0 MG, representing the estimated maximum potential inventory that would exist if all three basins were filled with hazardous wastewater at the same time. It is unlikely this situation ever occurred, since the BCCB was used intermittently, and operational safety policy has been to keep the basins below fifty percent of capacity. However, the value of 6.0 MG is useful as a theoretical upper limit on the historical inventory of hazardous wastewater stored at the retention basin site.

6. DECONTAMINATION PROCEDURES FOR EQUIPMENT, STRUCTURES, AND BUILDINGS

The retention basins are emptied and cleaned as a routine operational procedure, to remove wind-blown sand and stormwater sediments. These materials are removed by the station operator to maintain full retention basin storage volume. SCE considers it unlikely that any residual contamination is present in the basin sediments, since the basins have not stored hazardous wastewater for up to twenty years (Section 3). However, it is SCE's opinion that the annual cleaning process described below would effectively remove residual contamination if it were present in the basin sediments. Details of this process are given below.

The retention basins are cleaned approximately once per year or as needed, by the current owner (Reliant Energy). The cleaning procedure is to maintain one basin in service while the opposite basin (e.g., North or South) is drained and allowed to dry out. The sediments are then swept up and placed into a 20 yard roll off container. Once a basin is cleaned, it is put back into service and the same process is repeated for the opposite basin. This process usually takes approximately 30 days to complete.

After the cleaning is completed, samples of the sediments are sent to a certified laboratory for standardized analysis, to determine whether or not they exhibit any hazardous characteristics, as defined in Title 22 of the California Code of Regulations (CCR). These characteristics include ignitability, reactivity, corrosivity, and toxicity. When the analysis establishes the material to be non-hazardous, it is shipped off site to a waste receiving facility licensed to receive such waste.

Documentation from the current owner (Reliant Energy) indicates that sediment removal occurred in November 2003 and March 2004 (Capco Analytical Services, 2003 and 2004). The accompanying Wastestream Information Profile indicates the pond clean-up sediments are non-hazardous (Onyx Environmental, 2003). The boiler chemical cleaning basin stores only rainwater. (Full references are contained in Appendix D of the Closure Plan).

Decontamination of the basin liners is not considered necessary. Comprehensive leachability testing of similar liner material from the former SCE Long Beach Generating Station (Komex, 2005a) indicated there were no leachable contaminants within the liner samples that represented a health risk to ecological or human receptors.

Water has continuously flowed through the pipelines leading to the retention basins, due to normal operation of the generating station over the period of approximately 14 to 18 years since hazardous wastes were last stored in the basins. Due to the operational flow, there should be no sediments from this period remaining in the pipelines.

The common sump connected to the pipelines and basins (**Figure 4**) potentially could contain residual sediments from the period when hazardous wastes were stored in the basins.

Decontamination procedures will include: inspection, solids removal, pressure washing, and testing (confirmation sampling) of the wash water and solids. Based on the list of COCs established for this site, confirmation samples will be tested for metals and VOCs. Decontamination wash water and solids will be removed and properly disposed, based on the results of the analytical testing.

7. CONFIRMATION SAMPLING PLAN FOR CONTAINMENT STRUCTURES, TANKS, AND EQUIPMENT

SCE believes that confirmation sampling at the retention basin site applies only to the sump, since the basins and pipelines no longer contain sediments from the time period when the site facilities were used for storing hazardous waste. Details on the cleaning of facilities at the retention basin site are given in Section 6 above.

Confirmation sampling will be performed in the sump, by testing the wash water after the sump is cleaned. If solids are collected during the confirmation sampling, they will be sampled along with the wash water. The wash water and any solids will be analyzed as described in Section 6, in consultation with DTSC. The analytical methods listed in **Table 4** will be used, as appropriate.

8. SOIL SAMPLING PLAN

Characterization investigations pursuant to the Stipulation began at the facility in 1996. The purpose of the investigations was to determine if the basins or associated conveyance system (pipelines) had released wastewater to the underlying soil. If a release was detected, the nature and extent of the contamination was to be investigated. Sampling investigations at the retention basin site began with groundwater monitoring in 1996 (Section 10). Soil sampling began in 1997 and continued intermittently through 2006. A total of seven soil sampling investigations were preformed to investigate the basins, pipeline and background soils (Hamilton 2006, Table 1).

Soil and soil gas investigations have been performed at the site by SCE, and SCE believes the soil at the retention basin site has been fully characterized. The resulting characterization reports have been reviewed by DTSC. SCE has concluded that the soil and soil gas characterizations are complete and are sufficient to allow SCE to proceed with site remediation and closure. The sampling plans, methods, and analytical results are presented in the Soil Characterization Report (Hamilton, 2006), referenced in Appendix D of the Closure Plan. The confirmation soil sampling plan is described in Section 12.1.

SCE's grid of soil borings was extended outward from the retention basin site until a significant attenuation in contaminant concentration (approaching background levels) was observed. Background concentrations for metals in soil are presented in **Tables 1a** and **1b**. No VOCs were found in soil samples at the site. At the outermost soil sample locations, concentrations of the key metals associated with boiler chemical cleaning (e.g., nickel and vanadium) were attenuated to within the maximum background concentrations. Arsenic was also attenuated to within the maximum background concentrations. Since no VOCs were detected in 117 soil samples collected beneath the basin liners, VOC analyses for soil samples collected at the retention basin site were discontinued, with DTSC concurrence, after November 2003 (Hamilton 2006).

SCE believes the soil gas at the retention basin site has been fully characterized. The sampling plans, methods, and analytical results are presented in the Soil Gas Survey Report (Komex, 2006), referenced in Appendix D of the Closure Plan. Two VOCs were detected in the 91 soil gas samples analyzed using Method 8260B (**Table 2a**). Using Method TO-14A, three VOCs were detected at very low levels (less than or equal to 0.6 ug/l) in the six Summa canister samples (**Table 2b**). One VOC (benzene) was detected by both analytical methods. Further details are given in Section 4.4. As shown in Tables 2a and 2b, Method TO-14A has lower detection limits than Method 8260B.

9. ANALYTICAL TEST METHODS

Analytical test methods used for soil, soil gas, and groundwater samples collected during the field investigations (Section 4) are summarized in **Table 4**. The analytical work for soil and groundwater samples was performed by Weck Laboratories, Inc, an Environmental Laboratory Accreditation Program (ELAP) certified lab. Soil gas samples were analyzed by American Analytics and Severn Trent Laboratories, which are also ELAP certified.

Soil samples collected at the retention basin site were analyzed for metals using the United States Environmental Protection Agency (USEPA) methods shown in **Table 4** (Hamilton, 2006). Soil samples were analyzed for VOCs using USEPA Method 8260B.

Soil gas samples collected at the retention basin site were analyzed for VOCs using USEPA Method 8260B (Komex, 2006). Additionally, Summa canister samples were collected at six of the 91 soil gas probe locations and were analyzed for VOCs using USEPA Method TO-14A (Komex, 2006).

Groundwater samples collected at the retention basin site were analyzed for metals using the USEPA methods shown in **Table 4** (Hamilton, 2008). Groundwater samples were analyzed for VOCs using USEPA Method 8260B.

10. GROUNDWATER SAMPLING

The station is located in the Santa Clara River Valley Groundwater Basin and the Oxnard Sub-basin. The Los Angeles Regional Water Quality Control Board's Basin Plan indicates that the existing beneficial uses for the Oxnard Sub-basin are Municipal, Industrial, Process, and Agriculture (RWQCB, 2006).

Characterization investigations pursuant to 22 CCR 66265.98 began at the facility in 1996. Between December 1996 and September 1997, quarterly groundwater sampling events occurred at the retention basin site. The purpose of the sampling was a Detection Monitoring program for the basins. An annual report describing the four quarters of groundwater data was prepared for the DTSC in January 1998. A hiatus from sampling occurred during the report review period with quarterly sampling resuming in June 1998.

Quarterly sampling reports have been submitted to the DTSC after each sampling event except for the December events. The December events are incorporated in to an annual groundwater Monitoring Report for the sampling year. Each annual report presents data inclusive of all previous years. The quarterly reports are data packages that contain all groundwater data collected from the quarterly event and are also inclusive of prior events.

The DTSC directed Edison to begin the Evaluation Monitoring phase of the groundwater investigation in a letter dated June 1, 1998. Their review of the annual groundwater report had concluded the next phase of monitoring was necessary. Part of the evaluation monitoring process is the analytical testing of groundwater samples for the constituents listed on Appendix IX to Chapter 14. The initial sampling for the Appendix IX list of compounds was performed at the first quarter sampling event in 2000 (March) and has been performed annually at the March event. There have presently been seven annual sampling events that included the Appendix IX list of compounds.

SCE believes the groundwater at the retention basin site has been fully characterized. The sampling plans, methods, and analytical results are presented in the Water Quality Monitoring Program and Sampling and Analysis Plan (Hamilton, 1996 and 2000), and the most recent Annual Groundwater Monitoring report (Hamilton, 2008). These documents are referenced in Appendix D of this Closure Plan. The monitoring well network was extended outward from the retention basin site until a significant attenuation in contaminant concentrations (approaching background levels) was observed. Background concentrations for groundwater are presented in **Table 3**.

Groundwater sampling data considered for site closure evaluations were collected quarterly during December 1996 through March 2008. However, analytical detections limits decreased during this period. Recent data have lower detection limits and are more relevant to assessing current conditions.

To select an appropriate time period for groundwater data evaluation, groundwater samples collected during the last six years (2001 to 2007) will be used for the evaluations described in this Closure Plan.

All monitoring wells included in the sampling program, except the background wells (OB-4, OB-6, OB-7, OB-8 and OB-20), are within the exposure area for risk assessment purposes.

The current status is that groundwater monitoring investigations have been performed at the site by SCE at the monitoring well locations shown on **Figure 3**. **Table 1** of the Annual Groundwater Monitoring Report (Hamilton, 2008) describes construction details for the monitoring wells. Five hundred eighty-four groundwater samples from 21 monitoring wells in the exposure area were collected during the period of December 1996 through March 2008 (Hamilton, 2008 and **Table 3**). The resulting characterization reports have been reviewed by DTSC. SCE has concluded that the monitoring well network is complete and the data collected are sufficient to allow SCE to proceed with site remediation and closure.

11. CLOSURE PERFORMANCE STANDARDS (CLEANUP LEVELS)

SCE intends to close the retention basin site to meet clean closure (unrestricted land use standards) following site remediation (**Section 12** and **Appendix B**). Clean closure can be achieved in accordance with Closure Performance Standards either by: 1) Demonstrating that no COPCs are identified at the retention basin site through site characterization and statistical analysis, or 2) Demonstrating that COPCs identified at the retention basin site were remediated to concentrations that are below background or risk-based criteria. Background concentrations for metals and groundwater are presented in **Tables 1a, 1b** and **3**, respectively. The distinction between the terms "COC" and "COPC", along with the definition of "background" concentrations, are explained in **Section 4**.

Figure 6 is a Conceptual Site Model (CSM) that illustrates the potential exposure routes from the points of chemical release at the retention basin site to human and ecological receptors. Under current (2008) land use conditions, the potential human receptors are industrial workers and construction workers. Under future unrestricted land use conditions (i.e., after the generating station is decommissioned and removed), a resident is considered as a hypothetical human receptor in order to support closure evaluations. Potential exposure routes to aquatic and terrestrial ecological receptors will be evaluated under both current and future land use conditions.

The North and South retention basins are currently lined with a single layer of asphaltic concrete covered by a single layer of a synthetic HDPE liner. The BCCB is currently lined with a single layer of asphaltic concrete covered by a double layer of a synthetic HDPE liner and has a leachate collection system installed between the two layers of HDPE liner (**Section 3**). Although the remainder of the retention basin site is unpaved, there are no potential direct exposures (i.e., ingestion or dermal contact) by industrial workers with COPCs in surface or subsurface soil, as the industrial workers don't have access to soil or groundwater beneath the basins or pipelines. Similarly, indirect contact through inhalation of dust-borne particulates is also currently incomplete for industrial workers. Construction workers could potentially contact surface and subsurface soils and be exposed to COPCs through ingestion, dermal contact, or dust inhalation should construction activities occur at the retention basin site, although this is unlikely while the station is operating. Thus, although these pathways are shown as potentially complete on **Figure 6**, they are likely to be very limited, if they occur at all.

VOCs were detected in soil gas, which could potentially migrate through soil and be emitted to ambient (outdoor) air. Thus, under current conditions industrial workers and construction workers could be exposed to soil gas through the subsequent inhalation of ambient air.

The groundwater ingestion and inhalation exposure routes are currently incomplete for industrial workers (because the potable water at the station is supplied by the local

municipality). Similarly, it is assumed that construction workers are not exposed to COPCs in groundwater by ingestion. Under current conditions, a construction worker assumed to be working in an onsite excavation could potentially be exposed by dermal contact with groundwater and inhalation of vapors emitted directly from groundwater that may seep into the excavation. The latter exposure is indicated on **Figure 6** as volatilization from the groundwater secondary source to the outdoor air exposure point.

As described in **Section 3**, nonhazardous wastewater containing minor amounts of oil, grease, and suspended solids, is stored in the retention basins. The wastewater from the basins is comingled with cooling water from the station and discharged to the ocean under the provisions of an NPDES permit (Hamilton 2006). Therefore, although there is a possibility that chemicals and water in the retention basins may be released to the ocean under current conditions, this discharge would be substantially diluted and is likely to be an incomplete or insignificant exposure pathway for aquatic receptors. Therefore, wastewater is not likely to be a secondary source, as shown on **Figure 6**.

Also, given the highly developed nature of the station property, sensitive terrestrial receptors are not likely to be present on the site. Potential exposure routes from the retention basins to aquatic and terrestrial receptors will be determined through a scoping ecological risk assessment, supplemented, as appropriate, with chemical and biological monitoring conducted in support of the NPDES permit and in consultation with DTSC, as illustrated on **Figure 6**.

Under future conditions, the site is assumed to have no basins, liners, pipelines or sumps and the surface is assumed to be unpaved. A future resident is assumed hypothetically to come into contact with the surface and subsurface soil (assuming subsurface soils are disturbed and re-distributed at the surface), dust-borne particulates, soil gas, and groundwater (see **Figure 6**) through ingestion, dermal contact, and inhalation of airborne dust and vapors (with indoor air inhalation evaluated preferentially for vapor emissions from soil gas or groundwater, since the limited dispersion in indoor air typically results in higher exposures than in outdoor air). A future industrial worker is assumed hypothetically to be exposed through the same soil-related and vapor inhalation routes as a resident. The construction worker could be exposed directly to soil (ingestion, dermal) and to dusts and vapors emitted from soil, soil gas, or groundwater to outdoor air. As indicated above for current construction workers, future construction workers could potentially be exposed by dermal contact with groundwater and inhalation of vapors emitted directly from groundwater that may seep into an excavation.

Further, the groundwater exposures for industrial and construction workers shown on **Figure 6** are assumed to be limited, based on the following rationale:

- Groundwater ingestion for residents poses a more restrictive constraint for assessing risk than groundwater ingestion for industrial and construction workers. This

exposure route (i.e., for resident receptors) is included on **Figure 6**. Thus industrial and construction workers are not shown as receptors for the groundwater ingestion exposure route.

- Industrial workers are unlikely to be exposed by direct dermal contact with groundwater.
- The groundwater inhalation route (shown in **Figure 6**) accounts for residential showering, which doesn't apply to industrial and construction workers, since they are assumed to live off-site.
- Construction workers may be exposed to volatiles released directly to outdoor air should groundwater seep into an excavation (as discussed above).

Based on long-term monitoring of the groundwater, it is concluded that groundwater moves from west to east, likely at a very low flow velocity given the extremely flat gradient and stable plume observed at the site (Section 2.2). In addition, the plume is bounded by the monitoring well network currently in place at the site (Hamilton 2008). Thus, evaluation of future on-site residential exposures would provide a health protective assessment of groundwater impacts.

The scoping ERA will examine whether there are any aquatic or terrestrial receptors in the immediate vicinity of the site that could be exposed to constituents in soil or shallow groundwater. Findings of the biological survey described in Section 12.3.2 will be considered in developing the scoping ERA. Additional information will be collected during remediation. Accordingly, the CSM may be modified based on any determinations indicating that future (post-remediation) conditions differ from those depicted in **Figure 6**. If complete exposure routes are identified, an evaluation will be performed to confirm that closure performance standards are met to achieve protection of ecological receptors and the environment. If necessary, based on the results of the evaluation and consultation with DTSC, additional remediation will be performed.

The suite of COCs (listed in **Tables 1** through **3**) analyzed and reported in the site characterization reports will be evaluated for site closure. Each COC can potentially become a COPC according to the DTSC criteria for identifying statistically elevated chemical concentrations (**Section 4**).

The initial (primary) closure performance standards for metals in the soil and groundwater are the corresponding background levels. In the event that it is not technically feasible to remediate metals to background concentrations or, in cases where VOCs were detected, the closure performance standards will be as follows:

1. For the site soil, the closure performance standard will be health risk-based criteria for unrestricted closure. USEPA guidance indicates that a cumulative carcinogenic risk

range between 1 in 1,000,000 and 1 in 10,000 and 1 in (1×10^{-6} and 1×10^{-4}) is considered to be protective of public health. The lower end of this risk range is typically applied to residential situations and is considered the point of departure by the U.S. EPA and DTSC. Accordingly, the human health risk-based criteria for carcinogens will be based on a target carcinogenic risk of 1×10^{-6} (cumulative for all COPCs) and the human health risk-based criteria for noncarcinogens will be based on a target hazard index of 1. A post remedial risk assessment will be performed and presented in the Closure Certification Report (Section 16).

2. For groundwater, the closure performance standards will be the maximum contaminant levels (MCLs) or the notification level (NLs) for 1,4-dioxane (0.003 mg/L) for protection of human receptors and, if applicable, the water quality criteria protective of ecological receptors, such as the most protective criteria for aquatic organisms in the California Toxics Rule. Closure Performance Standards for protection of terrestrial ecological receptors will be developed in consultation with DTSC. A pilot study was conducted in August 2007 to determine whether the 1,4-dioxane detected in groundwater could be removed using granulated activated carbon. The pilot study determined that the activated carbon would remove 1,4-dioxane from the site groundwater with the proper contact time (Hamilton 2007).
3. For VOCs in soil gas the closure performance standard will be health risk-based criteria for unrestricted closure as described above. Risk-based closure performance standards for metals in soil and organics in soil gas will be evaluated to ensure they are protective of groundwater and ambient water quality.

