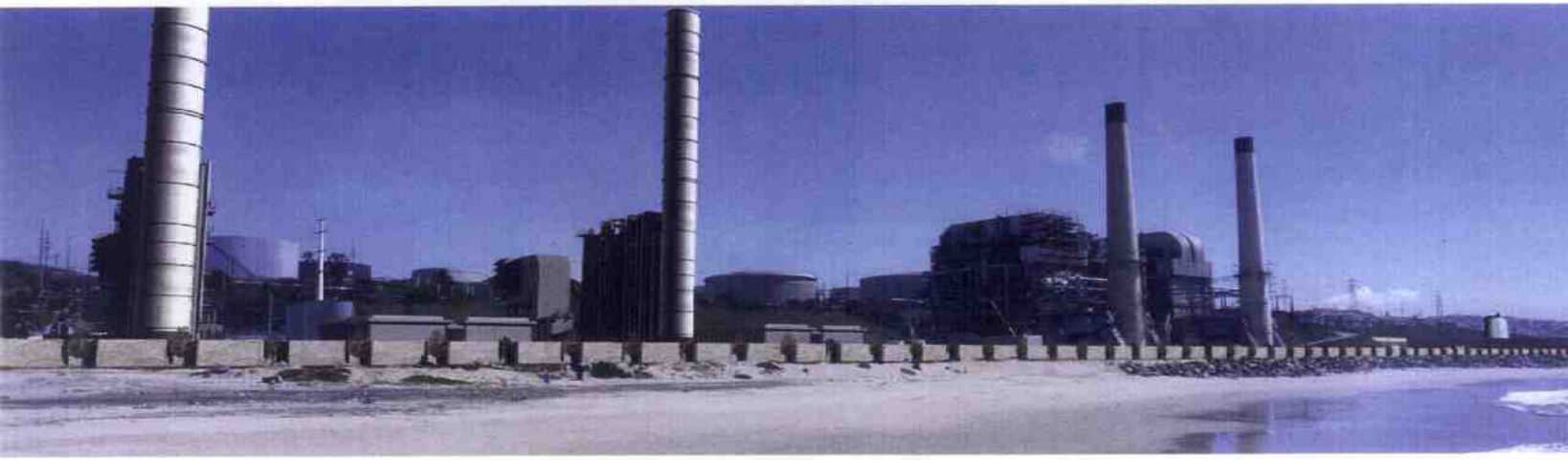
Responses to CEC Data Requests, Set 2
El Segundo Power Redevelopment Project

00-AFC-14C

September 2007



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El Segundo Redevelopment Project
(00-AFC-14C)

Responses to CEC Data Requests Set 2

Prepared for:

California Energy Commission

September 28, 2007

TABLE OF CONTENTS

EL SEGUNDO POWER REDEVELOPMENT
PETITION TO AMEND (00-AFC-14C)

Summary of Responses to Data Requests

Responses to the California Energy Commission's ("CEC") Data Requests, Set 1 were provided on September 10, 2007. Appendices provided at that time include the following:

Appendix	Data Request	Appendix Description
A	Air Quality #1	NOx Reclaim Trading Credits
B	Air Quality #3	2006/2007 Sulfur Data
C	Air Quality #10	Greenhouse Gas Emissions Estimates
D	Biological #2	▪ Figure 3.3-1: Barge Delivery Route ▪ Figure 3.3-2: Preliminary Beach Roll Off Survey & Elevation
E	Biological #3	Draft Biological Resources Mitigation Implementation and Monitoring Plan
F	Cultural #1	▪ Phase I Cultural Assessment of 10.11 Acre Parcel at 777 W. 190th Street ▪ Personnel Résumés

The following Appendices are provided in response to the CEC's Data Requests, Set 2:

Appendix	Data Request	Appendix Description
G	Public Health #1	Excerpts from El Segundo's *Application for Determination of Compliance and Permit to Construct* submitted to the South Coast Air Quality Management District (June 2007)
H	Hazardous Materials #1	Material Safety Data Sheets for Oxygen Gas
I	Soil & Water #5	September 26, 2007 Will Serve Letter from the City of El Segundo
J	Soil & Water #7	▪ Los Angeles Regional Water Quality Control Board Order No. 01-043: Water Recycling Requirements for West Basin Municipal Water District ▪ Waste Discharge Requirements for West Basin Municipal Water District (File No. 94-062) ▪ Monitoring and Reporting Program No. CI-7453 for West Basin Municipal Water District
K	Soil & Water #9	September 27, 2007 Intent to Serve Letter from West Basin Municipal Water District
L	Soil & Water #10	Los Angeles County Sanitation Districts: *Loadings for Each Class of Land Use*