A Closure Certification Report (**Section 16**) will be generated to demonstrate that the closure performance standards described in this section are met following remediation.

A Land-Use Covenant (LUC) and Implementation and Enforcement Plan (IEP) will be prepared and approved by DTSC, as described in **Section 19**, if clean closure cannot be achieved.

12. SOIL AND GROUNDWATER REMOVAL/CLEANUP PROCEDURES

The overall remediation strategy will be to use SCE's characterization data, statistical analyses, and risk assessments to identify the specific contaminants and locations that require remediation to achieve the site's closure performance standards.

12.1 SOIL REMOVAL/CLEANUP PROCEDURES

The closure performance standards (Section 11) and supporting statistical analyses and risk assessments may indicate that soil excavation should be performed. In this case the following procedures would be used. Confirmation soil samples would be collected from the walls and bottom of the excavation(s) on approximate twenty foot centers, with a minimum of one sample on each sidewall. The samples would be analyzed for the COPCs identified through statistical and risk analysis of the characterization data, in consultation with DTSC. The methods listed in **Table 4** would be used, as appropriate.

If analyses of the confirmation samples show that the closure performance standards have not been met, then additional soil may be excavated laterally and vertically to the water table. The confirmation sampling would be repeated as well.

The completed excavation would be backfilled with clean, compacted fill (for which confirmation samples would also be collected and analyzed). The basin liner would be repaired as necessary. The remediation equipment would be decontaminated by pressure washing. Decontamination wash water and residue would be characterized and removed for disposal at a permitted facility off-site as described in Section 6.

The excavated soil would be characterized in accordance with the CCR Title 22 as described in Section 6, and disposed of at an appropriate facility, based on a determination of whether or not it is hazardous. Investigation-derived waste would not be stored on-site for more than 90 days. Soil removal, transport, and cleanup procedures would conform to DTSC guidelines. A Remedial Implementation Plan would be prepared and approved by DTSC prior to initiation of cleanup.

The Closure Certification Report (Section 16) will provide a comprehensive assessment of any chemicals that may require remediation.

12.2 GROUNDWATER REMOVAL/CLEANUP PROCEDURES

A preliminary assessment of the key COCs in groundwater indicates that 1,4 dioxane is the most highly elevated compound. The Closure Certification Report (Section 16) will provide a comprehensive assessment of the chemicals that require remediation. It is anticipated that groundwater at the site will be remediated by a pump and treat approach using granular activated carbon. It is assumed the pumping system will contain and capture the plume before it migrates beyond the monitoring well network at its present (inferred very slow) rate

of movement. The Targeted Area of Remediation (**Figure 3**) is based on groundwater capture limits inferred from Figure 4 of the Pilot Test Report (Hamilton, 2007). This capture area resulted from pumping Well OB-23 at 1 gallon per minute (gpm) for 24 hours followed by pumping at 2 gpm for 4 hours. As stated in Appendix B, SCE initially proposes a percolation trench type system that will be located upgradient of the contaminated aquifer area, for disposal of treated groundwater.

If the plume moves beyond the monitoring well network (**Figure 3**) before the pump and treat remedy is completed, the monitoring network will be expanded to maintain definition of the plume's areal extent. In general, the remediation procedures listed in Appendices B and E would be followed.

On-going groundwater monitoring (Section 15) would serve as confirmation sampling to evaluate the efficacy of the treatment chemicals on meeting the site's Closure Performance Standards for groundwater. Groundwater samples will be collected and analyzed according to the existing Water Quality Monitoring Program and Sampling and Analysis Plan (Hamilton, 1996 and 2000).

12.3 CULTURAL AND BIOLOGICAL RESOURCES

12.3.1 CULTURAL RESOURCES

An SCE archaeologist conducted a record search with the South Central Coastal Information Center, California State University, Fullerton in May 2008 (Schmidt 2008) to determine if cultural resources are recorded on the station site. The methodology and findings of this record search are presented below.

The purpose of the records search was to determine the extent of previous surveys within a one half-mile (800-meter) radius of the wastewater retention basins, and whether previously documented prehistoric or historic archaeological sites, architectural resources, cultural landscapes, or ethnic resources exist within this area. Materials reviewed included survey and evaluation reports, archaeological site records, historic maps, and listings of resources in the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Points of Historical Interest, California Historical Landmarks, and National Historic Landmarks. The basins are located in areas that have been previously disturbed during the construction of the generating station. As a result of this previous ground disturbance, no further archaeological review is required for the proposed undertaking. If the scope of work changes, however, further archaeological assessments may be necessary. Thus, there is a low likelihood of encountering buried cultural resources for the proposed treatment plan for the two wastewater retention basins at the former Ormond Beach Generating Station, Oxnard, Ventura County, California.

To further ensure that such resources are not impacted, SCE will have an archeologist present during any earth moving activities, with appropriate 'project control measures' enacted. In the event that cultural resources are encountered during any future earth disturbing activities, all work must halt at that location until the resources can be properly evaluated by a qualified archaeologist. Further, if human remains are unearthed during excavation, State Health and Safety Code Section 7050.5 state that "…no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and distribution pursuant to Public Resources Code Section 5097.98."

12.3.2 BIOLOGICAL RESOURCES

This biological resources summary assessment is based upon the results of a literature review and biological survey conducted December 9, 2008 by Keane Biological Consulting (Hamilton and Keane, 2008) and a review of reports from previous biological surveys (Cantle, 2008 and Werner, 2007) conducted by BioResource Consulting for Southern California Edison at Ormond Beach near the project area. Although special status species are known to occur in the Ormond Beach area, closure activities described in the Wastewater Retention Basin Closure Plan for the Reliant Energy Ormond Beach Generating Station have a minimal potential to impact sensitive biological resources. The project, as proposed, will take place within the perimeter of the fenceline surrounding the facility in previously disturbed vegetated, sparsely vegetated, and unvegetated areas. Areas dominated by non-native vegetation have a very low potential to support sensitive species with the potential to occur in the project area. Although salt marsh bird's beak (Cordylanthus maritimus spp. maritimus) was not observed during the survey, one portion of the project area has a low potential to support this federal and state endangered plant species; this area, located near Well OB-23 has soil and native vegetation (mainly saltgrass) indicative of habitat with the potential to support this species. To avoid potential impacts to saltmarsh bird's beak a preconstruction survey will be conducted within this area during the appropriate survey season to determine the presence/absence of the species. Any saltmarsh bird's beak plants would be flagged or fenced for avoidance. In addition, standard SCE avoidance measure will be implemented during project activities to avoid or reduce potential impacts to biological resources.

13. CLOSURE COST ESTIMATE

A cost estimate for performing the anticipated remediation is described in Appendix E. At this time, it has not been demonstrated whether soil remediation will be necessary. If the statistical evaluation and risk assessment identify COCs that exceed the Closure Performance Standards, a remedial action work plan will be developed along with a cost estimate. This information will be used to update the Financial Assurance Document included in Section 14 and Appendix F.

Costs were estimated for pumping and treating the 1,4-dioxane plume as contoured by Hamilton (2008), using an approach based on the Remediation Pilot Test Program (Hamilton 2007). The costs include implementation of an assumed remedial technology and associated testing to ensure compliance with discharge requirements and efficacy of the remediation process. The total estimated cost for groundwater remediation under these scenarios is $888,000 (**Table E-1**).

14. FINANCIAL RESPONSIBILITY

A statement of financial assurance is included in Appendix F.

15. CLOSURE IMPLEMENTATION SCHEDULE

The time frame for any remedial activities will be based on the approved closure plan date.

Post-remediation groundwater monitoring to track the effectiveness of the remedy will continue for a period of up to five years to assess progress toward meeting the Closure Performance Standards (Section 11).

Progress reports and /or continued quarterly groundwater monitoring reports will be submitted during that assessment period, as required by DTSC.

Details concerning the contingency plan that will be followed if the Closure Performance Standards cannot be met within five years are presented below (Section 19).

If the remedy is found to be effective in meeting the standards within five years, groundwater monitoring to confirm clean conditions will continue for a period consistent with 66265.96. The groundwater monitoring network may be modified (streamlined) depending on the timeframe for certification of the remedy.

After SCE demonstrates that the Closure Performance Standards (Section 11 or 19) have been met, a Closure Certification Report will be prepared.

A schedule showing major milestones and corresponding dates to meet the above timeframe will be presented prior to initiating remediation field work. If necessary (e.g., due to unforeseen circumstances) SCE would request that DTSC consider revising this schedule.

16. CLOSURE CERTIFICATION REPORT REQUIREMENTS

The Closure Certification Report will document the results of site characterization activities, statistical analyses to select Chemicals of Potential Concern, and risk assessments used to develop Closure Performance Standards for the site. In addition, the Closure Certification Report will document the treatability studies, remediation activities, evaluation of confirmation sampling, and present the necessary data and evaluation to support the conclusion that the site's Closure Performance Standards have been met for soil, soil gas, and groundwater. Note that the CSM (**Figure 6**) and list of COPCs will be re-evaluated to account for post-remediation data such as results of confirmation sampling.

17. PERSONAL PROTECTIVE EQUIPMENT (WORKER HEALTH AND SAFETY)

A health and safety plan (HaSP) for performing removal activities at the retention basin site will be prepared by the remediation contractor and approved by DTSC prior to commencement of work.

18. SITE SECURITY

The station is an operating facility and is gated and guarded to prevent unauthorized access. The site is surrounded by fences that are eight feet high, with outward-facing barbed-wire extensions. The site also has an electronic surveillance system.

19. CONTINGENCY POST-CLOSURE PLAN

Soil and groundwater at the retention basin site will be remediated as described in Section 12 above, and Appendices B and E. Post-remediation soil and groundwater data will be assessed to demonstrate compliance with the Closure Performance Standards presented in Section 11. Further investigation of site media will be performed as the situation dictates, in consultation with DTSC.

In addition, on-going groundwater monitoring to assess the efficacy of the treatment program (Section 15) will be performed. An outline for the post-closure monitoring plan is presented in Appendix C. Trend analyses using post-closure groundwater monitoring data, continuing for a maximum of five years, will be performed to demonstrate compliance with the Closure Performance Standards presented in Section 11.

If it cannot be demonstrated that Closure Performance Standards have been met for groundwater, then alternative treatment methods will be evaluated. In the event that the Closure Performance Standards are not met after five years, SCE will implement the Contingency Post-Closure Plan described below.

Under the Contingency Post-Closure Plan SCE would close the retention basin site to meet industrial closure (restricted land use standards). A Land-Use Covenant (LUC) and Implementation and Enforcement Plan (IEP) would be provided and approved by DTSC.

Industrial closure can be achieved in accordance with Closure Performance Standards either by demonstrating that no COPCs are identified for the retention basin site, or, alternatively, if one or more COPCs are identified, by performing a risk assessment demonstrating that the resulting risk levels for the COPCs are within prescribed standards for industrial site closure.

Closure Performance Standards for the retention basin site would be expressed in terms of risk, by requiring that risk levels for human receptors potentially exposed to the identified COPCs are within USEPA and DTSC prescribed standards for industrial closure. USEPA guidance indicates that a carcinogenic risk probability between 1 in 10,000 and 1 in 1,000,000 (1×10^{-4} and 1×10^{-6}) is considered to be both safe and protective of public health. Accordingly, a carcinogenic risk probability of 1×10^{-5} will be adopted to be protective of future industrial workers. A hazard index of 1 will be used as the target criterion for evaluating potential non-carcinogenic health effects.

On the basis of these determinations, **Figure 6** indicates there are currently no complete exposure routes for aquatic or terrestrial receptors. The CSM may be modified based on any determinations indicating that future conditions differ from those depicted in **Figure 6**. If complete exposure routes are identified, closure performance standards may need to be met to achieve protection of ecological receptors and the environment. The ecological and environmental closure performance standards would include water quality criteria, such as

the most protective criteria protective of aquatic organisms in the California Toxics Rule or the California Ocean Plan. These would be used to examine any constituents that may reach the drainage canals in the future.

The suite of COCs analyzed and reported in the site characterization reports (listed in **Tables 1** through **3**) will be evaluated for site closure. Each COC can potentially become a COPC according to the DTSC criteria for identifying statistically elevated chemical concentrations (Section 4).

Closure performance standards for the retention basin site are summarized below:

a. The closure performance standard for metals in soil will be background, or the risk-based concentration for industrial site closure (as noted above and based on **Figure 6**), whichever is greater.

b. The closure performance standard for metals in groundwater will be background, or the risk-based concentrations protective of human receptors, for industrial site closure (as noted above and based on **Figure 6**), whichever is greater. In the event that the MCL is found to be lower than risk-based concentrations and greater than background, then the MCL will be used as the closure performance standard for metals in groundwater. For chemicals that have no MCL (e.g., vanadium), a risk-based standard would be used in place of the MCL.

c. Risk-based closure standards will be developed as needed if additional complete exposure routes are identified after updating the CSM to account for post-remediation data. **Figure 6**, the pre-remediation CSM, would be updated under this scenario.

A Closure Certification Report (Section 16) will be generated to demonstrate that these closure performance standards are met following remediation.

If the alternative treatment methods are unsuccessful in demonstrating that Closure Performance Standards can be met for groundwater, then a Post-Closure Permit Application will be submitted.

Tables

Table 1a
Summary of Frequency of Occurrence of Detects and Non-detects for Basin and Pipeline Soils at
Ormond Beach Generating Station
August 1997 through August 2006

		Compliance					Background				
Parameter	**Units**	**N**	**NonDetects**	**% detects**	**Minimum**	**Maximum**	**N**	**NonDetects**	**% detects**	**Minimum**	**Maximum**
Aluminum	mg/kg	353	0	100%	500	31,000	23	0	100%	1,900	18,000
Antimony	mg/kg	353	267	24%	0.14	2.3	23	19	17%	0.35	0.72
Arsenic	mg/kg	353	1	100%	0.35	15	23	0	100%	0.98	3.8
Barium	mg/kg	353	2	99%	0.71	2,750	23	0	100%	20	170
Beryllium	mg/kg	353	19	95%	0.07	3.2	23	1	96%	0.07	0.52
Cadmium	mg/kg	353	20	94%	0.07	6.21	23	2	91%	0.07	1.2
Chromium, Total	mg/kg	353	0	100%	1.2	74	23	0	100%	4.1	44
Chromium VI	mg/kg	353	353	0%	0.35	1.8	23	23	0%	1.1	1.13
Cobalt	mg/kg	353	1	100%	0.13	30	23	0	100%	1.1	17
Copper	mg/kg	353	0	100%	1.1	300	23	0	100%	2.3	26
Iron	mg/kg	353	0	100%	880	69,600	23	0	100%	4,400	34,000
Lead	mg/kg	353	1	100%	0.35	71	23	0	100%	1.9	28
Manganese	mg/kg	353	119	66%	1.4	820	23	0	100%	64	600
Mercury	mg/kg	353	188	47%	0.007	0.31	23	2	91%	0.007	0.04
Molybdenum	mg/kg	353	4	99%	0.14	24	23	1	96%	0.14	2.40
Nickel	mg/kg	353	0	100%	0.51	300	23	0	100%	3.4	31
Selenium	mg/kg	353	343	3%	0.35	2.4	23	22	4%	0.35	0.59
Silver	mg/kg	353	317	10%	0.07	2.6	23	23	0%	0.07	0.07
Thallium	mg/kg	353	288	18%	0.07	2.3	23	23	0%	0.35	0.35
Vanadium	mg/kg	353	5	99%	0.71	336	23	0	100%	7.3	48
Zinc	mg/kg	353	1	100%	1.5	300	23	0	100%	9.9	55

Notes: Detected < 10%

1 - Compliance samples represent Basins and Pipeline Samples (excluding SP-8 through SP-16)

2 - A total of 353 native soil samples were collected in the Exposure Area.

3 - The background data shown include 23 native soil samples.

Table 1b
Summary of Frequency of Occurrence of Detects and Non-detects for Landscape Soil at
Ormond Beach Generating Station
December 2005 through January 2006

		Compliance					Background				
Parameter	**Units**	**N**	**NonDetects**	**% detects**	**Minimum**	**Maximum**	**N**	**NonDetects**	**% detects**	**Minimum**	**Maximum**
Aluminum	mg/kg	19	0	100%	5,100	24,000	12	0	100%	16,000	23,000
Antimony	mg/kg	19	16	16%	0.35	0.54	12	12	0%	0.35	0.35
Arsenic	mg/kg	19	0	100%	3.1	16	12	0	100%	3.2	16
Barium	mg/kg	19	0	100%	33	100	12	0	100%	34	100
Beryllium	mg/kg	19	0	100%	0.20	0.86	12	0	100%	0.39	0.87
Cadmium	mg/kg	19	0	100%	0.21	1.00	12	0	100%	0.44	0.95
Chromium, Total	mg/kg	19	0	100%	10	38	12	0	100%	25	33
Chromium VI	mg/kg	19	19	0%	1.8	1.77	12	12	0%	1.1	1.8
Cobalt	mg/kg	19	0	100%	4.0	20	12	0	100%	7.6	13
Copper	mg/kg	19	0	100%	7.7	43	12	0	100%	27	41
Iron	mg/kg	19	0	100%	8,500	34,000	12	0	100%	24,000	30,000
Lead	mg/kg	19	0	100%	10	74	12	0	100%	3.2	74
Manganese	mg/kg	19	0	100%	100	540	12	0	100%	280	330
Mercury	mg/kg	19	0	100%	0.02	0.08	12	0	100%	0.02	0.03
Molybdenum	mg/kg	19	0	100%	0.61	1.70	12	0	100%	1.2	1.7
Nickel	mg/kg	19	0	100%	19	73	12	0	100%	22	43
Selenium	mg/kg	19	17	11%	0.35	0.59	12	7	42%	0.35	0.59
Silver	mg/kg	19	18	5%	0.07	0.14	12	12	0%	0.07	0.07
Thallium	mg/kg	19	19	0%	0.35	0.35	12	12	0%	0.35	0.35
Vanadium	mg/kg	19	0	100%	38	86	12	0	100%	48	63
Zinc	mg/kg	19	0	100%	29	320	12	0	100%	53	91

Notes: Detected < 10%

1 - Compliance samples represent the Surface Pipeline Samples (SP-8 through SP-16)

2 - A total of 19 landscape soil samples were collected in the Exposure Area.

3 - The background data shown include 12 landscape samples.

Table 2a
Summary of Frequency of Occurrence of Detects and Non-detects for Soil Gas Using Method 8260B at Ormond Beach Generating Station
January 2006

		Compliance[1,2]			Method Detection	Range of Concentration	Residential
Parameter	**Units**	**N**	**NonDetects**	**% detects**	**Limit**	**Detected**	**CHHSL[4]**
Benzene[6]	*ug/l*	*91*	*88*	*3%*	*1*	*1.1 to 2.3*	*0.0362*
Carbon tetrachloride	ug/l	91	91	0%	1	ND	0.0251
Chloroethane	ug/l	91	91	0%	1	ND	NA[5]
Chloroform	ug/l	91	91	0%	1	ND	NA[5]
Dichlorodifluoromethane	ug/l	91	91	0%	1	ND	NA[5]
1,1-Dichloroethane	ug/l	91	91	0%	1	ND	NA[5]
1,2-Dicloroethane	ug/l	91	91	0%	1	ND	0.0496
cis-1,2-Dichloroethene	ug/l	91	91	0%	1	ND	15.9
1,1-Dichloroethylene	ug/l	91	91	0%	1	ND	NA[5]
Ethylbenzene	ug/l	91	91	0%	1	ND	NA[5]
Methylene chloride	ug/l	91	91	0%	10	ND	NA[5]
1,1,1,2-Tetrachloroethane	ug/l	91	91	0%	1	ND	NA[5]
1,1,2,2-Tetrachloroethane	ug/l	91	91	0%	1	ND	NA[5]
Tetrachloroethene	ug/l	91	90	1%	1	1.3	0.18
Toluene	ug/l	91	91	0%	1	ND	135
trans-1,2-Dichloroethene	ug/l	91	91	0%	1	ND	32
1,1,1-Trichloroethane	ug/l	91	91	0%	1	ND	991
1,1,2-Trichloroethane	ug/l	91	91	0%	1	ND	NA[5]
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	91	91	0%	5	ND	NA[5]
Trichloroethene	ug/l	91	91	0%	1	ND	0.528
Trichlorofluoromethane	ug/l	91	91	0%	1	ND	NA[5]
Vinyl chloride	ug/l	91	91	0%	1	ND	0.0133
m,p-Xylene	ug/l	91	91	0%	1	ND	319
o-Xylene[7]	ug/l	91	91	0%	1	ND	315

Notes:

1 - Compliance samples represent the soil gas Exposure Area (Basin and Pipeline Area)

2 - A total of 91 soil gas probe locations in the Exposure Area were sampled and analyzed using Method 8260B.

3 - A total of 91 soil gas samples were analyzed by an on-site mobile laboratory, and in addition, six of the 91 locations were analyzed by an off-site laboratory using Summa canister samples (Table 2b).

4 - California Human Health Screening Levels for Shallow Soil Gas (vapor intrusion), Residential Land Use (California EPA, 2005)

5 - Not Available

6 - Benzene was detected in two compromised soil gas probes (SG-33 and SG-50) only. Compromised probes were indicated by the presence of the leak-detection tracer gas (isobutane). Analytical results for SG-33 and SG-50 are provided here to be consistent with previous reporting, but the sample results should be disregarded (Komex, 2006).

7 - The CHHSL for o-Xylene is the Representative Screening Number for mixed xylenes. The representative value for mixed xylenes is based on the calculated lowest one among the isomers.

Definitions:

ND - Non Detect

Table 2b
Summary of Frequency of Occurrence of Detects and Non-detects for Soil Gas Using Method TO-14A at
Ormond Beach Generating Station
January 2006

		Compliance[1,2]			Method Detection	Range of Concentration	Residential
Parameter	**Units**	**N**	**NonDetects**	**% detects**	**Limit**	**Detected**	**CHHSL[4]**
Benzene	ug/l	6	4	33%	0.1	0.6	0.0362
Carbon tetrachloride	ug/l	6	6	0%	0.1	ND	0.0251
Chlorobenzene	ug/l	6	6	0%	0.1	ND	NA[5]
Chloroethane	ug/l	6	6	0%	0.1	ND	NA[5]
Chloroform	ug/l	6	6	0%	0.1	ND	NA[5]
Chloromethane	ug/l	6	6	0%	0.1	ND	NA[5]
1,2-Dibromoethane	ug/l	6	6	0%	0.1	ND	NA[5]
1,2-Dichlorobenzene	ug/l	6	6	0%	0.1	ND	NA[5]
1,3-Dichlorobenzene	ug/l	6	6	0%	0.1	ND	NA[5]
1,4-Dichlorobenzene	ug/l	6	6	0%	0.1	ND	NA[5]
Dichlorodifluoromethane	ug/l	6	6	0%	0.1	ND	NA[5]
1,1-Dichloroethene	ug/l	6	6	0%	0.1	ND	NA[5]
cis-1,2-Dichloroethene	ug/l	6	6	0%	0.1	ND	15.9
1,2-Dichloropropane	ug/l	6	6	0%	0.1	ND	NA[5]
cis-1,3-Dichloropropene	ug/l	6	6	0%	0.1	ND	NA[5]
trans-1,3-Dichloropropylene	ug/l	6	6	0%	0.1	ND	NA[5]
Dichlorotetrafluoroethane	ug/l	6	6	0%	0.1	ND	NA[5]
Ethylbenzene	ug/l	6	6	0%	0.1	ND	NA[5]

Table 2b
Summary of Frequency of Occurrence of Detects and Non-detects for Soil Gas Using Method TO-14A at
Ormond Beach Generating Station
January 2006

Parameter	Units	Compliance[1,2] N	Compliance[1,2] NonDetects	Compliance[1,2] % detects	Method Detection Limit	Range of Concentration Detected	Residential CHHSL[4]
Hexachlorobutadiene	ug/l	6	6	0%	0.1	ND	NA[5]
Methylene chloride	ug/l	6	6	0%	0.1	ND	NA[5]
Styrene	ug/l	6	6	0%	0.1	ND	NA[5]
1,1,2-Trichloroethane	ug/l	6	6	0%	0.1	ND	NA[5]
1,1,2,2-Tetrachloroethane	ug/l	6	6	0%	0.1	ND	NA[5]
Tetrachloroethene	ug/l	6	6	0%	0.1	ND	0.18
Toluene	ug/l	6	3	50%	0.1	0.10 to 0.30	135
1,2,4-Trichlorobenzene	ug/l	6	6	0%	0.1	ND	NA[5]
1,1,1-Trichloroethane	ug/l	6	4	33%	0.1	0.30 to 0.40	991
Trichloroethene	ug/l	6	6	0%	0.1	ND	0.528
Trichlorofluoromethane	ug/l	6	6	0%	0.1	ND	NA[5]
1,2,4-Trimethylbenzene	ug/l	6	6	0%	0.1	ND	NA[5]
1,3,5-Trimethylbenzene	ug/l	6	6	0%	0.1	ND	NA[5]
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/l	6	6	0%	0.1	ND	NA[5]
Vinyl chloride	ug/l	6	6	0%	0.1	ND	0.0133
m,p-Xylene	ug/l	6	6	0%	0.1	ND	319
o-Xylene	ug/l	6	6	0%	0.1	ND	315

Notes:

1 - Compliance samples represent the soil gas Exposure Area (Basin and Pipeline Area)
2 - A total of 6 soil gas probe locations in the Exposure Area were sampled and analyzed using Method TO-14A.
3 - A total of 91 soil gas samples were analyzed by an on-site mobile laboratory (Table 2a), and in addition, six of the 91 locations were analyzed by an off-site laboratory using Summa canister samples.
4 - California Human Health Screening Levels for Shallow Soil Gas (vapor intrusion), Residential Land Use (California EPA, 2005
5 - Not Available
6 - The CHHSL for o-Xylene is the Representative Screening Number for mixed xylenes. The representative value for mixed xylenes is based on the calculated lowest one among the isomers.

Definitions:

ND - Non Detect

Table 3
Summary of Frequency of Occurrence of Detects and Non-detects for Groundwater at
Ormond Beach Generating Station
December 1996 through March 2008

			Compliance [1,2] (Downgradient)						Background [3]					
Group	**Chemical**	**Units**	**N**	**Detects**	**Non-Detects**	**% detects**	**Minimum**	**Maximum**	**N**	**Detects**	**Non-Detects**	**% detects**	**Minimum**	**Maximum**
Inorganics														
	Nitrate	ug/L	584	135	449	23%	74	310,000	203	46	157	23%	200	150,000
	pH	Units	584	584	0	100%	6.7	7.9	203	203	0	100%	6.4	8.0
	Aluminum	ug/L	584	43	541	7%	10	1,100	203	61	142	30%	11	6,600
	Antimony	ug/L	584	1	583	0.2%	2.5	2.5	203	1	202	0.5%	2.9	2.9
	Arsenic	ug/L	584	287	297	49%	2.0	20	203	116	87	57%	2.0	18
	Barium	ug/L	584	579	5	99%	14	282	203	203	0	100%	21	240
	Beryllium	ug/L	584	2	582	0.3%	0.38	0.58	203	4	199	2%	0.30	0.55
	Cadmium	ug/L	584	30	554	5%	0.50	4.9	203	13	190	6%	0.55	1.4
	Chromium, Total	ug/L	584	82	502	14%	1.0	26	203	31	172	15%	1.1	36
	Cobalt	ug/L	584	374	210	64%	0.22	11	203	75	128	37%	0.20	10
	Copper	ug/L	584	172	412	29%	2.0	560	203	49	154	24%	2.1	98
	Iron	ug/L	584	548	36	94%	20	29,000	203	193	10	95%	21	68,000
	Lead	ug/L	584	3	581	1%	1.1	22	203	11	192	5%	1.1	21.4
	Manganese	ug/L	584	578	6	99%	11	4,700	203	203	0	100%	39	3,800
	Molybdenum	ug/L	584	581	3	99%	4.0	210	203	197	6	97%	3.3	64
	Nickel	ug/L	584	389	195	67%	2.0	170	203	101	102	50%	2.0	48
	Selenium	ug/L	584	117	467	20%	2.0	37	203	20	183	10%	2.0	9.0
	Silver	ug/L	NA	NA	NA	NA	NA	NA	203	2	201	1%	0.52	0.63
	Vanadium	ug/L	584	43	541	7%	2.6	120	203	53	150	26%	2.5	350
	Zinc	ug/L	584	26	558	4%	10	310	203	25	178	12%	11	340
Organics														
	Chlorobenzene	ug/L	NA	NA	NA	NA	NA	NA	203	1	202	0.5%	0.52	0.52
	Chloroform	ug/L	584	3	581	1%	0.78	2.2	NA	NA	NA	NA	NA	NA
	1,1-Dichloroethane (1,1-DCA)	ug/L	584	76	508	13%	0.51	4.3	203	52	151	26%	0.53	6.6
	1,4-Dioxane	ug/L	522	335	187	64%	0.50	36	159	77	82	48%	0.53	13
	Ethylbenzene	ug/L	584	2	582	0.3%	0.50	0.76	203	2	201	1%	0.55	0.62
	Hexachlorobutadiene	ug/L	NA	NA	NA	NA	NA	NA	203	1	202	0.5%	1.8	1.8
	MTBE	ug/L	584	5	579	1%	3.4	14	NA	NA	NA	NA	NA	NA
	Tetrachloroethene	ug/L	584	1	583	0.2%	1.3	1.3	NA	NA	NA	NA	NA	NA
	Toluene	ug/L	NA	NA	NA	NA	NA	NA	203	1	202	0.5%	0.58	0.58
	m,p-Xylene	ug/L	584	4	580	1%	0.58	0.91	203	1	202	0.5%	0.83	0.83

Notes: Detected < 10%

1 - Compliance samples represent groundwater in the Exposure Area (Area where historic boiler chemical cleaning operations may have led to groundwater contamination).

2 - A total of 21 monitoring wells were sampled in this Exposure Area.

3 - Wells OB-4, OB-6, OB-7, OB-8, and OB-20 represent upgradient (background) conditions

Notes:

NA - Not Applicable

Analytical Test Methods
Ormond Beach Generating Station

Table 4

	Soil		Soil Gas		Groundwater	
Monitoring Parameter	**EPA Method**	**Practical Quantitation Limit**	**EPA Method**	**Practical Quantitation Limit**	**EPA Method**	**Practical Quantitation Limit**
General Mineral						
pH	9045C	10 mg/kg			SM4500 H+B	
Nitrate	9056	2 mg/l			300	5 mg/l
Aluminum	6020	10 mg/kg			200.8	25 ug/l
Manganese	6020	5 mg/kg			200.7	10 ug/l
Metals						
Antimony	6020	0.5 mg/kg			200.8	2.5 ug/l
Arsenic	6020	0.5 mg/kg			200.8	2 ug/l
Barium	6020	1.0 mg/kg			200.8	2.5 ug/l
Beryllium	6020	0.1 mg/kg			200.8	0.5 ug/l
Cadmium	6020	0.1 mg/kg			200.8	0.5 ug/l
Total Chromium	6020	1.0 mg/kg			200.8	1 ug/l
Chromium IV	7196	2 mg/kg			218.6	0.3 ug/l
Cobalt	6020	0.2 mg/kg			200.8	0.5 ug/l
Copper	6020	0.5 mg/kg			200.8	2.5 ug/l
Iron	6010	10 mg/kg			200.7	20 ug/l
Lead	6020	0.5 mg/kg			200.8	1 ug/l
Mercury	7471	10 ug/kg			245.1	0.1 ug/l
Molybdenum	6020	0.5 mg/kg			200.8	0.5 ug/l
Nickel	6020	0.5 mg/kg			200.8	4 ug/l
Selenium	6020	0.5 mg/kg			200.8	2 ug/l
Silver	6020	0.1 mg/kg			200.8	1 ug/l
Thallium	6020	0.5 mg/kg			200.8	1 ug/l
Vanadium	6020	5.0 mg/kg			200.8	2.5 ug/l
Zinc	6020	5.0 mg/kg			200.8	10 ug/l
Volatile Organic Compounds						
VOCs	8260B	5 ug/kg	8260B	1-5 ug/l	8260B	1-5 ug/l
VOCs			TO-14	0.0048 - 0.014 ug/l		

Data Source is P. Hamilton

Figures

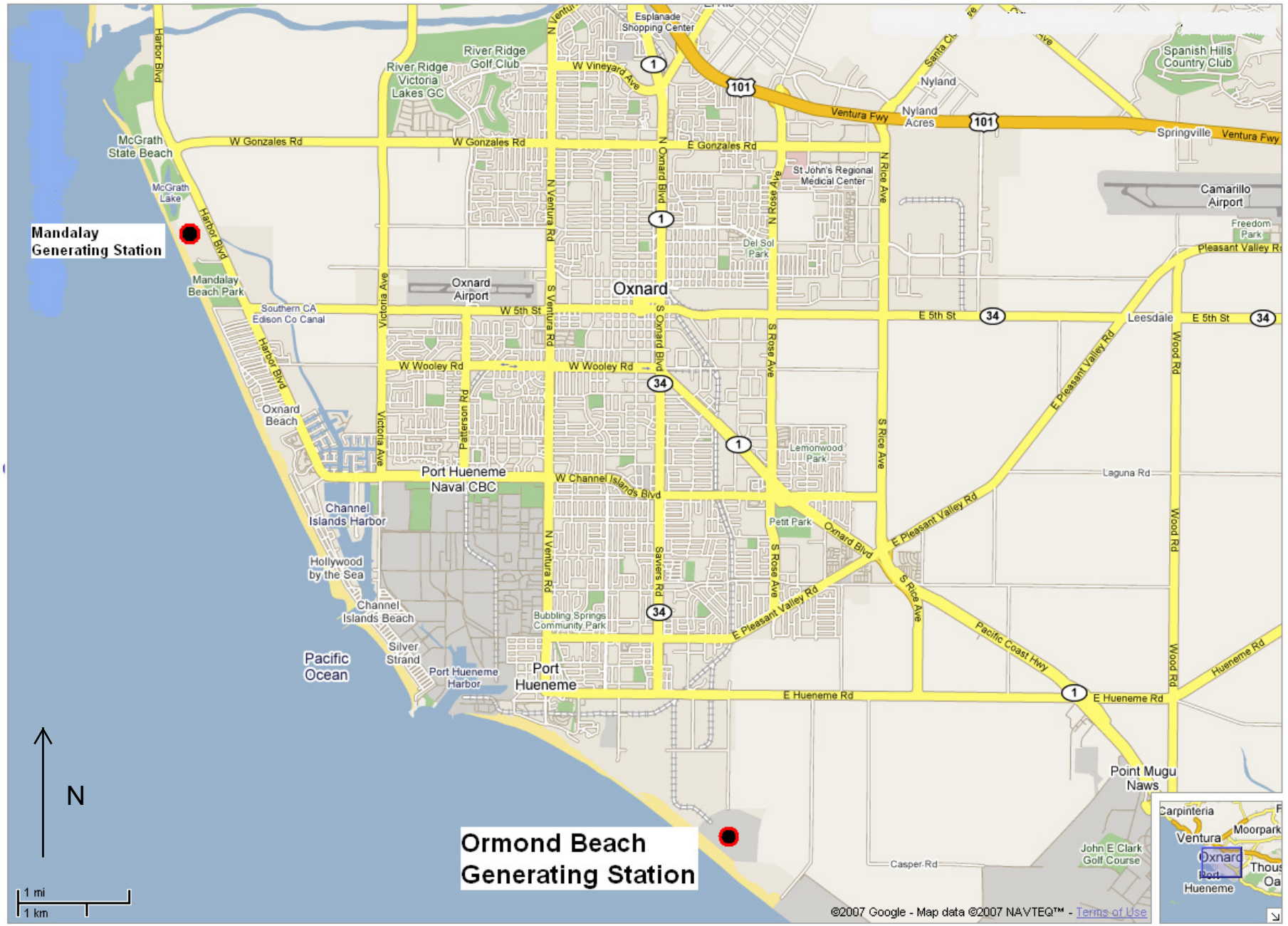
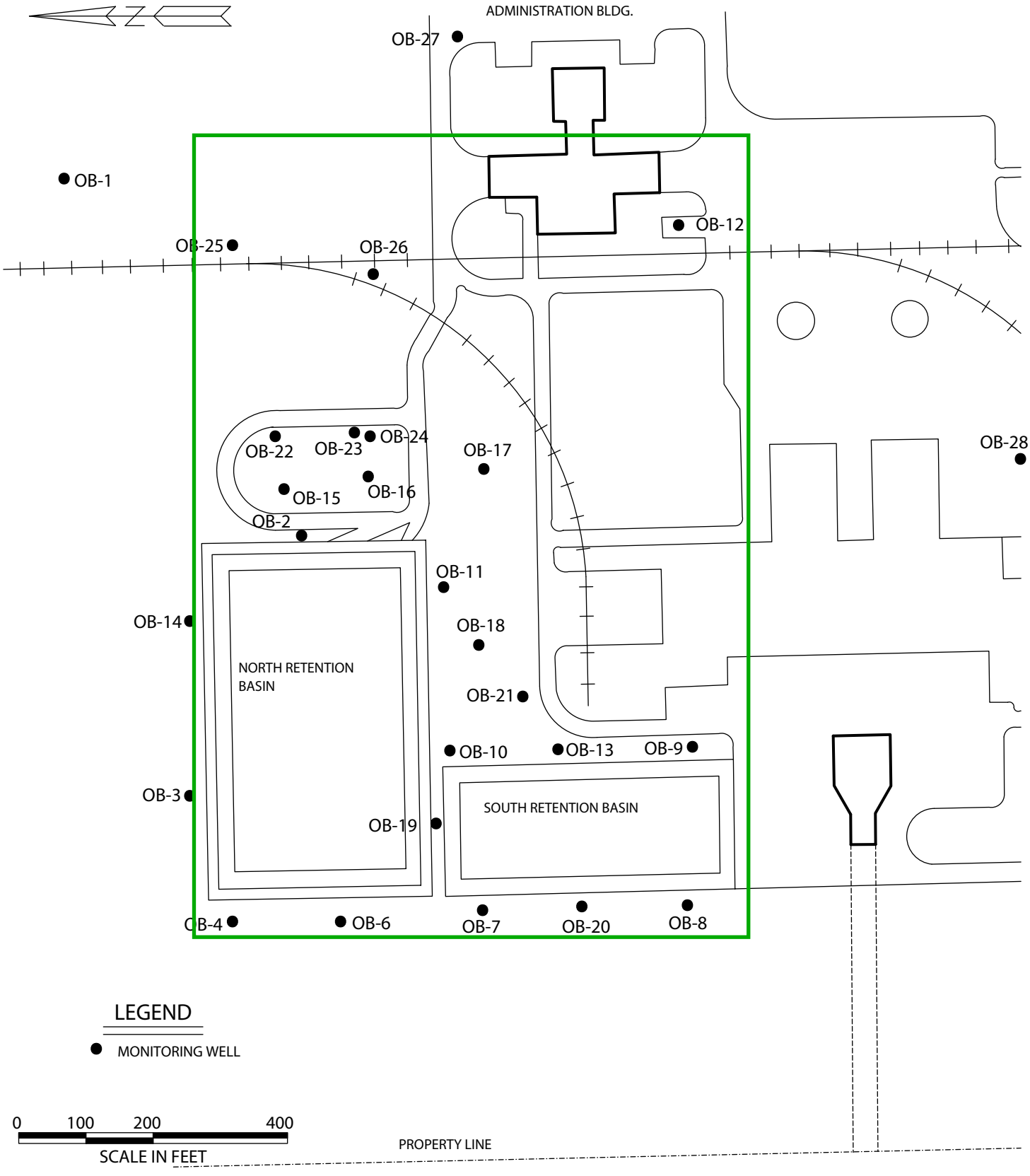