Appendix	Data Request	Appendix Description
M	Soil & Water #11	Preliminary Draft ESC Plan: ▪ Figure 1: Beach Delivery Corridor ▪ Figure 2: Barge and Ramp Location ▪ Figure 3: Ramp Construction
N	Visual Resources – Plume #2	Letter dated July 12, 2007 docketing new Visual Resources section (Section 3.12) with Energy Commission
O	Traffic & Transportation #1	Sensitivity Analysis for Laydown Site
P	Visual Resources – #1	September 27, 2007 City of El Segundo Comments Regarding Petition to Amend

PUBLIC HEALTH

Data Responses
Technical Area: Public Health

BACKGROUND

The Request for Amendment claims on page 3-79 that a net decrease in noncriteria emissions will occur as a result of the proposed use of different combustion turbines, the elimination of a cooling tower, and the elimination of the diesel emergency fire water pump. While staff agrees that these proposed project amendments will result in a decrease in risk to public health due to lower emissions of Toxic Air Contaminants, staff nevertheless needs a stand-alone human health risk assessment for the project that is proposed to be built in order to completely assess all potential impacts.

Data Request 1: Please provide a human health risk assessment for the revised project using the Hot Spots Analysis and Reporting Program (HARP) model.

Response 1: Because the noncriteria pollutant emissions for the amended project are lower then those for the approved project, no new significant public health impacts are expected for the amended project. This conclusion was confirmed by the Tier 4 health risk assessment, which was performed as part of the permit application package submitted to the South Coast Air Quality Management District for the amended project (see pages 23 to 24, Appendix M, and Appendix Q of El Segundo's Application for Determination of Compliance and Permit to Construct, a copy of which was submitted to the CEC on June 21, 2007). Nevertheless, provided herein for Staff's convenience is a copy of the relevant sections of this document (see attached Appendix G to ESPR's Data Responses, Set 2).

HAZARDOUS MATERIALS

Technical Area: Hazardous Materials Management

BACKGROUND

The Request for Amendment describes the use of hazardous materials on pages 2-11 and 3-56. Information on these pages is incomplete and appears to be contradictory in that one page mentions the need for an oxygen scavenger while the other page describes the elimination of the need for an oxygen scavenger and the use of a "peroxide". Staff needs a more complete discussion of the hazardous materials to be used on this site and the amounts and location of storage tanks.

Data Request 1: Please provide the identity of the "peroxide" proposed for use at the power plant, its CAS number, the amount to be stored, and a Material Safety Data Sheet (MSDS).

Response 1: ESPR will employ an Oxidizing All Volatile Treatment (AVT(O)) program for control of the boiler feedwater's chemistry. The AVT(O) program eliminates the need for the use of a reducing agent (i.e., oxygen scavenger) such as hydrazine to control corrosion. In an AVT(O) program chemical dosing of the boiler feedwater is limited to dosing with oxygen to maintain dissolved oxygen concentrations of up to 100 parts per billion (ppb) and dosing with ammonia to control pH levels.

ESPR has elected to use oxygen gas as the oxygen source in the AVT(O) program boiler feedwater chemistry control. Oxygen gas (compressed gas) is currently used at the facility for welding and other hot-work applications. Applicable and appropriate worker safety policies and procedures are currently in place for the safe handling and storage of oxygen gas (CAS No. 7782-44-7). Therefore, the use of oxygen gas for boiler feedwater chemistry control does not constitute a new chemical use for the ESPR Project.

A Material Safety Data Sheet (MSDS) for oxygen gas (compressed) is provided in the attached Appendix H to these Responses. The amount of oxygen gas necessary to support the AVT(O) program and maintain a dosing rate of 100 ppb is dependant on actual operating hours, but is not anticipated to exceed 3,500 standard cubic feet (scf).

Data Request 2: Please provide a revised list of <u>all</u> hazardous materials that will be used and/or stored on the site, the CAS number, the strength, the amount, the proposed use, and the proposed locations of storage tanks.

Response 2: Please see the following R2C2 Hazardous Materials Usage Table (Table Haz-1).