FIGURE 1 - SITE LOCATION MAP
Ormond Beach Generating Station, 6635 South Edison Drive, Oxnard, California

FIGURE 2 - SITE AERIAL PHOTO WITH SURROUNDING WETLANDS
Ormond Beach Generating Station, 6635 South Edison Drive, Oxnard, California

Bruce Perry, CSULB, March 2005



ORMOND BEACH GENERATING STATION

LOCATION OF MONITORING WELLS

FIGURE 3

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Pipeline and Basin Investigation -- Boring Locations
Ormond Beach Generating Station

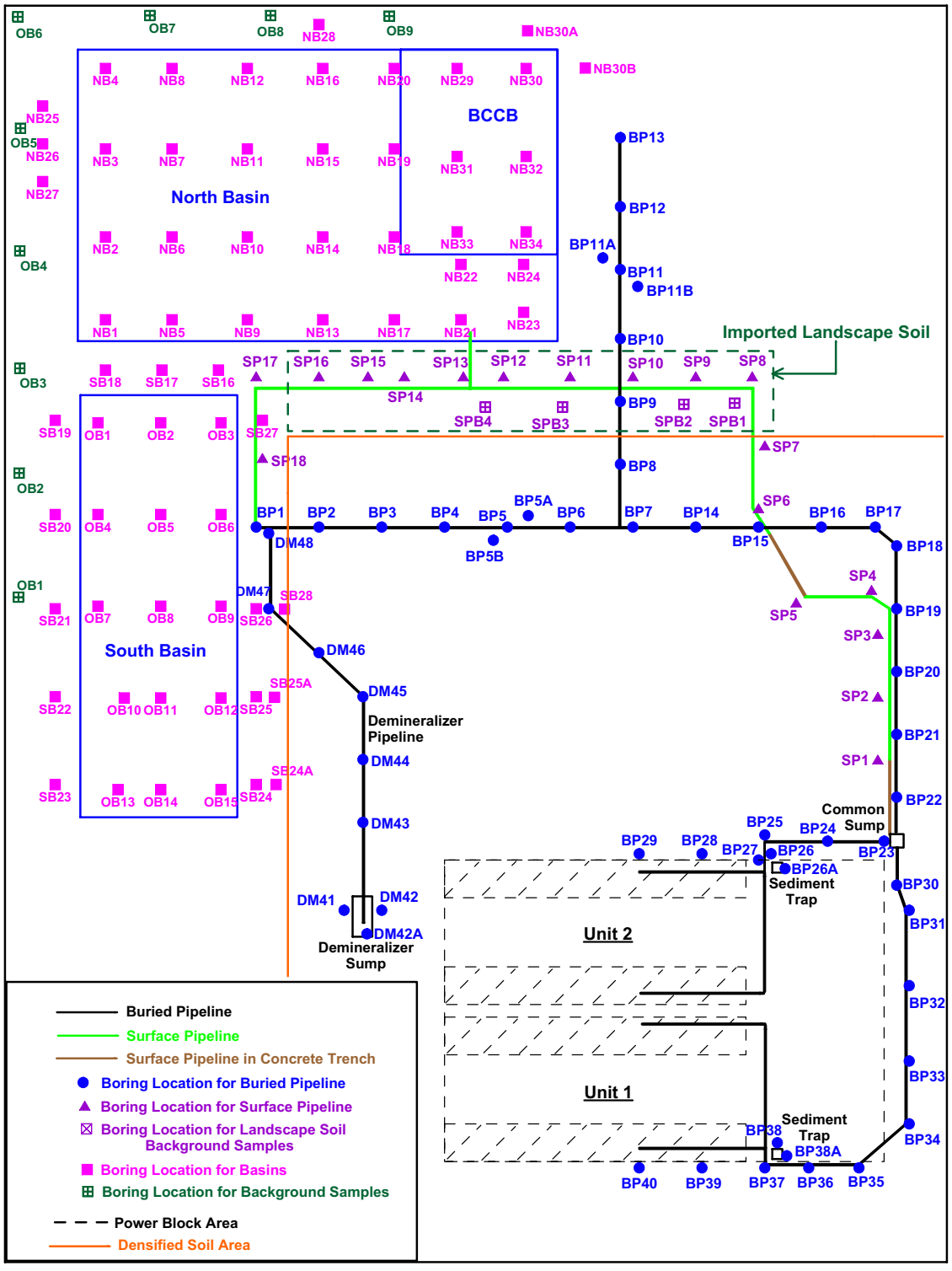
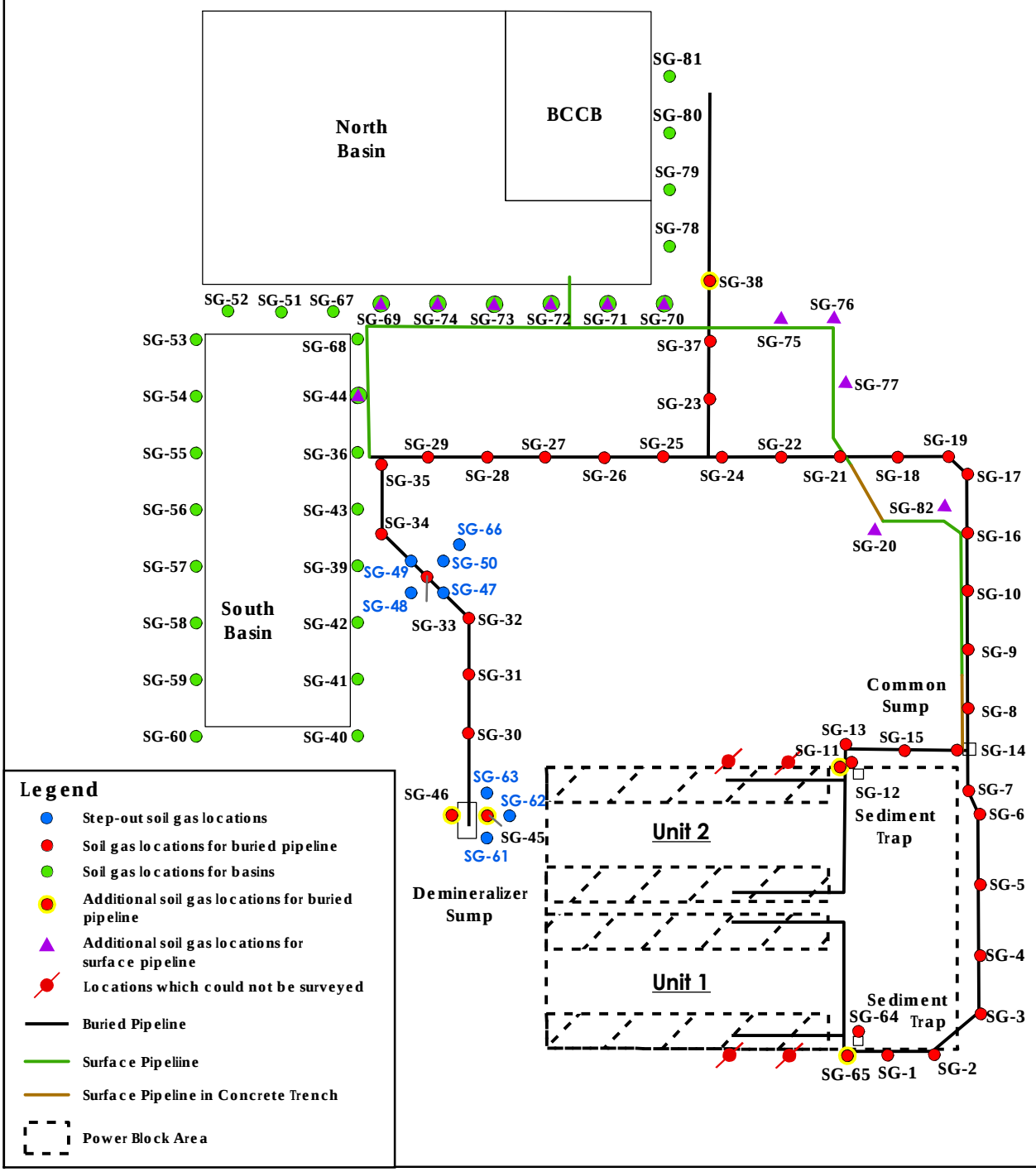


FIGURE 4

Data source is P. Hamilton (2006)



Notes.
1. Basemap source: Soil Sampling Work Plan Wastewater Pipelines Ormond Beach Generating Station 08/2005 Pat Hamilton.
2. All Locations Approximate
3. Soil gas sampling was performed during the week of January 9 2006

0 50 100 200
Feet

N
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KOMEX

6835 S. EDISON DR.

SWL | 02/2006

PIPELINE AND BASIN INVESTIGATION
SOIL GAS SAMPLING LOCATIONS
ORMOND BEACH GENERATING STATION

RL | H0554

5

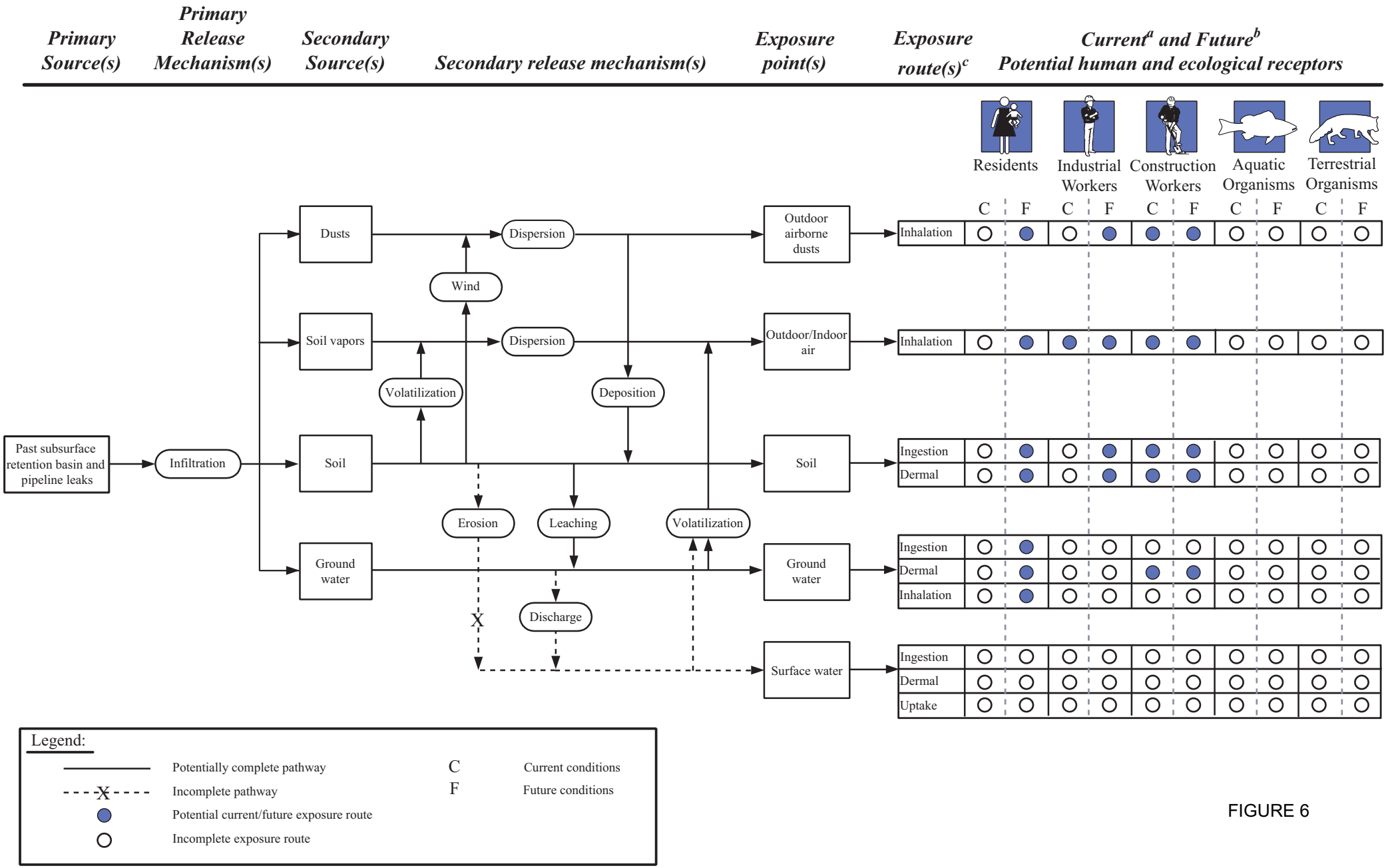

FIGURE 6

Notes:

a) Current receptor based on 2008 site conditions

b) Future receptor based on unrestricted site conditions that could potentially exist after the generating station is decommissioned and removed.

c) Exposure routes were based on data available in 2008. Thus, future exposure routes may change following retention basin remediation and collection of associated data.

Pre-remediation Human Health and Ecological Conceptual site model (CSM) for current and future (unrestricted) site use.

Appendices

Appendix A REPRESENTATIVE CHEMICAL ANALYSIS BOILER CHEMICAL CLEANING WASTE

TABLE 4.2-1

RESULTS[a] OF CHEMICAL ANALYSES OF BOILER CLEANING WASTES

Sample I.D.	STLC[b]	L-DCS-85-9F[c]	L-DCS-85-9FF[c]	L-DCS-85-9S[d]	L-DCS-85-9V[d]
Date Sampled:	--	5/15-16/85	7/20-21/85	6/3/85	7/5/85
Sb	15	0.002	<0.002	0.005	<0.002
As	5.0	0.008	<0.001	<0.001	<0.001
Ba	100	0.091	0.16	<0.012	0.023
Be	0.75	<0.004	<0.004	<0.004	<0.004
Cd	1.0	0.003	<0.003	<0.003	<0.003
Cr VI	5	<0.015	0.019	<0.015	0.017
Cr	560	0.25	1.3	0.65	3.3
Co	80	0.34	0.20	<0.026	0.12
Cu	25	114 [34][e]	52 [37][e]	0.008	<0.007
F	180	127	110	50	100
Pb	5.0	1.4	<0.002	<0.05	<0.002
Hg	0.2	0.0004	<0.0003	<0.0003	<0.0003
Mo	350	0.054	0.082	0.54	2.2
Ni	20	29 [29][e]	1.5	0.13	0.93
Se	1.0	<0.001	<0.001	<0.001	<0.001
Ag	5	0.012	<0.005	<0.005	<0.005
Ti	7.0	<0.005	<0.005	<0.005	<0.005
V	24	0.047	0.35	<0.015	0.19
Zn	250	17	16	0.066	0.38
Aldrin	0.14	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Alpha-BHC	--	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Beta-BHC	--	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Delta-BHC	--	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Gamma-BHC (Lindane)	0.4	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Chlordane	0.25	ND (<0.04)	ND (<0.01)	ND (<0.002)	ND (<0.01)
p,p' DDD	0.1	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
p,p' DDE	0.1	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
p,p' DDT	0.1	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
2,4 - D	10	ND (<1.0)	ND (<0.1)	ND (<0.02)	ND (<0.01)
Dieldrin	0.8	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Dioxin	0.001	ND (<0.002)	ND (<0.001)	ND (<0.001)	ND (<0.0005)
Endosulfan I(alpha)	--	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Endosulfan II(beta)	--	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Endosulfan sulfate	--	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Endrin	0.02	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Endrin Aldehyde	--	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Heptachlor	0.47	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Heptachlor Epoxide	--	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Kepone	2.1	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Pentachlorophenol	1.7	ND (<0.25)	ND (<0.02)	ND (<0.025)	ND (<0.2)
Toxaphene	0.5	ND (<0.1)	ND (<0.025)	ND (<0.005)	ND (<0.025)
Trichloroethylene	204	0.0005	NA	0.0021	ND (<0.0005)
2,4,5 - TP(Silvex)	1.0	ND (<0.2)	ND (<0.02)	ND (<0.004)	ND (<0.02)
2,4,5 - T(Acetic Acid)	--	ND (<0.2)	ND (<0.02)	ND (<0.004)	ND (<0.02)
Arochlor 1016	5.0	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Arochlor 1221	5.0	ND (<0.04)	ND (<0.01)	ND (<0.002)	ND (<0.01)
Arochlor 1232	5.0	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Arochlor 1242	5.0	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Arochlor 1248	5.0	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Arochlor 1254	5.0	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)
Arochlor 1260	5.0	ND (<0.02)	ND (<0.005)	ND (<0.001)	ND (<0.005)

NA Not analyzed.
ND Not detected, detection limit in ( ).
a Results in milligrams/liter (mg/l).
b Soluble Threshold Limit Concentration (mg/l) from California Administrative Code Title 22, Division 4, Chapter 30, Article 11.
c Sample of boiler cleaning waste for drum-type boiler.
d Sample of boiler cleaning waste for once-through boiler.
e Results in [ ] are from WET analysis.

41.9S/1-T4.2-1

Source: Hydrogeologic Assessment Report, El Segundo Generating Station (Dames & Moore, 1986)

Appendix B GROUNDWATER REMEDIATION PLANNING INFORMATION

APPENDIX B – GROUNDWATER REMEDIATION PLANNING INFORMATION ORMOND BEACH GENERATING STATION RETENTION BASIN SITE

The chemical compound 1,4-dioxane has been detected in three areas of the retention basin site. The most prominent area is located to the northeast of the North Basin (Figure 3), where a plume of 1,4-dioxane is being monitored. In addition, two wells adjacent to the wastewater retention basins, have historically shown localized elevated 1,4-dioxane concentrations. These are wells OB-9, located adjacent to the southeast corner of the South Basin, and well OB-19, which is located near the southwest corner of the North Basin (Figure 3).

The proposed remedy for the 1,4-dioxane is a pump and treat approach using granular activated carbon canisters or vessels, as described in the Remediation Pilot Test Report (Hamilton, 2007). The pilot test showed that a pumping rate as low as 2 gpm at well OB-23 would be sufficient to capture the 1,4-dioxane plume located to the northeast of the North Basin. In addition the pilot test showed that granular activated carbon canisters were effective at treating the groundwater to remove 1,4-dioxane.

It is assumed the pumping system will contain and capture the plume before it reaches the drainage canals at its present very slow rate of movement. If the plume moves beyond the monitoring well network (Figure 3) an evaluation will be conducted to determine the likely receptor for the plume.

Based on the findings of the 2007 pilot test, the proposed remedial approach will be the installation and operation of a carbon adsorption pump-and-treat system. Following are the main activities proposed, based on a two-year pump-and-treat program:

- Preliminary design and permitting with local agencies
- Preparation of a Work Implementation Plan (WIP) and Health and Safety Plan (HaSP)
- Regional Water Quality Control Board (RWQCB) Discharge Permit for treated water
- Pump-and-Treat System Installation
- System Operation and Maintenance
- System Demolition
- Closure Certification Report

The City of Oxnard is the local permitting agency. Appropriate permits will be acquired from the city, as necessary, for this project. The WIP and HaSP will be developed and submitted to DTSC for approval prior to initiation of any remedial action. It is understood that these plans are required by the Regional Water Quality Control Board for issuance of a waste discharge

permit. Once an approved WIP is completed, SCE will apply for a Report of Waste Discharge (RoWD) from the RWQCB. Based on previous research and discussion with RWQCB staff, it appears the only acceptable method of discharge will be via injection of treated water into the subsurface. SCE initially proposes a percolation trench type system that will be located upgradient of the main contaminated aquifer area.

Once the appropriate approvals and permits are procured, the pump-and-treat system will be installed. At this time it is anticipated that the system will consist of up to five pumping wells (existing wells within the 1,4-dioxane plume and at the specific wells noted above), pumps, piping, surge tanks, carbon vessels, and the discharge injection trench. The carbon adsorption vessels will be sized based on the anticipated contaminant loading. The general arrangement of the groundwater remediation system is shown in Figure B-1. The water treatment skid is anticipated to be approximately eight feet wide by fifteen to twenty feet long. It will likely consist of two surge tanks of three hundred gallon or less capacity, along with two carbon vessels containing one to two thousand pounds of activated carbon, and associated control systems. The discharge injection trench is anticipated to be approximately three feet wide and fifty to one hundred feet long. It will be constructed by excavating a trench approximately three feet deep, then backfilling it to within about a foot of the surface with gravel and slotted sewer pipe. The trench will then be backfilled to the surface with previously excavated soil. All soil remaining after construction of the trench will be properly disposed of offsite.

Once the system is installed, start-up testing will be conducted to maximize the pumping rate and contaminant removal efficiency. Once the system is optimized, it will operate continuously. Regular water sampling and reporting will be conducted to ensure proper system operation and achievement of contaminant removal goals, as well as to maintain compliance with agency reporting requirements.

Once the cleanup goals have been met, the system will be shut down and post-remediation groundwater monitoring will be initiated. Once groundwater cleanup goals have been demonstrated, the system will be demolished.

A Closure Certification Report will be prepared after all elements of the remediation are completed.

It is anticipated that the proposed groundwater cleanup program will last about two and one-half years from the point of DTSC approval to begin. The local agency permitting, WIP and HaSP preparation, DTSC plan approval, and procurement of the RWQCB discharge permit are expected to take approximately six months. System installation is expected to take approximately one month. System operation and maintenance is expected to last two years.

Follow-up compliance monitoring is anticipated to last up to three and one-half years, assuming a full three years of required monitoring. System demolition, preparation of the Closure Certification Report, and DTSC approval are anticipated to take an additional six months.

A cost estimate for the above noted activities, totaling $888,000, is included in Appendix E.

SOUTHERN CALIFORNIA EDISON®

An *EDISON INTERNATIONAL*® Company

General Arrangement
Groundwater Remediation System
Ormond Beach Closure Plan
Figure B-1

Appendix C OUTLINE OF POST-CLOSURE GROUNDWATER SAMPLING PROGRAM

APPENDIX C – OUTLINE OF POST-CLOSURE GROUNDWATER SAMPLING PROGRAM ORMOND BEACH GENERATING STATION RETENTION BASIN SITE

Following are the monitoring goals for the post-closure groundwater sampling program:

1. Verify that the groundwater contamination remains within the monitoring well network (**Figure 3**).
2. Determine the effectiveness of the pump and treatment measures to immobilize the VOC contamination.
3. Document clean conditions for three years after the groundwater concentrations reach acceptable levels.

In order to conduct the post-closure groundwater monitoring program, a Sampling and Analysis Plan that includes the following elements will be prepared:

1. Location, Purpose and Construction Details of New Monitoring Wells
2. Field Sampling Equipment
3. Sampling Protocol
    a. List of Wells to be Sampled Quarterly
    b. List of Wells to be Sampled Annually
    c. COC List
4. QA Procedures
5. Reporting

Appendix D BACKGROUND TECHNICAL REPORTS

Appendix D BACKGROUND TECHNICAL REPORTS ORMOND BEACH GENERATING STATION RETENTION BASIN SITE

California Environmental Protection Agency (California EPA), 2005. Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties. Table 2. January 2005.

California Environmental Protection Agency - State Water Resources Control Board, 2008. California Coastal Water Quality Monitoring Inventory, Listing on Ormond Beach NPDES Permit. July 2008. http://www.sfei.org/camp/servlet/DisplayProgram?which=NPDES&pid=SC_GSORMOND.

California Environmental Resources Evaluation System (CERES), 2008. State of California. http://ceres.ca.gov/wetlands/geo_info/so_cal/ormond_beach.html Viewed July 25, 2008.

Cantle, P. 2008. Biological Assessment: Removal of Eight Wood Distribution Poles Arnold's Beach, Ventura County, CA. Survey report by BioResource Consultants, Inc. for Southern California Edison.

Capco Analytical Services, Inc. Analytical results for basin sediments. Performed for Reliant Energy. November 2003 and March 2004.

Department of Toxic Substances Control (DTSC), 1997. Selecting inorganic constituents as chemicals of potential concern at risk assessments at hazardous waste sites and permitted facilities. Final Policy - Human and Ecological Risk Division. DTSC. February. http://www.dtsc.ca.gov/ScienceTechnology/ftp/backgrnd.pdf.

Department of Toxic Substances Control (DTSC), 2006. Basic Elements of a Closure Plan for Surface Impoundments. April. http://www.dtsc.ca.gov/HazardousWaste/Permits/Permit Writers Closure TOC.cfm

Hamilton, P., 1996. Water Quality Monitoring Program, Ormond Beach Generating Station. Report prepared for Southern California Edison. April 1996.

Hamilton, P., 1997. Well Construction Report, Ormond Beach Generating Station. Report prepared for Southern California Edison. February 1997.

Hamilton, P., 2000. Sampling and Analysis Plan, Wastewater Basin Closure Project. Report prepared for Southern California Edison. August 2000.

Hamilton, P., 2006. Soil Characterization, Ormond Beach Generating Station. Report prepared for Southern California Edison. December 2006.

Hamilton, P., 2007. Results of 1,4-Dioxane Remediation Pilot Test. Southern California Edison: Ormond Beach Generating Station. August 2007.

Hamilton, P., 2008. Annual Groundwater Monitoring Report, Groundwater Evaluation Monitoring Program, with Fourth Quarter 2007 Sampling Data, Ormond Beach Generating Station. Report prepared for Southern California Edison. February 21, 2008.

Hamilton, R. and K. Keane. 2008. Ormond Beach Generating Station Wastewater Retention Basin Closure Plan Biological Resources Assessment. Survey report by Keane Consulting for Southern California Edison.

Jones and Stokes Associates, Inc., 1994. "Final Draft South Ormond Beach Wetland Restoration & Management Plan." JSA 94-080. Prepared for the City of Oxnard. 1994.

Komex, 2005a. Final Draft Closure Demonstration Report for the Wastewater Retention Basin at the Long Beach Generating Station, Long Beach California. Report prepared for Southern California Edison. March 17, 2005.

Komex, 2005b. Project Health and Safety Plan (HaSP) for Soil Gas Investigation, Ormond Beach Generating Station, Oxnard, California. August 31, 2005.

Komex, 2006. Soil Gas Survey Report, Ormond Beach Generating Station. Report prepared for Southern California Edison. March 27, 2006.

Larry Walker Associates, 2004. "Progress Report on Efforts to Address Salts on the Calleguas Creek Watershed." Prepared for the Calleguas Creek Watershed Management Plan. June 30, 2004. <http://waterresourcescience.com/Documents/esm223_17_Readings_Calleguas_Salts_Report_June2004final.pdf.> Viewed 7/10/08.

Los Angeles Regional Water Quality Control Board (RWQCB), 2006. Email from Jenny Au to SCE on Beneficial Uses for the Oxnard Sub-basin. May 23, 2006.

Lyons, Michael, 2008. California Water Boards. Email Correspondence. July 11, 2008. MLYONS@waterboards.ca.gov

McClelland Engineers, Inc., 1985. "Ormond Beach Wetland Restoration and Management Plan." Prepared for the City of Oxnard. 1985.

MEC Analytical Systems, Inc., 1991. "Ecological Descriptions and Evaluation of Proposed Enhancement/Restoration for Eight Southern California Wetlands." Final Report. Prepared for Southern California Edison. 1991.

Onyx Environmental Services L.L.C. Wastestream Information Profile No. 535651. Classifies basin sediments generated from pond clean up by Reliant Energy. November 2003.

Perry, Bruce, 2005. Photo #22, "Ormond Beach Generating Station, Port Hueneme, and Oxnard Plain", published at the Department of Geological Sciences website, California State University at Long Beach. March 2005.

<http://www.cnsm.csulb.edu/departments/geology/people/bperry/AerialPhotosSoCal/VenturaRegion.htm.>

SCE, 2004. Health and Safety Plan for Monitoring Well Installation and Sump Integrity Tests at SCE Generating Stations, 1996, and Addendums, prepared by SCE, May 2004

SCE, 2008. Financial Assurance Document for Cleanup of Ormond Beach Retention Basin Site, Attachment to cover letter from Stan Marsh (SCE) to Mukul Agarwal (DTSC). July 28, 2008.

Schmidt, James J. 2008. Arnolds Beach Idle/Vandalized Pole Removal Project, Ormond Beach Area, Oxnard, Ventura County (DWO 6039-6900, AI 8-7901) Prepared by Compass Rose, June 2008.

SulTech: A Joint Venture of the Sullivan Consulting Group and Tetra Tech EM, Inc., 2004. Final Remedial Investigation Report for Installation Restoration Program Site 24. Naval Air Station Point Mugu, California. May 2004.

Tetra Tech EMI, 2003. Final Remedial Investigation for Groundwater Text, Tables, and Figures – Volume I. Naval Base Ventura County, Point Mugu, California. November 2003.

Tetra Tech EM, Inc., 2005. "Ecological Risk Assessment Addendum for Installation Restoration Program Sites 5 and 11." DS.A007.10618. Naval Air Station Point Mugu. December 2005.

Werner, S. 2007. Memorandum: Preconstruction Survey for Removal of Transformer on Pole 1257274E. Survey report by BioResource Consultants, Inc. for Southern California Edison.

Appendix E REMEDIAL ACTION COST ESTIMATES

Appendix E REMEDIAL ACTION COST ESTIMATES ORMOND BEACH GENERATING STATION RETENTION BASIN SITE

Based on the findings of the on-going groundwater investigations referenced in Appendix D, and agency action levels for 1,4-dioxane in groundwater, it can be concluded that a plume of this compound is present to the east of the north retention basin. The existing groundwater monitoring network fully surrounds the plume and recent quarterly 1,4-dioxane data in the plume area shows it is generally stable. The cost estimate outlined in Table E-1, is for a proposed groundwater pump-and-treat system assuming a two year operational phase, pre- and post-operation plan preparation, permitting, and reporting. A contingency of a little over 20 percent is included in the event the operational phase goes longer than anticipated, or that other operational costs increase. The Closure Certification Report cost includes a three year post-operational compliance monitoring program, consisting of quarterly sampling of a few select wells in the plume area.

TABLE E-1

CLOSURE COST ESTIMATE
Ormond Beach Generating Station
1,4-Dioxane Groundwater Pump & Treat

CLOSURE ACTIVITY	COST ESTIMATE
Pump & Treat Discharge Permitting	$20,000
Work Implementation Plan/HASP	$20,000
PUMP & TREAT SYSTEM INSTALLATION/DEMOLITION	
Site Preparation	$5,000
Carbon Filtration System Set-up	$20,000
Well Pumps, Piping & Installation	$25,000
Discharge Leach Field Construction	$50,000
Carbon Filtration System Lease (24 months @ $5,000/month)	$120,000
System Demolition	$20,000
OPERATION & MAINTENANCE	
Carbon Change-outs (12 events @ $20,000)	$240,000
Operation & Maintenance ($4,000/month)	$96,000
Sampling, Analysis & Reporting ($3,000/month)	$72,000
CLOSURE CERTIFICATION REPORT	
Compliance Monitoring (3-4 wells quarterly)	$40,000
Report Preparation	$10,000
SUBTOTAL	$738,000
CONTINGENCY	$150,000
TOTAL	$888,000

Appendix F SCE FINANCIAL ASSURANCE DOCUMENT

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

July 28, 2008

COPY

Mukul K. Agarwal
Supervising Hazardous Substances Scientist I
Enforcement and Emergency Response Program
Department of Toxic Substances Control
9211 Oakdale St.
Chatsworth, CA 91311

Florence Gharibian
Department of Toxic Substances Control
9211 Oakdale St.
Chatsworth, CA 91311

Marvel Bradshaw
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, California 94710-2721

Re: **Southern California Edison Company**
Financial Assurance Documents for Closure and Liability for Reliant Ormond Beach Generating Station – EPA ID# CAD000631036

Southern California Edison Company (SCE) is submitting the following documentation for use of the Financial Test to demonstrate financial assurance at the subject facility. SCE sold the Ormond Beach Generating Station to Reliant Energy Corporation in 1998 but retained the environmental liability associated with the facility.

1. Letter from Chief Financial Officer
2. Corporate Guarantee for Closure or Postclosure Care
3. Guarantee for Liability Coverage
4. Report of Independent Auditors
5. Report of Independent Registered Public Accounting Firm
6. Relevant pages from 2007 Annual Report
7. Tangible Net Worth Computation Spreadsheet
8. Credit Ratings as of June 2008
9. Standard & Poor's Ratings Direct Research Summary for SCE

2244 Walnut Grove Ave.
Rosemead, CA 91770

Should you have any questions or require additional information, please contact me directly at (626) 302-9711.

Sincerely,

S. L. Marsh Jr.

Stanley L. Marsh
Senior Environmental Specialist

Attachments

SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

LETTER FROM CHIEF FINANCIAL OFFICER

Department of Toxic Substances Control
Financial Responsibility Section
8800 Cal Center Drive
Sacramento, California 95826

I am the chief financial officer of Southern California Edison Company located at 2244 Walnut Grove Avenue, Rosemead, California, 91770. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage and closure care as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8.