TABLE HAZ-1 - R2C2 HAZARDOUS MATERIALS USAGE TABLE							
Material	**CAS No.**	**Purpose/Use**	**Percent**	**Quantity**	**Storage**		**Comments**
					Container Type	**Location**	
Ion Exchange Resin	Proprietary Mixture	Demineralization of boiler feedwater	10-70%	3 units	Trailer	West of Units 3,4 @ water treatment area	I/E Resin contained w/in mobile trailer units, operating wt of 55,000 lbs each
Oxygen Gas	7782-44-7	1. Maintain boiler Feedwater dissolved O2 levels 2. Maintenance, hotwork	>99%	3,500 scf	Cylinder	1. Dosing Chemical Skid 2. SW of warehouse 3. Maint. Shop	Adjacent to each HRSG Boiler feedwater pumps, west of each unit's Fin Fan Cooler
Aqueous Ammonia (Sodium Hydroxide Solution)	1336-21-6	1. Maintain boiler Feedwater pH level 2. NOx emission control	28-29%	20,000 gal	Tank, pipeline	1. Dosing Chemical Skid 2. SCR Skid 3. Bulk UST Tank	1. Adjacent to each HRSG Boiler feedwater pumps, west of each unit's Fin Fan Cooler 2. NW of each HRSG 3. SE of Switchyard
Acetylene	74-86-2	Maintenance, hotwork	> 99.8	10,950 cf	Cylinder	1. Maint. Shop 2. SW of warehouse	
Argon	7440-37-1	Maintenance, hotwork	> 99.8	1,410 cf	Cylinder	3. Maint. Shop 4. SW of warehouse	
Propane	74-98-6	Mobile equipment fuel	>87.5%	300 cf	Cylinder	SW of warehouse	
Simple Green Cleaner/Degreaser (2-Butoxyethanal)	Mixture	Equipment Maintenance/General Housekeeping	6%	450 gal	Drum	Lube Oil Storage to be located at Units 5-7	
Sulfuric Acid	7664-93-9	Electrolyte/Battery Acid	29.3%	3,000 gal	Battery	Battery Room to be located at Units 5-8	
Mineral Oil (Petroleum Hydrocarbons)	8002-05-9	Generator Transformer cooling	>99%	40,000 gal	Transformer	Transformers to be located at units 5 & 7, east end	

Lubricating Oil (Petroleum Distillates)	8002-05-9	Turbine cooling	> 99%	20,000 gal	Tank Reservoir	Lube Oil Cooler Reservoirs to be located at Units 5,6 & 7,8	
Paint	107-21-7	Equipment maintenance	varies	500 gal	Drum	Chemical Storage to be located at Units 5-7	
Mineral Spirits (Paint Thinner - Solvent)	647-42-887	Equipment maintenance	>80%	400 gal	Drum	Chemical Storage to be located at Units 5-7	
ZOK mx	Proprietary Mixture	Gas compressor cleaning fluid	Mixture	As Needed	Drum, Tank	Gas compressor skid to be located west of each Fin Fan Cooler	
EDTA Chelating Agent	Proprietary Mixture	HRSG and boiler feedwater systems cleaner	Mixture	As Needed	Drum, Tank	HRSG and boiler feed pumps to be located at Units 6 & 8	

SOIL & WATER RESOURCES

Technical Area: Soil and Water Resources

BACKGROUND

The ESPR proposes to use recycled water for all non-potable operation uses and proposes to use potable water as a backup source. Additional information on the estimated amount of potable water consumption and the availability of other non-potable sources is required for staff to conduct a complete analysis of potential impacts to water resources and the project's compliance with applicable LORS.

Data Request 1: Please provide an itemized estimate in tabular format of daily and annual average potable water consumption for plant construction, equipment wash water, hydrostatic testing of all pipelines, and any other uses for the construction of the ESPR.

Response 1: Please see Table Soil & Water-1 below:

TABLE SOIL & WATER-1

Potable Water Source	**Gallons Per Day**	**Gallons Per Year**
City of El Segundo (Metropolitan Water District of Southern California)		
Drinking Water(1)(2)	178	55,461(8)
Sanitary(1)	356(3)	110,922(8)
Dust Suppression	4,144(4)	1,248,000
Equipment Wash(5)	250(6)	78,000
Hydrostatic Testing(1)	20,000(7)	504,000(9)
Total Plant Construction(1)	25,000	2,019,072

(1) Based on information in original AFC application with a 12 percent reduction in work force based on PTA submittal.
(2) Based on an average of 178 workers supplied with 1 gallon per day.
(3) Hand wash stations only, portable chemical toilets not included. Based on 2 gallons per worker.
(4) Based on one (1) 2000 gallon water truck filling up 2 times per day.
(5) The majority of the construction equipment will not be wet washed. Demolition equipment will only be wet washed for mobilization decontamination. Dry wash will be employed for most non-contact equipment during demolition and construction.
(6) Based on demolition equipment list (10 pieces) for equipment that "may" be wet washed once per week (6 day week), 150 gallons per wash.
(7) Hydrostatic testing pipelines and equipment assumes four (4) new offsite pipelines, and major equipment such as service and deionized water tanks, boilers, in-plant process water piping.
(8) Based on a 6 day work week. Total project duration estimated at 26 months.
(9) Assumes that all hydrostatic testing occurs in same year.