The firm identified above is the owner or operator of the following facility/TTU for which liability coverage for sudden accidental occurrences is being demonstrated through the financial test specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and 66265.147:

None

The firm identified above guarantees, through the guarantee specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and 66265.147, liability coverage for sudden accidental occurrences at the following facility/TTU owned or operated by the following:

Facility	Location	EPA I.D. No.	Current Liability Coverage
Reliant Ormond Beach Generating Station Owned by Reliant Energy Corp. Boiler Chemical Cleaning Retention Basin	6635 S. Edison Dr. Oxnard, CA 93030	CAD000631036	$2M

The firm identified above is engaged in the following substantial business relationship with the owner or operator Reliant Energy Corporation and receiving the following value in consideration of the guarantee:

> Southern California Edison Co. divested the Ormond Beach Generating Station in Oxnard, CA to Reliant Energy Corporation in 1998. All environmental liabilities associated with the Boiler Chemical Cleaning Retention Basin located at this facility were, however, retained by Southern California Edison Co. as agreed to in the contract for sale to Reliant Energy Corporation. This arrangement does not stipulate receiving value in consideration of this guarantee.

1. The firm identified above is the owner or operator of the following facilities/TTUs for which financial assurance for closure and/or postclosure or liability coverage is demonstrated through the financial test as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, section 66264.143, subsection (f), section

66264.145, subsection (f), section 66265.143, subsection (e), and section 66265.145, subsection (e). The current closure and/or post-closure cost estimates covered by the test are shown for each facility/TTU:

None

2. The firm identified above guarantees through the guarantee as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, section 66264.143, subsection (f), section 66264.145, subsection (f), section 66265.143, subsection (e), and section 66265.145, subsection (e), the closure and/or postclosure care or liability coverage of the following facilities/TTUs owned or operated by the guaranteed party. The current cost estimates for the closure or postclosure care so guaranteed are shown for each facility/TTU:

Facility Name and Address	Closure Cost Estimate	Postclosure Cost Estimate
Reliant Ormond Beach Generating Station Owned by Reliant Energy Corp. 6635 S. Edison Dr. Oxnard, CA 93030 Boiler Chemical Cleaning Retention Basin	$888,000	TBD

3. In states where the U.S. Environmental Protection Agency is not administering the financial requirements of subpart H of title 40 CFR parts 264 and 265, this firm as owner, operator or guarantor is demonstrating financial assurance for the closure or postclosure care of the following facilities/TTUs through the use of a financial test equivalent or substantially equivalent to the financial test specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, section 66264.143, subsection (f), section 66264.145, subsection (f), section 66265.143, subsection (e), and section 66265.145, subsection (e). The current closure and/or postclosure cost estimates covered by such a test are shown for each facility/TTU:

None

4. The firm identified above is the owner or operator of the following facilities/TTUs for which financial assurance for closure or, if a disposal facility, postclosure care, is not demonstrated either to U.S. Environmental Protection Agency or a State through the financial test or any other financial assurance mechanism as specified in California Code of Regulations, title 22, division 4.5, chapters 14 and 15, article 8 or equivalent or substantially equivalent State mechanisms. The current closure and/or postclosure cost estimates not covered by such financial assurance are shown for each facility/TTU:

None

5. The firm is the owner or operator or guarantor of the following Underground Injection Control facilities for which financial assurance for plugging and abandonment is required under 40 CFR part 144 and is assured through a financial test. The current closure cost estimates as specified in 40 CFR144.62 are shown for each facility:

None

The firm is required to file a form 10-K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on December 31. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended December 31, 2007.

This firm is using Part B, Alternative II for Closure or Postclosure Care and Liability Coverage.

PART B

ALTERNATIVE II

1. .... Sum of current closure and postclosure cost estimates (Total of all cost estimates shown in the paragraphs of the letter to the Director of the Department of Toxic Substances Control) .....$ 888,000

2. .... Amount of annual aggregate liability coverage to be demonstrated.... $ 2,000,000

3. .... Sum of lines 1 and 2.....$2,888,000

4. Current bond rating of most recent issuance and name of rating service: ..... Moody's – A3, S&P – BBB+

5. .... Date of issuance of bond.....None

6 ..... Date of maturity of bond.....None

*7. ..... Tangible net worth (if any portion of the closure and post closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line.) $ 6,817,000,000

*8. ..... Total assets in the United States (required only if less than 90 percent of firm's assets are located in the United States). ..... $ N/A

9. .... Is line 7 at least $10 million?.....☒ Yes ☐ No

10. ..... Is line 7 at least 6 times line 3?.....☒ Yes ☐ No

*11..... Are at least 90 percent of the firm's assets located in the United States? If not, complete line 12.....☒ Yes ☐ No

12. ..... Is line 8 at least 6 times line 3?.....☒ Yes ☐ No

..... I hereby certify that the wording of this letter is identical to the wording as specified in California Code of Regulations, title 22, section 66264.151, subsection (g) and is being executed in accordance with the requirements of California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8.

Signature

Date: 7/28/08

THOMAS M. NOONAN, Senior Vice President and Chief Financial Officer

SOUTHERN CALIFORNIA
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An *EDISON INTERNATIONAL*® Company

CORPORATE GUARANTEE FOR CLOSURE OR POSTCLOSURE CARE

Department of Toxic Substances Control
Financial Responsibility Section
8800 Cal Center Drive
Sacramento, California 95826

Guarantee made this July 28, 2008 by Southern California Edison Company, a business corporation organized under the laws of the State of California, herein referred to as guarantor, to the Department of Toxic Substances Control (DTSC), obligee, on behalf of our subsidiary Reliant Energy Corporation, at 6635 S. Edison Dr., Oxnard, California 93030.

This guarantee is made on behalf of the Reliant Energy Corporation, which is an entity with which the guarantor has a substantial business relationship as defined in California Code of Regulations, title 22, division 4.5, chapter 10, article 2, section 66260.10 to the DTSC.

RECITALS

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, section 66264.143, subsection (f), section 66264.145, subsection (f), section 66265.143, subsection (e), and section 66265.145, subsection (e).

2. Reliant Energy Corporation owns at least 50 percent of the voting stock of and/or operates the following hazardous waste management facility(ies)/transportable treatment unit(s) (TTU) covered by this guarantee:

Facility Name and Address	EPA ID Number	Closure Cost Estimate	Post-Closure Cost Estimate
Reliant Ormond Beach Generating Station Owned by Reliant Energy 6635 S. Edison Dr, Oxnard, CA 93030 Boiler Chemical Cleaning Retention Basin	CAD000631036	$888,000	TBD

3. "Closure plans" and postclosure plans" as used below refer to the plans maintained as required by California Code of Regulations, title 22, division 4.5, chapters 14 and 15, article 7, for the closure and postclosure care of facilities/TTU(s) as identified above.

4. For value received from Reliant Energy Corporation, Guarantor guarantees to DTSC that in the event that Reliant Energy Corporation fails to perform closure care of the above facility(ies)/TTUs in accordance with the closure of postclosure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, as applicable, in the name of Reliant Energy Corporation in the amount of the current closure or postclosure cost estimates as specified in California Code of

P.O. Box 800
2244 Walnut Grove Ave.
Rosemead, CA 91770

Regulations, title 22, division 4.5, chapter 14 and 15, article 8.

5. Guarantor agrees that if, at any time during or at the end of any fiscal year before the termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to DTSC and to Reliant Energy Corporation that he or she intends to provide alternate financial assurance as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8 as applicable, in the named of Reliant Energy Corporation. Within 120 days after the end of such fiscal year or other occurrence, the guarantor shall establish such alternate financial assurance unless Reliant Energy Corporation has done so.

6. The guarantor agrees to notify DTSC by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), United State Code, naming guarantor as debtor within ten (10) days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by DTSC of a determination that guarantor no longer meets the financial test criteria or that he or she is disallowed from continuing as a guarantor of closure or postclosure care, he or she shall establish alternate financial assurance as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, as applicable, in the name of Reliant Energy Corporation unless Reliant Energy Corporation has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or postclosure plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or postclosure, or any other modification or alteration of an obligation of the owner of operator pursuant to California Code of Regulations, title 22, division 4.5.

9. Guarantor agrees to remain bound under this guarantee for as long as Reliant Energy Corporation shall comply with the applicable financial assurance requirements of California Code of Regulations, title 22, division 4.5 for the above listed facilities/TTUs, except as provided in paragraph 10 of this agreement.

10. Guarantor may terminate this guarantee 120 days following the receipt of notification, through either registered of certified mail, by DTSC and by Reliant Energy Corporation.

11. Guarantor agrees that if Reliant Energy Corporation fails to provide alternate financial assurance as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, as applicable, and obtain written approval of such assurance from DTSC within 90 days after a notice of cancellation by the guarantor is received by DTSC from guarantor, guarantor shall provide such alternate financial assurance in the name of Reliant Energy Corporation.

12. Guarantor expressly waives notice of acceptance of this guarantee by DTSC or by Reliant Energy Corporation. Guarantor also expressly waives notice of amendments or modifications of the closure and/or postclosure plan and of amendments or modifications of the facility/TTU permit(s).

The parties hereby certify that the wording of this guarantee is identical to the wording

specified in California Code of Regulations, title 22, section 66264.151, subsection (h)(1) and is being executed in accordance with the requirements of California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8.

Effective date: 7/28/2008

Southern California Edison

Signature

THOMAS M. NOONAN
Senior Vice President and Chief Financial Officer

Signature of witness or notary:

ANN M. DAVEY
Commission # 1585967
Notary Public — California
Los Angeles County
My Comm. Expires Jun 9, 2009

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

GUARANTEE FOR LIABILITY COVERAGE

Department of Toxic Substances Control
Financial Responsibility Section
8800 Cal Center Drive
Sacramento, California 95826

Guarantee made by July 28, 2008 by Southern California Edison Company a business corporation organized under the laws of the State of California, herein referred to a guarantor. This guarantee is made on behalf of Reliant Energy Corporation, at 6635 S. Edison Dr., Oxnard, California 93030, which is one of the following: an entity with which guarantor has a substantial business relationship, as defined in California Code of Regulations, title 22, division 4.5, chapter 10, article 2, section 66260.10, to any and all third parties who have sustained or may sustain bodily injury or property damage caused by sudden accidental occurrences arising from operation of the facility(ies)/transportable treatment unit(s) (TTU) covered by this guarantee.

RECITALS

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and 66265.147.

2. Reliant Energy Corporation owns or operates the following hazardous waste management facility(ies)/TTU(s) covered by this guarantee:

EPA Identification Number:	CAD000631036
Name:	Reliant Ormond Beach Generating Station Boiler Chemical Cleaning Retention Basin
Address:	6635 S. Edison Dr. Oxnard, California 93030

This corporate guarantee satisfies California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, third-party liability requirements for sudden accidental occurrences in the above-named owner or operator facility(ies)/TTU(s) for coverage in the amount of $1,000,000 per facility/TTU per occurrence and $2,000,000 annual aggregate.

3. For value received from Reliant Energy Corporation, guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by sudden accidental occurrences arising from operations of the facilityties)/TTU(s) covered by this guarantee that in the event that Reliant Energy Corporation fails to satisfy a judgement or award based on a determination of liability for

bodily injury or property damage to third parties caused by sudden accidental occurrences, arising from the operation of the above-named facility(ies)/TTU(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor will satisfy such judgement(s), awards(s), or settlement agreement(s) up to the limits of the coverage identified above.

4. Such obligation does not apply to the following:

(a) Bodily injury or property damage for which Reliant Energy Corporation is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that Reliant Energy Corporation would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of Reliant Energy Corporation under a workers' compensation, disability benefits, or unemployment compensation law or any similar laws.

(c) Bodily injury to:

(1) An employee of Reliant Energy Corporation arising from, and in the course of, employment by Reliant Energy Corporation; or

(2) The spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by Reliant Energy Corporation. This exclusion applies:

(A) Whether Reliant Energy Corporation may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who shall pay damages because of the injury to persons identified in paragraphs (A) and (B).

(d) Bodily injury or property, damages arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by Reliant Energy Corporation;

(2) Premises that are sold, given away, or abandoned by Reliant Energy Corporation if the property damage arises out of any part of those premises;

(3) Property loaned to Reliant Energy Corporation;

(4) Personal property in the care, custody, or control of Reliant Energy Corporation;

(5) That particular part of real property on which the Reliant Energy Corporation or any contractor of subcontractors working directly or indirectly on behalf of the Reliant Energy Corporation are performing operations, if the property damage arises out of these operations.

5. Guarantor agrees that if, at any time during or at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within ninety (90) days, by certified mail, notice to the Department of Toxic Substances Control (DTSC) and to Reliant Energy Corporation that he or she intends to provide alternate liability coverage as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and

66265.147, as applicable, in the name of Reliant Energy Corporation. Within 90 days after the end of such fiscal year, the guarantor shall establish such liability coverage unless Reliant Energy Corporation has done so.

6. The guarantor agrees to notify the DTSC by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), United States Code, naming guarantor as debtor, within ten (10) days after commencement of the proceedings.

7. Guarantor agrees that within thirty (30) days after being notified by the DTSC of a determination that the guarantor no longer meets the financial test criteria or that he or she is disallowed from continuing as a guarantor, he or she shall establish alternate liability coverage as specified in California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and 66265.147 in the name of Reliant Energy Corporation, unless the Reliant Energy Corporation has done so.

8. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements set by California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and 66265.147, provided that such modification shall become effective only if DTSC does not disapprove the modification within thirty (30) days of receipt of notification of the modification.

9. Guarantor agrees to remain bound under this guarantee for so long as Reliant Energy Corporation shall comply with the applicable requirements of California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8, sections 66264.147 and 66265.147 for the above-listed facility(ies)/TTU(s), except as provided in paragraph 10 of this agreement.

10. Guarantor may terminate this guarantee 120 days following receipt of notification, through certified mail, by DTSC and by Reliant Energy Corporation.

11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

12. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facility(ies)/TTU(s).

13. The guarantor shall satisfy a third-party liability claim only on receipt of one of the following documents;

(a) Certification from the Principal and the third-party liability claimant(s) that the liability claim should be paid. The certification shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties Southern California Edison and Claimant, hereby certify that the claim of bodily injury and/or property damage caused by a sudden accidental occurrence arising from operating Reliant Energy Corporation Ormond Beach Boiler Chemical Cleaning Retention Basin facility should be paid in the amount TBD.

Principal

(Notary) Date

Claimant(s)

(Notary) Date

(b) A valid final court order establishing a judgement against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility/TTU or group of facility(ies)/TTU(s).

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered primary coverage.

I hereby certify that the wording of this guarantee is identical to the wording as specified in California Code of Regulations, title 22, section 66264.151, subsection (h)(2) and is being executed in accordance with the requirements of California Code of Regulations, title 22, division 4.5, chapter 14 and 15, article 8.

Effective date: 7/28/2008

Southern California Edison

Signature

THOMAS M. NOONAN
Senior Vice President and Chief Financial Officer

Signature of witness or notary:

ANN M. DAVEY
Commission # 1585967
Notary Public — California
Los Angeles County
My Comm. Expires Jun 9, 2009

Southern California Edison Company
Tangible Net Worth
As of December 31, 2007
(In Millions)

Total shareholder's equity	$7,157	2007 Annual Report, page 50
Less: Intangible assets	340	See below
Tangible net worth	$6,817	

Intangible assets details: (Actual dollars)

Within total utility plant --		
Intangible plant	$505,651,020.32	DPB 5350, account 101.050
Accum deprec for intangible plant	(261,740,696.22)	DPB 5350, accounts 111.030, .105,.210,.220,.260,.315 and .640
	243,910,324.10	
Within total current assets --		
Prepaid trnsln license - Morongo	2,176,555.00	DPB 5350, account 165.520
Prepayment of FTR (cost)	0.00	DPB 5350, account 165.610
Deferred proceeds FTR acquisition	0.00	DPB 5350, account 186.937
Mountainview - RECLAIM inventory	1,242,854.50	Mountainview balance sheet line item
Big 4 - Emission credits	865,407.00	Big 4 balance sheet line item detail
	4,284,816.50	
Within total deferred charges --		
Pension fund excess of FASB 87	74,987,000.00	DPB 5350, account 186.392
Pension intangible asset	0.00	DPB 5350, account 186.394
Unamortized cost LB Op agreement	1,323,417.71	DPB 5350, account 186.845
Prepaid software license	2,796,680.14	DPB 5350, account 186.870
Mountainview - Emissions credits	12,018,282.29	Mountainview balance sheet line item
Big 4 - Intangible assets & emission credits	1,150,953.00	Big 4 balance sheet line item detail
	92,276,333.14	
Total intangible assets	$340,471,473.74	

SOUTHERN CALIFORNIA EDISON®

An EDISON INTERNATIONAL® Company

Credit Ratings as of June 2008

	S&P	Moody's	Fitch
Issuer Credit / Long Term Rating	**BBB+**	**A3**	**A-**
Outlook	**Stable**	**Stable**	**Stable**
Effective Date	16-Feb-05	16-Oct-06	02-Jun-08
Short Term / Commercial Paper	**A-2**	**P-2**	**F-1**
Effective Date	13-Aug-07	17-Sep-04	02-Jun-08
Senior Secured	**AAA**	**A2**	**A+**
Effective Date	18-Jan-08	06-Aug-04	27-Sep-06
Senior Unsecured	**BBB**	**A3**	**A**
Effective Date	14-Jan-08	16-Oct-06	27-Sep-06
Preferred Stock	**BBB-**	**Baa2**	**A-**
Effective Date	14-Jan-08	16-Oct-06	27-Sep-06
Senior Secured Credit Facility		**A2**	
Effective Date		16-Oct-06	

	Long Term		Short Term	
	S&P	Moody's	S&P	Moody's
Investment Grades	AAA	Aaa	A-1	P-1
	AA+	Aa1	A-2	P-2
	AA	Aa2	A-3	P-3
	AA-	Aa3	B	NP
	A+	A1	C	
	A	A2	R	
	A-	A3		
	BBB+	Baa1		
	BBB	Baa2		
	BBB-	Baa3		
Non-Investment Grades	BB+	Ba1		
	BB	Ba2		
	BB-	Ba3		
	B+	B1		
	B	B2		
	B-	B3		
	CCC+	Caa1		
	CCC	Caa2		
	CCC-	Caa3		
	CC	Ca		
	C	C		
	D	D		

STANDARD &POOR'S

RATINGSDIRECT®

December 18, 2007

Southern California Edison Co.

Primary Credit Analyst:
Anne Selting, San Francisco (1) 415-371-5009; anne_selting@standardandpoors.com

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Southern California Edison Co.

Major Rating Factors

Corporate Credit Rating
BBB+/Stable/A-2

Strengths:

- A continued favorable and supportive regulatory environment as evidenced by a favorable outcome in the company's 2006 general rate case (GRC), the expectation that the company's pending cost of capital filing will support a reasonable return on equity (ROE) (currently at 11.6%), as well as a recent Federal Energy Regulatory Commission (FERC) decision that provides SCE with incentive regulation for three large transmission projects;
- SCE's greatest day-to-day risk, its exposure to fuel and purchased power and the timely recovery of these volatile costs in retail rates, are adequately addressed through the energy resource recovery account (ERRA) mechanism that is expected to be over collected at year-end 2007;
- Consolidated financial metrics that benefit from the debt-free status of the parent company, Edison International, which retired all of its third-party debt with cash on hand in late 2004; at the same time, SCE's debt levels will increase sizably if it executes on its proposed $17.6 billion capital program;
- The timely filing and CPUC response to SCE's 2009-2011 GRC application in November suggests that the company is on track to have a decision in the case before 2009, which would provide rate and capital spending authorization in advance of the start of the test year; and
- A March 2007 non-consolidation opinion, as required by the CPUC, provides further support that protections in place for SCE would prevent it from being filed into a bankruptcy of its parent or the unregulated subsidiaries of Edison Mission Group.

Weaknesses:

- SCE's significant capital program over the next five years will occur roughly in tandem with an escalation in its power contracting requirements, and could collectively pressure leverage and cash flow metrics;
- Above average retail electric rates that are nearly 14 cents/kWh (including some California Department of Water Resources (CDWR) costs) are expected to be further pressured in the next five years;
- A number of significant policy issues could substantially impact SCE's business including the potential that direct access may be re-opened in the sate, proposals to create a capacity auction administered by the California ISO, the design for implementing Assembly Bill 32, the state's greenhouse gas legislation, the potential for rising renewable targets beyond 2010, and uncertainties over the timing and ultimate resolution of the Devers-Palo Verde line, which Arizona regulators rejected this past summer;
- Some succession risk at the CPUC in the near-term. The president of the CPUC completes his six-year term at the end of 2008 and has been instrumental in providing leadership that has helped restore credit ratings; a successor is not expected to be named until later next year.
- A regulatory arena that, while currently stable, is enormously complex, easily influenced by public and political sentiment, and is capable of producing unintended consequences that can be destabilizing for utility credit quality;

Rationale

The 'BBB+' corporate credit rating (CCR) on regulated utility Southern California Edison Co. (SCE), reflects the consolidated financial and credit profile of parent company Edison International ('BBB-') which also owns the unregulated operations of Edison Mission Energy ('BB-').

While we view the ratings of SCE as linked to Edison International, the existence of numerous regulatory and legislative safeguards are viewed as protective of the utility's credit quality, enabling it to have a rating that it is two notches above that of its parent. The primary protections that justify a separation in the ratings are:

- A CPUC-mandated threshold equity cushion of 48%, which constrains SCE's ability to make distributions to its unregulated affiliates;
- The requirement that Edison International and SCE give first priority to SCE's capital requirements;
- Legislatively prescribed criminal penalties that could be imposed on management for violations of CPUC orders that require the application of borrowed funds solely to utility purposes;
- A non-consolidation opinion, put into place at the direction of the CPUC in March 2007.

Based in Rosemead, Calif., SCE serves in excess of 4.8 million retail electric customers. As of Sept. 30, 2007 it had $5.3 billion in long-term debt outstanding. The utility's business profile is characterized as 'excellent' by Standard & Poor's, which principally reflects our view that the current regulatory environment is among the most supportive in the western U.S. SCE's financial profile is 'intermediate', reflecting trailing 12-month (TTM) adjusted credit metrics that as of Sept. 30 are: 26.8% funds from operation (FFO) to total debt, 4.3x FFO to interest coverage, and 54.3% debt to total capitalization.

Edison International's consolidated business risk is 'strong', reflecting the stability of SCE's utility operations, which in 2006 provided about 73% of consolidated cash flows, but also reflecting the parent's riskier merchant and project operations owned by subsidiary Edison Mission Energy. Edison International's financial profile is 'aggressive', reflecting principally its strategy to grow its unregulated operations, the volatile cash flows of these operations and its present capital structure, which, while improving in recent years remains leveraged. (On a consolidated basis, Edison International's TTM adjusted credit metrics as of Sept. 30: 21.5% FFO to total debt, 3.1x FFO interest coverage and 63% debt to total capitalization.)

While SCE's credit quality is anchored by the presence of a strong and credit-supportive regulatory environment, the utility faces significant challenges over the next five years. Foremost among these challenges is the company's plan to invest $17.6 billion in capital improvements from 2007 through 2011 (through Sept. 30, 2007 it has spent about $1.65 billion). When adjusted by SCE's current number of customers, its capital plan is not the largest in the west, but it is very high for a company that is not building base load projects.

Table 1

SCE Proposed Capital Expenditures 2007-2011

Classification	$ in Billions	% Total
Automated meter reading	1.2	6.8
Generation	2.7	15.3
Transmission	4.3	24.4
Distribution	9.4	53.4

Table 1

SCE Proposed Capital Expenditures 2007-2011 (cont.)

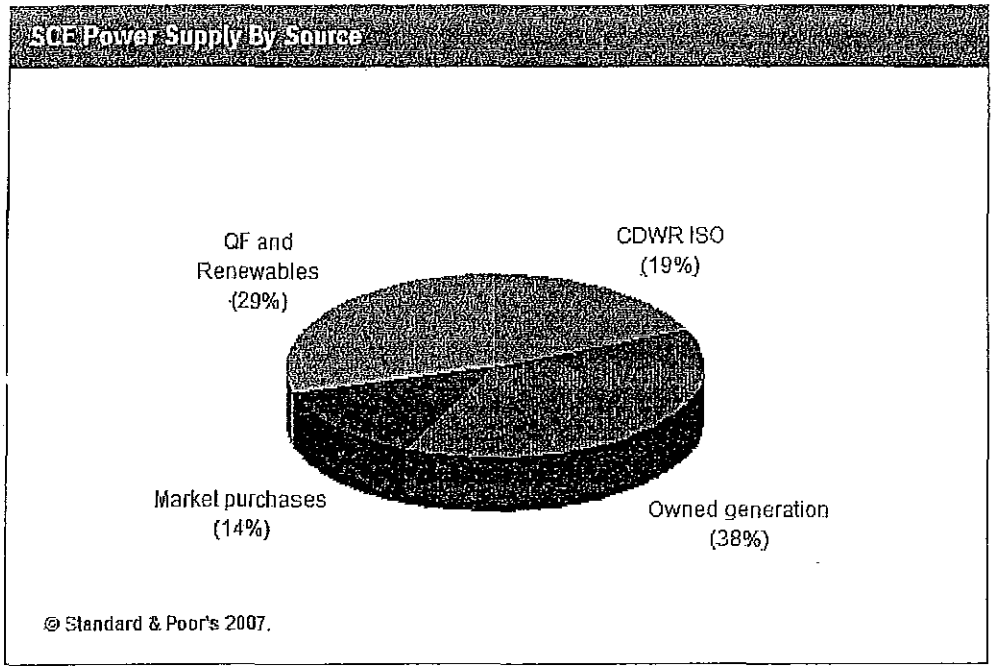
Total	17.6	100.0

Of this total, the CPUC has approved, through the company's last GRC, about $3.9 billion. If the CPUC approves the capital spending from 2009 through 2011 (which is part of its current GRC filing submitted in November 2007), capital expenditures are expected to peak at $4.3 billion in 2010 and $4.4 billion in 2011. Given that in California the GRC process is based on a forward test year and covers a three-year period, SCE has an opportunity to adjust its capital program downward in the event that the commission does not support its proposed expenditures.

If SCE pursues its current financing plans, we see the potential for credit metrics to be stressed beginning in 2009. On an unadjusted basis, the company is expected to nearly double its debt outstanding to fund the program. Expiration of California Department of Water Resources (CDWR) and qualifying facility contracts in coming years will also heighten the company's financial exposure related to power procurement and result in increasing debt imputation under our methodology.

That is, owned generation accounts for very little of SCE's power portfolio needed to serve retail load, as most of SCE's assets were divested as part of the restructuring effort in the late 1990s. While SCE is not prohibited from owning power generation, it has no near-term plans to build new generation. As a result, a second risk that is growing for the utility is related to its reliance on purchased power. As shown in the chart below, based on 2007 data SCE contracts to meet all but 38% of its power supply needs. SCE's projected net open position is expected to rise over time as the utility's load grows, CDWR and qualifying facilities (QF) contracts expire, as well as its needs to meet CPUC resource adequacy and renewable directives. In particular, SCE currently relies on CDWR contracts for nearly 19% of its power supply, but these financial obligations are borne by the state entity--not the utility. But financial responsibility for an increasing percentage of customers' energy needs will be shifted to SCE on the expiration of these contracts that substantially roll off in 2011, with the last contract completed in 2015. In addition, in time, the company's contracts with QF contracts will end and either be recontracted or replaced.

The combined effect of both the capital program and the potential to enter contracts at terms above those currently in place is expected to contribute to upward pressure on retail electric rates. Other pressures include some form of greenhouse gas regulation in 2012, significant renewable portfolio requirements, the company's heavy reliance on natural gas generation and contracts, which will cause the energy component of rates to increase when gas prices increase, and the difficulty and costs associated with citing new generation in the state. While our ratings reflect an expectation that procurement and other costs will continue to be deemed prudent and recovered as part of the generally favorable regulatory framework, we do see multiple sources of rate pressure in the coming years.



At the same time that we expect SCE to take on greater power purchase agreement (PPA) obligations to serve its loads, there are several policies that could result in load migration. For example, both community choice aggregation, which was authorized by legislation in 2002, and direct access could result in customers receiving retail electric supply from sources other than SCE. While SCE does not make a margin on generation sales, these programs give rise to concerns as to whether exit fees will continue to be properly structured to ensure that it is afforded full cost recovery of its PPAs over the life of a contract. Direct access is being considered as part of a three-part CPUC proceeding that is unlikely to be resolved before 2009. (In 2006, the CPUC adopted rules to allocate procurement costs to departing customers.) To date, community choice aggregation has been modest throughout the state, although several Southern California cities are investigating the option.

SCE faces renewable portfolio standards (RPS), which it has stated it is not likely to meet, at least in the short run. State legislation requires SCE and other investor-owned utilities to serve 20% of its customers' electricity needs with renewable energy by 2010. SCE currently has about 13 billion kilowatt-hours (kWh) under contract to meet this target, or about 17% of customer deliveries. However, SCE estimates that it will need about 17 billion kWh under current growth assumptions to meet the 2010 standard. The constraint to meeting the RPS is transmission, and of the $4.3 billion the company is planning to spend on transmission through 2011, about $1.7 billion has been earmarked to construct the Tehachapi transmission projects. (Total project costs are estimated to be $2.2 billion, and should be completed by 2013.) This project will connect some 4,500 MW of wind generation on line or in construction along the Tehachapi mountain pass to SCE's loads.

The company faces penalties of up to five cents/kWh up to $25 million per year but CPUC can waive this amount. The rating concern is not the immediate monetary cost of non compliance but the ultimate cost and impact on rates of these aggressive standards. More stringent RPS could be coming. There is a bill in the state legislature that would

require 33% by 2020 and even if it is defeated, additional renewable measures are likely to be a significant feature of state policies going forward. Finally, Assembly Bill (AB) 32, passed in 2006, rolls back carbon emissions to 1990 levels by no later than 2020. Statewide caps on emissions begin in 2012. The California Air Resources Board (CARB) is in charge of developing regulations that are not expected to be finalized before the end of 2008. Greenhouse gas regulations are expected to be an additional source of rate pressure that SCE will face. We are concerned that the utility's spending plan, along with the timing of other state initiatives, may result in not only pressuring credit metrics but also retail rates, the latter of which always invokes the risk of a breakdown in the regulatory compact.

Against these concerns is a regulatory environment that has become remarkably strong for bondholders in recent years. Evidence of this strength includes:

- Forward test-year ratemaking for generation and distribution that covers three years;
- Cost of capital proceedings have authorized credit-supportive ROEs and capital structures, including recognition of debt equivalents;
- Fuel and purchased power cost are recovered through the ERRA balancing account mechanism that sets power and fuel requirements based on forward prices and has clear triggers for rate adjustments;
- The opportunity to hedge utility exposure to fuel and purchased power up to 18 months in advance;
- A power procurement framework that is authorized by the CPUC, as well as legislation that requires SCE receive full cost recovery of procurement costs so long as it follows the plans established by the CPUC; and
- Pre-authorization of major expenditures. For example, the CPUC has authorized the company to replace the steam generators for San Onofre nuclear generating station's units 2 and 3 and has determined that the company will not be subject to prudency review so long as costs are at of below the budget of $680 million.

Liquidity

SCE's liquidity is assessed independently and in conjunction with that of its parent, Edison International. Debt-free Edison International's liquidity needs are limited to the payment of dividends to shareholders and coverage of administrative and general expenses. The debt obligations of the company's unregulated operations reside at Edison Mission Energy (EME) as well as at the project level.

As a holding company, Edison International is dependent on its subsidiaries for the cash needed to meet these obligations. SCE's dividends have historically been a principal source of these funds, along with Edison Capital, the company's investment arm. As of Sept. 30, 2007, SCE had paid $110 million of dividends to Edison International and declared an additional $25 million of dividends for future payment. In 2006, SCE paid approximately $248 million of dividends to its parent. SCE's distributions to its parent are subject to a number of restrictions imposed by the CPUC that include the requirement it maintain a 48% equity layer. SCE's large capital program is expected to limit its ability to make future dividends to its parent. SCE is barred by the CPUC from guaranteeing affiliate obligations and is not exposed to cross defaults.

Additional dividends have been provided by Edison Capital, which in 2007 made a distribution to Edison Mission Group (EMG) that in turn provided a $238 million dividend to Edison International. EMG is the parent of Mission Energy Holdings Co. (MEHC), which owns Edison Mission Energy (EME), which, in turn, is the subsidiary that holds Edison International's merchant and project plants, as well as develops wind generation. Although MEHC has met the threshold requirements for the payment of dividends to its parent, it has neither declared nor paid dividends to Edison International through the third quarter of 2007.

As of Sept. 30, 2007, Edison International's consolidated cash and cash equivalents stood at nearly $1.5 billion. Of this amount, $11 million resides at the parent. Parent liquidity is bolstered by a $1.5 billion credit facility (maturing in February 2012) that was fully available as of the end of the third quarter.

SCE also exhibits sound liquidity. SCE's cash and cash equivalents stood at $115 million as of Sept. 30, 2007, but $104 million of this total is not a true source of liquidity to SCE as it is s held by four QF projects that SCE's auditors have required it to consolidate onto its financial statements under FASB Interpretation No. (FIN) 46. Augmenting what are typically low cash balances, SCE has a $2.5 billion unsecured credit facility that terminates in February 2012. At Sept. 30, 2007 the facility supported $200 million in LOCs, with its untapped balance at $2.3 billion. In the event of a market and credit event, we anticipate that SCE's liquidity coverage will be well above 1.0x.

SCE has no scheduled debt maturities in 2008 and a modest $150 million in first mortgage bonds due in February 2009. As with many other utilities that have an A-2 commercial paper rating, in recent months disruptions in the commercial paper program have resulted in SCE relying on its bank lines for short-term cash needs.

Outlook

Preservation of the ratings will depend on SCE's ability to sustain sound credit metrics in the face of capital spending and resource procurement needs that will require either additional debt (in the case of the planned capital program) or give rise to debt equivalents (in the case of sharply higher procurement needs going forward). The stable outlook also presumes an absence of actions by Edison International and its unregulated affiliates that are detrimental to the consolidated companies' credit metrics. Continued stability in the regulatory environment will also be a crucial consideration because of the likelihood that SCE will have to flow through to ratepayers not only capital expenses but also the incremental costs of current and planned policy mandates.

An adverse outlook or rating action could result if credit metrics deteriorate or if we view the regulatory environment as being unable to charge ratepayers the full costs of all approved and proposed programs. A ratings improvement is not foreseen due to the multiple challenges facing the utility in the next few years.

Table 2

Southern California Edison Co. -- Peer Comparison

Industry Sector: INTEGRATED

	Southern California Edison Co.	FPL Group Inc.	PG&E Corp. ¶
Rating as of Dec. 17, 2007	BBB+/Stable/A-2	A/Stable/--	BBB+/Stable/A-2
	--Average of past three fiscal years--		
(Mil. $)			
Revenues	9,130.6	12,257.2	11,228.6
Net income from cont. oper.	832.3	967.9	1,905.0
Funds from operations (FFO)	2,184.9	2,295.8	1,628.5
Capital expenditures (Capex)	1,956.6	1,569.0	2,044.5
Cash and investments	116.0	458.3	1,373.7
Debt	7,261.0	10,297.3	9,918.4
Preferred stock	377.8	168.2	263.3
Equity	5,392.2	9,578.9	7,360.3
Debt and equity	12,653.3	19,876.2	17,278.7

Table 2

Southern California Edison Co. -- Peer Comparison*(cont.)

Adjusted ratios			
EBIT interest coverage (x)	4.0	2.7	2.9
FFO int. cov. (X)	5.2	4.6	2.7
FFO/debt (%)	30.1	22.3	16.4
Discretionary cash flow/debt (%)	(4.7)	(1.2)	(4.5)
Net Cash Flow / Capex (%)	90.2	112.2	65.0
Debt/total capital (%)	57.4	51.8	57.4
Return on common equity (%)	16.5	10.2	25.4
Common dividend payout ratio (un-adj.) (%)	51.5	55.2	13.9

*Fully adjusted (including postretirement obligations). ¶Rating of Pacific Gas & Electric Co.