Data Request 2: Please provide the daily potable water consumption estimates requested in Item 1 above as an average in gallons per minute and the annual water consumption in acre-feet per year.

Response 2: Please see Table Soil & Water-2 below:

TABLE SOIL & WATER-2

Potable Water Source		
	Gallons Per Minute	**Acre-Feet Per Year**
City of El Segundo (Metropolitan Water District of Southern California)		
Drinking Water	N/A(1)	0.17
Sanitary	N/A(2)	0.34
Dust Suppression	~3(3)	3.83
Equipment Wash(5)	6(3)	0.24
Hydrostatic Testing(1)	N/A(4)	1.55
Total Plant Construction(1)	~10	6.2

(1) Drinking water for construction workers will be provided by bottled water vendor.
(2) Hand wash and construction emergency showers to be self-contained portable units filled up daily.
(3) Average estimated Gallons Per Minute flow.
(4) Flow as available by supply line. Intermittent use.

Data Request 3: Please provide a reliability assessment of the recycled water supply and distribution infrastructure from the recycled water supplier to the ESPR. As part of the assessment, please provide the expected frequency and duration of any potential disruption of the recycled water supply or distribution system.

Response 3: Recycled water will be supplied to the ESPR by West Basin Municipal Water District (West Basin). West Basin is permitted by the Los Angles Regional Water Quality Control Board to produce recycled Title 22 water for industrial and landscape irrigation. West Basin production and discharge of recycled Title 22 water is regulated under Water Recycling Requirements contained in Order No. 94-113, amended by Orders No. 97-070, No. 98-084, 01-043, and No. R4-2002-0173(File No. 94-062). The West Basin provides different services levels to customers based on usage needs. West Basin provides non-interruptible service for a premium charge. The non-interruptible service is secured through purchase agreements.

ESP II received the requisite "Will Serve" letter during the original AFC proceedings. However, due to the proposed modification, ESP II has submitted a request to West Basin for a revised "Will Serve" letter. West Basin has provided a letter stating its intent to provide a new "Will Serve" letter to accommodate the demand and water quality for the plant modifications documented in the PTA (see Appendix K).

ESPR's estimated demand will be 34,560 gallons per day (average daily use) and up to 577,920 gallons per day (peak operational use) of Title 22 recycled water (tertiary disinfected). West Basin is a public water agency that has the ability to serve recycled water for a long-term period (30+ years) and has adequate capacity to serve ESPR

The new reclaim water pipeline will be an underground pipeline and will begin at a tie-in point on an existing 12-inch diameter reclaim water main near the intersection of Richmond Street and El Segundo Boulevard. The pipe will be routed west along El Segundo Boulevard through an alternate water line study area, west on Grand Avenue and then turning south on Vista Del Mar. Immediately north of the power plant property, the new reclaim water pipeline will be routed under Vista Del Mar at an overpass that is currently utilized by Chevron Refinery for routing pipe. Construction of the proposed water line will meet the requirements established by the state governing recycled water distribution and the City of El Segundo. The pipeline will be constructed of 10-inch diameter HDPE pipe and will extend approximately 1.75 miles from the tie-in point to the termination point within the plant site.

West Basin will own, operate, and maintain the reclaim water and city water supply pipeline. As owners of the offsite water supply pipeline and associated facilities, West Basin will operate and maintain the line in accordance with applicable regulations, including Title 22 California Code of Regulations, Division 4 Environmental Health, Chapter 3: Water Recycling Criteria, as well as in accordance with its normal operating procedures. While the water supply pipelines and associated facilities will be constructed as a part of the ESPR Project, the pipelines will be built to the applicable standards and requirements governing the West Basin facility.

There are numerous methods of determining the reliability of an infrastructure system, including some involving very elaborate modeling programs. However, due to the fact that the proposed pipeline is not yet in existence, the reliability analysis provided below is appropriate.

Since the source of recycled water supplied to West Basin will be reasonably secure and since the ESPR site will have some redundancy through the existing recycled water irrigation line, recycled water will be reliably supplied to ESPR. The most likely source of possible interruption will be from other underground utility failures or service and/or construction work around the offsite distribution system (i.e., outside forces not necessarily associated with normal West Basin or ESPR operations). Any subsurface work, be it routine or emergency repair, must request a Dig Alert ticket number prior to the start of any excavation work per Government Code section 4216.2. However, even with these rules, incidents may occur where underground pipelines are disrupted as the El Segundo area has a high density of utility and commercial underground pipelines. The length of any possible outage is further discussed in response to Data Request 4.

Data Request 4: Please provide a reasonable estimate in days or hours, based on the reliability assessment requested in Item 3, that potable water would be required as a backup source for ESPR operation.