Table 3

Southern California Edison Co. -- Financial Summary*

Org Type: Electric

	--Fiscal year ended Dec. 31--		
	2006	2005	2004
Rating history	BBB+/Stable/A-2	BBB+/Stable/A-2	BBB/Stable/A-2
(Mil. $)			
Revenues	10,038.3	9,210.6	8,143.0
Net income from continuing operations	827.0	749.0	921.0
Funds from operations (FFO)	1,808.2	2,178.1	2,568.5
Capital expenditures	2,352.4	1,794.0	1,723.4
Cash and investments	83.0	143.0	122.0
Debt	8,217.6	7,006.9	6,558.6
Preferred stock	563.0	441.4	129.0
Equity	6,361.0	5,234.5	4,581.3
Debt and equity	14,578.6	12,241.3	11,139.8
Adjusted ratios			
EBIT interest coverage (x)	3.6	4.0	4.5
FFO int. cov. (x)	3.9	5.8	6.2
FFO/debt (%)	22.0	31.1	39.2
Discretionary cash flow/debt (%)	(5.2)	0.2	(9.4)
Net Cash Flow / Capex (%)	65.0	108.9	105.2
Debt/debt and equity (%)	56.4	57.2	58.9
Return on common equity (%)	15.0	15.0	19.8
Common dividend payout ratio (un-adj.) (%)	36.3	31.2	82.0

*Fully adjusted (including postretirement obligations).

Table 4

Reconciliation Of SCE Reported Amounts With Standard & Poor's Adjusted Amounts

--Fiscal year ended Dec. 31, 2006--

Southern California Edison Co. reported amounts (mil. $)*

	Debt	Shareholders' equity	Revenues	Operating income (before D&A)	Operating income (before D&A)	Operating income (after D&A)	Cash flow from operations	Cash flow from operations	Capex
Reported	5,707.0	6,376.0	10,312.0	2,882.0	2,882.0	1,856.0	2,606.0	2,606.0	2,226.0
Standard & Poor's adjustments									
Operating leases	172.3	--	--	26.5	8.3	8.3	18.2	18.2	144.4
Intermediate hybrids reported as equity	366.0	(366.0)	--	--	--	--	(20.4)	(20.4)	--
Postretirement benefit obligations	176.2	--	--	(13.0)	(13.0)	(13.0)	2.6	2.6	--
Capitalized interest	--	--	--	--	--	--	(18.0)	(18.0)	(18.0)
Securitized utility cost recovery	(246.2)	--	(273.7)	(273.7)	(273.7)	(27.5)	(246.2)	(246.2)	--
Power purchase agreements	2,042.4	--	--	155.6	155.6	155.6	--	--	--
Reclassification of nonoperating income (expenses)	--	--	--	--	--	83.0	--	--	--
Reclassification of working-capital cash flow changes	--	--	--	--	--	--	--	(394.0)	--
Minority interests	--	351.0	--	--	--	--	--	--	--
US decommissioning fund contributions	--	--	--	--	--	--	(140.0)	(140.0)	--
Total adjustments	2,510.6	(15.0)	(273.7)	(104.6)	(122.8)	206.4	(403.8)	(797.8)	126.4

Standard & Poor's adjusted amounts

	Debt	Equity	Revenues	Operating income (before D&A)	EBITDA	EBIT	Cash flow from operations	Funds from operations	Capex
Adjusted	8,217.6	6,361.0	10,038.3	2,777.4	2,759.2	2,062.4	2,202.2	1,808.2	2,352.4

*Southern California Edison Co. reported amounts shown are taken from the company's financial statements but might include adjustments made by data providers or reclassifications made by Standard & Poor's analysts. Please note that two reported amounts (operating income before D&A and cash flow from operations) are used to derive more than one Standard & Poor's-adjusted amount (operating income before D&A and EBITDA, and cash flow from operations and funds from operations, respectively). Consequently, the first section in some tables may feature duplicate descriptions and amounts.

Ratings Detail (As Of December 18, 2007)

Southern California Edison Co.	
Corporate Credit Rating	BBB+/Stable/A-2
Commercial Paper	
Local Currency	A-2
Preferred Stock	
Local Currency	BBB-
Senior Secured	
Local Currency	A

Ratings Detail (As of December 18, 2007) (Cont.)

Senior Unsecured	
Local Currency	BBB
Subordinated	
Local Currency	BBB-

Corporate Credit Ratings History

16-Feb-2005	BBB+/Stable/A-2
17-Dec-2003	BBB/Stable/A-2
03-Dec-2003	BBB/Stable/NR

Financial Risk Profile Intermediate

Related Entities

Edison International

Issuer Credit Rating	BBB-/Stable/NR
Preferred Stock	
Local Currency	BB

Edison Mission Energy

Issuer Credit Rating	BB-/Stable/NR
Preferred Stock	
Local Currency	B-
Senior Secured	
Local Currency	BB-
Senior Unsecured	
Local Currency	BB-

Edison Mission Energy Funding Corp.

Issuer Credit Rating	BB-/Stable/--
Senior Unsecured	
Local Currency	BB-

Edison Mission Marketing and Trading

Issuer Credit Rating	BB-/Stable/--

Midwest Generation LLC

Issuer Credit Rating	BB-/Stable/--
Senior Secured	
Local Currency	BB

*Unless otherwise noted, all ratings in this report are global scale ratings. Standard & Poor's credit ratings on the global scale are comparable across countries. Standard & Poor's credit ratings on a national scale are relative to obligors or obligations within that specific country.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and
Shareholder of Southern California Edison Company

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income, cash flows and changes in common shareholder's equity present fairly, in all material respects, the financial position of Southern California Edison Company and its subsidiaries at December 31, 2007 and 2006, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2007 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Notes 1, 4, 5 and 8 to the consolidated financial statements, the Company changed the manner in which it accounts for asset retirement costs as of December 31, 2005, stock-based compensation as of January 1, 2006, defined benefit pension and other post retirement plans as of December 31, 2006, and uncertain tax positions as of January 1, 2007.

PricewaterhouseCoopers LLP
Los Angeles, California
February 27, 2008

Consolidated Statements of Income	Southern California Edison Company		
In millions Year ended December 31,	2007	2006	2005
Operating revenue	$ 10,478	$ 10,312	$ 9,500
Fuel	1,191	1,112	1,193
Purchased power	3,124	3,409	2,622
Provisions for regulatory adjustment clauses – net	271	25	435
Other operation and maintenance	2,840	2,678	2,523
Depreciation, decommissioning and amortization	1,094	1,026	915
Property and other taxes	217	206	193
Net gain on sale of utility property and plant	—	(1)	(10)
Total operating expenses	8,737	8,455	7,871
Operating income	1,741	1,857	1,629
Interest income	44	58	44
Other nonoperating income	89	85	127
Interest expense – net of amounts capitalized	(429)	(400)	(360)
Other nonoperating deductions	(45)	(60)	(65)
Income before tax and minority interest	1,400	1,540	1,375
Income tax expense	337	438	292
Minority interest	305	275	334
Net income	758	827	749
Dividends on preferred and preference stock not subject to mandatory redemption	51	51	24
Net income available for common stock	$ 707	$ 776	$ 725

Consolidated Statements of Comprehensive Income

In millions Year ended December 31,	2007	2006	2005
Net income	$ 758	$ 827	$ 749
Other comprehensive income (loss), net of tax:			
Termination and amortization of cash flow hedges – net of income tax expense of $3 and $2 for 2006 and 2005	—	5	2
Pension and postretirement benefits other than pensions:			
Net loss arising during period – net of income tax benefit of $2 for 2007	(3)	—	—
Amortization of net loss included in expense – net of income tax expense of $1 for 2007	2	—	—
Minimum pension liability adjustment – net of income tax expense (benefit) of $5 and $(1) for 2006 and 2005	—	7	(1)
Comprehensive income	$ 757	$ 839	$ 750

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Balance Sheets

In millions December 31,	2007	2006
ASSETS		
Cash and equivalents	$ 252	$ 83
Restricted cash	—	56
Margin and collateral deposits	37	55
Receivables, less allowances of $34 and $29 for uncollectible accounts at respective dates	725	939
Accrued unbilled revenue	370	303
Inventory	283	232
Accumulated deferred income taxes – net	146	250
Derivative assets	54	56
Regulatory assets	197	554
Other current assets	188	54
Total current assets	2,252	2,582
Nonutility property – less accumulated provision for depreciation of $701 and $633 at respective dates	1,000	1,046
Nuclear decommissioning trusts	3,378	3,184
Other investments	69	62
Total investments and other assets	4,447	4,292
Utility plant, at original cost:		
Transmission and distribution	18,940	17,606
Generation	1,767	1,465
Accumulated provision for depreciation	(5,174)	(4,821)
Construction work in progress	1,693	1,486
Nuclear fuel, at amortized cost	177	177
Total utility plant	17,403	15,913
Regulatory assets	2,721	2,818
Derivative assets	28	17
Other long-term assets	629	488
Total long-term assets	3,378	3,323
Total assets	$ 27,480	$ 26,110

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Balances Sheets	Southern California Edison Company	
In millions, except share amounts	December 31, 2007	2006
LIABILITIES AND SHAREHOLDERS' EQUITY		
Short-term debt	$ 500	$ —
Long-term debt due within one year	—	396
Accounts payable	914	856
Accrued taxes	42	193
Accrued interest	126	114
Counterparty collateral	42	36
Customer deposits	218	198
Book overdrafts	204	140
Derivative liabilities	100	99
Regulatory liabilities	1,019	1,000
Other current liabilities	548	624
Total current liabilities	3,713	3,656
Long-term debt	5,081	5,171
Accumulated deferred income taxes – net	2,556	2,675
Accumulated deferred investment tax credits	105	112
Customer advances	155	160
Derivative liabilities	13	77
Power-purchase contracts	22	32
Accumulated provision for pensions and benefits	786	809
Asset retirement obligations	2,877	2,749
Regulatory liabilities	3,433	3,140
Other deferred credits and other long-term liabilities	1,136	802
Total deferred credits and other liabilities	11,083	10,556
Total liabilities	19,877	19,383
Commitments and contingencies (Note 6)		
Minority interest	446	351
Common stock, no par value (434,888,104 shares outstanding at each date)	2,168	2,168
Additional paid-in capital	507	383
Accumulated other comprehensive loss	(15)	(14)
Retained earnings	3,568	2,910
Total common shareholder's equity	6,228	5,447
Preferred and preference stock not subject to mandatory redemption	929	929
Total shareholders' equity	7,157	6,376
Total liabilities and shareholders' equity	$ 27,480	$ 26,110

Authorized common stock is 560 million shares at each reporting period.

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Cash Flows

In millions Year ended December 31,	2007	2006	2005
Cash flows from operating activities:			
Net income	$ 758	$ 827	$ 749
Adjustments to reconcile to net cash provided by operating activities:			
Depreciation, decommissioning and amortization	1,094	1,026	915
Loss on impairment of nuclear decommissioning trusts	58	54	—
Other amortization	95	79	96
Stock-based compensation	18	27	21
Minority interest	305	275	334
Deferred income taxes and investment tax credits	(111)	(358)	34
Regulatory assets – long-term	148	92	387
Regulatory liabilities – long-term	157	18	(168)
Derivative assets – long-term	(11)	25	(42)
Derivative liabilities – long-term	(64)	(24)	97
Other assets	(156)	(119)	88
Other liabilities	195	325	(46)
Margin and collateral deposits – net of collateral received	24	(24)	70
Receivables and accrued unbilled revenue	147	51	(202)
Derivative assets – short-term	2	181	(211)
Derivative liabilities – short-term	(32)	12	74
Inventory and other current assets	(185)	(7)	(42)
Regulatory assets – short-term	357	(18)	17
Regulatory liabilities – short-term	19	318	192
Book overdrafts	64	—	—
Accrued interest and taxes	74	(41)	(126)
Accounts payable and other current liabilities	17	(138)	184
Net cash provided by operating activities	2,973	2,581	2,421
Cash flows from financing activities:			
Long-term debt issued	—	900	1,000
Long-term debt issuance costs	(1)	(24)	(20)
Long-term debt repaid	(207)	(352)	(1,040)
Bonds repurchased	(37)	—	—
Issuance of preference stock	—	196	591
Redemption of preferred stock	—	—	(148)
Rate reduction notes repaid	(246)	(246)	(246)
Short-term debt financing – net	500	—	(88)
Book overdrafts	—	(118)	25
Shares purchased for stock-based compensation	(135)	(107)	(122)
Proceeds from stock option exercises	56	45	53
Excess tax benefits related to stock option exercises	28	17	—
Minority interest	(210)	(322)	(345)
Dividends paid	(186)	(300)	(234)
Net cash used by financing activities	(438)	(311)	(574)
Cash flows from investing activities:			
Capital expenditures	(2,286)	(2,226)	(1,808)
Proceeds from nuclear decommissioning trust sales	3,697	3,010	2,067
Purchases of nuclear decommissioning trust investments and other	(3,830)	(3,150)	(2,159)
Sales of short-term investments	7,069	6,446	2,748
Purchases of short-term investments	(7,069)	(6,418)	(2,776)
Restricted cash	56	1	4
Customer advances for construction and other investments	(3)	7	98
Net cash used by investing activities	(2,366)	(2,330)	(1,826)
Net increase (decrease) in cash and equivalents	169	(60)	21
Cash and equivalents, beginning of year	83	143	122
Cash and equivalents, end of year	$ 252	$ 83	$ 143

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Changes in Common Shareholders' Equity

Southern California Edison Company

In millions	Common Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Common Shareholder's Equity
Balance at December 31, 2004	$ 2,168	$ 350	$ (17)	$ 2,020	$ 4,521
Net income				749	749
Other comprehensive income			1		1
Dividends declared on common stock				(285)	(285)
Dividends declared on preferred and preference stock not subject to mandatory redemption				(24)	(24)
Shares purchased for stock-based compensation		(19)		(95)	(114)
Proceeds from stock option exercises				53	53
Noncash stock-based compensation and other		11			11
Excess tax benefits related to stock option exercises		29			29
Capital stock expense and other		(10)		(1)	(11)
Balance at December 31, 2005	$ 2,168	$ 361	$ (16)	$ 2,417	$ 4,930
Net income				827	827
Other comprehensive income			12		12
SFAS No. 158 – Pension and other postretirement benefits			(17)		(17)
Tax effect			7		7
Dividends declared on common stock				(240)	(240)
Dividends declared on preferred and preference stock not subject to mandatory redemption				(51)	(51)
Shares purchased for stock-based compensation		(15)		(88)	(103)
Proceeds from stock option exercises				45	45
Noncash stock-based compensation and other		23			23
Excess tax benefits related to stock option exercises		17			17
Capital stock expense and other		(3)			(3)
Balance at December 31, 2006	$ 2,168	$ 383	$ (14)	$ 2,910	$ 5,447
Net income				758	758
FIN 48 adoption				213	213
Other comprehensive loss			(1)		(1)
Dividends declared on common stock				(100)	(100)
Dividends declared on preferred and preference stock not subject to mandatory redemption				(51)	(51)
Shares purchased for stock-based compensation				(135)	(135)
Proceeds from stock option exercises				56	56
Noncash stock-based compensation and other		18		(5)	13
Excess tax benefits related to stock option exercises		28			28
Change in classification of shares purchased to settle performance shares		78		(78)	—
Balance at December 31, 2007	$ 2,168	$ 507	$ (15)	$ 3,568	$ 6,228

Authorized common stock is 560 million shares. The outstanding common stock is 434,888,104 shares for all years reported.

The accompanying notes are an integral part of these consolidated financial statements.

TABLE 4

CLOSURE COST ESTIMATE
Ormond Beach Generating Station
1,4-Dioxane Groundwater Pump & Treat
(July 2008)

STEP #	CLOSURE ACTIVITY	COST ESTIMATE
1	Pump & Treat Discharge Permitting	$20,000
2	Work Implementation Plan/HASP	$20,000
3	PUMP & TREAT SYSTEM INSTALLATION/DEMOLITION	
	Site Preparation	$5,000
	Carbon Filtration System Set-up	$20,000
	Well Pumps, Piping & Installation	$25,000
	Discharge Leach Field Construction	$50,000
	Carbon Filtration System Lease (24 months @ $5,000/month)	$120,000
	System Demolition	$20,000
4	OPERATION & MAINTENANCE	$240,000
	Carbon Change-outs (12 events @ $20,000)	$96,000
	Operation & Maintenance ($4,000/month)	$72,000
	Sampling, Analysis & Reporting ($3,000/month)	
5	CLOSURE CERTIFICATION REPORT	$50,000
	SUBTOTAL	$698,000
6	CONTINGENCY	$150,000
	TOTAL	$888,000

PRICEWATERHOUSECOOPERS

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Report of Independent Auditors

To the Board of Directors of
Southern California Edison Company

We have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of Southern California Edison Company and its subsidiaries (the "Company") as of December 31, 2007 and the related consolidated statements of income, comprehensive income, cash flows and changes in common shareholder's equity for the year then ended, and have issued our report thereon dated February 27, 2008.

The accompanying letter dated March 28, 2008 from the Senior Vice President and Chief Financial Officer of the Company to the Northern California Branch Chief, Department of Toxic Substances Control, Statewide Compliance Division and Staff Counsel, Department of Toxic Substances Control (the "CFO Letter") was prepared in support of the Company's use of the financial test to demonstrate liability coverage, closure and post-closure care as specified in the applicable sections of the California Code of Regulations, Title 22, Division 4.5, Chapter 14 and 15, Article 8. The CFO Letter, Alternative II, items 7, 8, 9, 10 and 11, contains information on tangible net worth and total assets in the United States, which management derived from the audited financial statements referred to above. This information is used to demonstrate compliance with the applicable sections of the California Code of Regulations as referenced above.

In connection with our audit, nothing came to our attention that caused us to believe that the Company did not comply with the tangible net worth or the assets located in the United States requirements. However, our audit was not directed primarily toward obtaining knowledge of such noncompliance.

This report is intended solely for the information and use of the board of directors and management of the Company and the Department of Toxic Substances Control and is not intended to be and should not be used by anyone other than these specified parties.

PricewaterhouseCoopers LLP
Los Angeles, California
March 28, 2008