Response 4: Based on the scenario detailed in the response to item 3 the longest reasonably estimated period that potable water would be needed as a backup to recycled water would be 48 hours. Based on an assumed outage for recycled water of 48 hours and the anticipated operational dispatch of the ESPR Project as a peaking plant the longest duration that potable would be needed as a backup supply would be 32 hours (2 days of 16 hours of operation per day, peak dispatch season). During peak demand the plant demands 602 gallons per minute, which during a 32 hour period of operation would be 1,155,840 gallons for a 48-hour outage, or 3.55 acre-feet per year.

Again, this scenario assumes that the existing recycled irrigation line which is currently supplied by West Basin, via the City of El Segundo would also be disrupted, and that the disruption would occur during peak 3-month operational season.

ESPR intends to fully comply with Condition of Compliance Water Res-2 and will only operate while the identified sources of recycled and potable water are available.

Data Request 5: Please provide a "Will Serve" letter from the City of El Segundo, which commits the City to the long-term (30 – 35 years) delivery of potable water to the ESPR; a discussion of the supply reliability including the area of origin of the raw water source; and the potential impacts of ESPR potable water use on other municipal and industrial users over the 30 – 35 year delivery period.

Response 5: Appendix I includes a copy of the "Will Serve" letter ESP II received from the City of El Segundo. A discussion of the supply reliability including the area or origin of the raw water source, and the potential impacts of ESPR potable water use on other municipal and industrial users over the 30-35 year delivery period is presented below.

Potential Impacts of ESPR Recycled Water Use On Future Customers Over The 30-35 year Delivery Period

Potable water will be used for drinking and sanitary functions in the plant. Potable water from City of El Segundo will be used as the source for drinking and sanitary purposes, and will not be used for power plant processes. One hundred percent (100%) of the drinking water the City of El Segundo distributes is received from the Metropolitan Water District of Southern California (MWD). The reliability of the potable water supply will not affect the reliability of the plant to operate. The facility will also utilize city water for emergency eyewash and showers, and fire emergencies. Since the R2C2 design will contribute a 99 percent decrease in potable water usage, with a comparable power generation capacity, the project constitutes a net benefit to the other municipal and industrial users of El Segundo potable water.

The City of El Segundo has not experienced potable water delivery issues due to a lack supply from the MWD. The City of El Segundo only has scheduled outages for large water main repairs. The City of El Segundo also maintains two separate potable water reservoirs as a back up for the continual feed from MWD.

In the event that potable water supplied by the City of El Segundo is interrupted, sanitary water will be trucked in until service is restored. Emergency equipment such as eye wash and showers are connected to the potable water tank and has sufficient capacity to supply water in emergency situations.

BACKGROUND

State of California Water Recycling Criteria (adopted in December 2000) requires the submission of an engineering report to the Los Angeles Regional Water Quality Control Board

(LARWQCB) and the Department of Health Services (DHS) before recycled water projects are implemented.

Data Request 6: Please define the level of Title 22 Treatment (disinfected tertiary, disinfected secondary-2.2, or disinfected secondary-23) of all recycled water sources proposed for use for any purpose of ESPR construction, landscape irrigation, and industrial purposes.

Response 6: The West Basin Municipal Water District (West Basin) will provide to ESPR disinfected secondary treated-1st pass RO recycled water for industrial purposes. West Basin's disinfected secondary treated-1st pass RO recycled water meets the Title 22 regulatory definition of disinfected tertiary recycled water, based on the following discussion:

1) Title 22 California Code of Regulations, Division 4 *Environmental Health*, Chapter 3: *Water Recycling Criteria,* Article 3: *Uses Of Recycled Water*, establishes the type of recycled water that may be used for landscape irrigation and industrial applications:

   a) Recycled water used for the surface irrigation of the following shall be a disinfected tertiary recycled water, except that for filtration pursuant to Section 60301.320(a) coagulation need not be used as part of the treatment process provided that the filter effluent turbidity does not exceed 2 NTU, the turbidity of the influent to the filters is continuously measured, the influent turbidity does not exceed 5 NTU for more than 15 minutes and never exceeds 10 NTU, and that there is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes:

      i) Food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop,
      ii) Parks and playgrounds,
      iii) School yards
      iv) Residential landscaping
      v) Unrestricted access golf courses, and
      vi) Any other irrigation use not specified in this section and not prohibited by other sections of the California Code of Regulations.

   b) Recycled water used for industrial or commercial cooling or air conditioning that involves the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates a mist shall be disinfected tertiary recycled water.

   c) Use of recycled water for industrial or commercial cooling or air conditioning that does not involve the use of a cooling tower, evaporative condenser, spraying, or any mechanism that creates a mist shall be at least disinfected secondary-23 recycled water.

   d) Whenever a cooling system, using recycled water in conjunction with an air conditioning facility, utilizes a cooling tower or otherwise creates a mist that could come into contact

with employees or members of the public, the cooling system shall comply with the following:

i) A drift eliminator shall be used whenever the cooling system is in operation.
ii) A chlorine, or other, biocide shall be used to treat the cooling system recirculating water to minimize the growth of *Legionella* and other microorganisms.

2) The California Water Recycling Criteria (adopted December 2000) define Disinfected Tertiary Recycled Water as a wastewater, which has been oxidized and meets the following:
   a) Has been coagulated* and passed through natural undisturbed soils or a bed of filter media pursuant to the following:
      i) At a rate that does not exceed 5 GPM/ft^2 in mono, dual or mixed media gravity or pressure filtration systems, or does not exceed 2 GPM/ft^2 in traveling bridge automatic backwash filters; and
      ii) The turbidity does not exceed any of the following; a daily average of 2 NTU, 5 NTU more than 5% of the time within a 24-hour period, and 10 NTU at any time.
      *Note: Coagulation may be waived if the filter effluent does not exceed 2 NTU, the filter influent is continuously measured, the filter influent turbidity does not exceed 5 NTU, and automatically activated chemical addition or diversion facilities are provided in the event filter effluent turbidity exceeds 5 NTU.

   <u>*OR*</u>

   a) Has been passed through a micro-, nano-, or reverse osmosis (RO) membrane following which the turbidity does not exceed any of the following:

      i) 0.2 NTU more than 5% of the time within a 24-hour period; and
      ii) 0.5 NTU at any time.

   <u>*AND*</u>

   b) Has been disinfected by either:
      i) A chlorine disinfection process that provides a CT of 450 mg-min/l with a modal contact time of not less than 90 minutes based on peak dry weather flow, or
      ii) A disinfection process that, when combined with filtration, has been demonstrated to achieve 5-log inactivation of virus.

3) West Basin produces five different qualities of recycled water, all of which meet the treatment and water quality requirements specified in the California Department of Health Services Water Recycling Criteria for the different recycled water applications:

   a. <u>Tertiary Water</u>: Secondary treated wastewater that has been filtered and disinfected for a wide variety of industrial and irrigation uses.
   b. <u>Nitrified Water</u>: Tertiary water that has been nitrified to remove ammonia for industrial cooling towers.

c. Softened Reverse Osmosis Water: Secondary treated wastewater pretreated by either lime clarification or microfiltration, followed by reverse osmosis (RO) and disinfection for groundwater recharge, which is superior to state and federal drinking water standards.
d. Pure Reverse Osmosis Water: Secondary treated wastewater that has undergone microfiltration, RO and disinfection for low-pressure boiler feed water.
e. Ultra-Pure Reverse Osmosis Water: Secondary treated water that has undergone microfiltration, RO, disinfection and second-pass RO for high-pressure boiler feed water.

4) West Basin's Recycled Water Permit, Order No. 01-043, limits the type of Title 22 recycled water that is permitted for reuse as irrigation water or for industrial applications to disinfected tertiary water:

I. RECYCLED WATER LIMITATIONS
   a. Conventionally Treated Title 22 Recycled Water
      i. Recycled water used for irrigation and industrial application other than boiler feed shall be limited to disinfected tertiary recycled water only.

II. SPECIFICATIONS FOR USE OF RECYCLED WATER
   a. The boiler feed recycled water shall be used by the Chevron Refinery only.
   b. The disinfected tertiary recycled water may be used for the following:
      i. Surface irrigation in the following areas:
         I. Parks and playgrounds;
         II. School yards;
         III. Residential landscaping;
         IV. Unrestricted access golf courses; and
         V. Any other irrigation use not specified in this section and not prohibited by other sections of the California Code of Regulations.
      ii. Industrial or commercial cooling tower; and
      iii. Industrial boiler feed.

In summary, as demonstrated in the preceding discussion, the only type of Title 22 recycled water produced at the West Basin facility for use as irrigation water and industrial applications is disinfected tertiary recycled water.

Data Request 7: Please provide a discussion of the permits and oversight requirements of the LARWQCB and DHS for the supply and use of recycled water at the ESPR, and whether a board hearing will be required per the provisions of Water Code Section 13523 et seq.

Response 7: The public agencies within the State of California with primary responsibility for the regulation of recycled water use in California are:

- The State Department of Health Services (DHS) and any DHS designated local heath agency; and

- The State Water Resources Control Board (SWRCB) and the State's nine (9) Regional Water Quality Control Boards (RWQCB).

The following regulatory references[1] define and establish these agencies' authority to regulate recycled water use in California, and the permitting and reporting obligations of producers, purveyors and users of recycled water:

13520. Recycling criteria

As used in this article "recycling criteria" are the levels of constituents of recycled water, and means for assurance of reliability under the design concept which will result in recycled water safe from the standpoint of public health, for the uses to be made.

13521. DHS establishes recycling criteria

The State Department of Health Services shall establish uniform statewide recycling criteria for each varying type of use of recycled water where the use involves the protection of public health.

13522. Abatement by DHS or local health officer

(a) Whenever the State Department of Health Services or any local health officer finds that a contamination exists as a result of the use of recycled water, the department or local health officer shall order the contamination abated in accordance with the procedure provided for in Chapter 6 (commencing with Section 5400) of Part 3 of Division 5 of the Health and Safety Code.

(b) The use of recycled water in accordance with the uniform statewide recycling criteria established pursuant to Section 13521, for the purpose of this section, does not cause, constitute, or contribute to, any form of contamination, unless the department or the regional board determines that contamination exists.

13522.5. Reports

(a) Except as provided in subdivision (e), any person recycling or proposing to recycle water, or using or proposing to use recycled water, within any region for any purpose for which recycling criteria have been established, shall file with the appropriate regional board a report containing information required by the regional board.

(b) Except as provided in subdivision (e), every person recycling water or using recycled water shall file with the appropriate regional board a report of any material change or proposed change in the character of the recycled water or its use.

(c) Each report under this section shall be sworn to, or submitted under penalty of perjury.

(d) This section shall not be construed so as to require any report in the case of any producing, manufacturing, or processing operation involving the recycling of water solely for use in the producing, manufacturing, or processing operation.

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[1] California Water Code, Division 7: Water Quality; Chapter 7: Reclamation; Article 4: Regulation

(e) Except upon the written request of the regional board, a report is not required pursuant to this section from any user of recycled water which is being supplied by a supplier or distributor for whom a master recycling permit has been issued pursuant to Section 13523.1.

13523. DHS recommendation requirement

(a) Each regional board, after consulting with and receiving the recommendations of the State Department of Health Services and any party who has requested in writing to be consulted, and after any necessary hearing, shall, if in the judgment of the board, it is necessary to protect the public health, safety, or welfare, prescribe water reclamation requirements for water which is used or proposed to be used as recycled water.

(b) The requirements may be placed upon the person reclaiming water, the user, or both. The requirements shall be established in conformance with the uniform statewide reclamation criteria established pursuant to Section 13521. The regional board may require the submission of a preconstruction report for the purpose of determining compliance with the uniform statewide reclamation criteria. The requirements for a use of recycled water not addressed by the uniform statewide reclamation criteria shall be considered on a case-by-case basis.

13523.1. Master permit requirements

(a) Each regional board, after consulting with, and receiving the recommendations of, the State Department of Health Services and any party who has requested in writing to be consulted, with the consent of the proposed permittee, and after any necessary hearing, may, in lieu of issuing waste discharge requirements pursuant to Section 13263 or water reclamation requirements pursuant to Section 13523 for a user of recycled water, issue a master reclamation permit to a supplier or distributor, or both, of recycled water.

(b) A master reclamation permit shall include, at least, all of the following: (1) Waste discharge requirements, adopted pursuant to Article 4 (commencing with Section 13260) of Chapter 4.

(2) A requirement that the permittee comply with the uniform statewide reclamation criteria established pursuant to Section 13521. Permit conditions for a use of recycled water not addressed by the uniform statewide water reclamation criteria shall be considered on a case-by-case basis.

(3) A requirement that the permittee establish and enforce rules or regulations for recycled water users, governing the design and construction of recycled water use facilities and the use of recycled water, in accordance with the uniform statewide reclamation criteria established pursuant to Section 13521.

(4) A requirement that the permittee submit a quarterly report summarizing recycled water use, including the total amount of recycled water supplied, the total number of recycled water use sites, and the locations of those sites, including the names of the hydrologic areas underlying the recycled water use sites.

(5) A requirement that the permittee conduct periodic inspections of the facilities of the recycled water users to monitor compliance by the users with the uniform statewide

reclamation criteria established pursuant to Section 13521 and the requirements of the master reclamation permit.

(6) Any other requirements determined to be appropriate by the regional board.

Recycled water will be supplied to ESPR by the West Basin Municipal Water District (West Basin). West Basin is permitted by the Los Angles Regional Water Quality Control Board (LARWQCB) to produce recycled Title 22 water for industrial use and landscape irrigation. West Basin's production and discharge of recycled Title 22 water is regulated under Water Recycling Requirements contained in Order No. 94-113, amended by Orders No. 97-070, No. 98-084, 01-043, and No. R4-2002-0173 (File No. 94-062). Copies of West Basin's current permits and monitoring requirements are provided as Appendix J.

West Basin is a public agency providing wholesale recycled water to public and private purveyors. The purveyors then sell, on a retail basis, and deliver the recycled water to the end users. The purveyor is responsible to process the user's application, inspection of the point-of-use facility, and determine that the end-user has complied with all conditions of use.

Order No. 01-043: *Water Recycling Requirements for West Basin Municipal Water District* serves as a master permit, as defined by Section 13523.1 of the Water Code:

- Permit Finding 15: Pursuant to Section 60323, Title 22 of the California Code of Regulations, the Regional Board has consulted with the State DHS regarding the proposed production, distribution, and use of recycled water; and has incorporated the department's recommendations in Order No. 01-043;
- Permit Finding 17: The requirements contained in Order No. 01-043, as they are met, will be in conformance with the goals and objectives of the Basin Plan and requirements of the Water Code;
- Permit Finding 19: West Basin had prepared an engineering report on its proposed production, distribution, and use of recycled water in irrigation and industrial cooling tower applications on April 14, 1994. The State DHS approved the engineering report on October 19, 1994. West Basin submitted an amended Engineering Report on August 2, 1996, and an addendum to the Report on March 5, 1997, for the Phase II Expansion Project that increased design capacity. The State DHS approved the amended Engineering Report on April 3, 1997. For the production, distribution, and use of boiler feedwater, West Basin filed another amended Engineering Report for the Phase III Expansion Project on September 12, 2000. This amended Engineering Report was approved by the State DHS on October 23, 2000;
- Permit Condition I: *Recycle Water Limitations,* establish conditions that requires Waste Basin to comply with the uniform statewide reclamation criteria established pursuant to Section 13521 of the Water Code;
- Permit Condition V: *Provisions* requires West Basin (i.e. the Producer) be responsible to ensure that all users of recycled water comply with the specifications and requirements for such use as stipulated in Order No. 01-043; and,
- Permit Condition II: *Specifications For the Use of Recycled Water,* establishes the end user's application of West Basin's recycled water. Provision II.B limits the use of West Basin's disinfected tertiary recycled water to surface irrigation (i.e. landscape and

dust control irrigation) cooling system feedwater, when the cooling system does not employ a cooling tower; and as Industrial boiler feedwater.

ESPR proposed use of West Basin's recycled water is consistent with the Provision II.B of Order No. 01-043, and as such, is an approved use as permitted in Order No. 01-043. Consequently, there is no additional requirement, by either West Basin, as the Producer, or ESPR, as the end-user, to prepare a new engineering report or to amend West Basin's current engineering report. Therefore, since no new WRRS, engineering report, or amendment to existing WRRS will be required (pursuant to Water Code section 13522.21(e), 13523.1, and WRRS issued to West Basin [Order Nos. 94.113, 97-070, 98-084, 01-043, and R4-2002-01773], a public hearing before the LARWQCB will not be necessary. Further no new report is required to be provided to the LARWQCB unless requested in writing by the LARWQCB (Water Code section 13522.5(e).). To date, no such written request has been made to ESPR.

Data Request 8: Please provide the names and telephone numbers of the LARWQCB and DHS personnel who are responsible for recycled water permitting and use.

Response 8:

LARWQCB, Permitting-Municipal:
Jau Ren Chen
Phone Number: (213) 576-6656
Email: jrchen@waterboards.ca.gov

DHS, Recycled Water Unit
Jeff Stone
Phone Number: (805) 566-9767
Email: jstone1@dhs.ca.gov

Data Request 9: Please provide a "Will Serve" letter from West Basin Water District, which commits the District to the long-term (30 – 35 years) delivery of recycled water, by type if more than one disinfection type will be delivered, to the ESPR and the potential impacts of ESPR recycled water use on future customers over the 30 – 35 year delivery period.

Response 9: ESP II received the requisite "Will Serve" letter during the original AFC proceedings. However, due to the proposed modification, ESP II has submitted a request to West Basin for a revised "Will Serve" letter. West Basin has provided a letter stating its intent to provide a new "Will Serve" letter to accommodate the demand and water quality for the plant modifications documented in the PTA (see Appendix K).

ESPR's estimated demand will be 34,560 gallons per day (average daily use) and up to 577,920 gallons per day (peak operational use) of Title 22 recycled water (tertiary disinfected). West Basin is a public water agency that has the ability to serve recycled water for a long-term period

(30+ years) and has adequate capacity to serve ESPR. Below is a detailed discussion of the potential impacts of ESPR recycled water use on future customers

Potential Impacts of ESPR Recycled Water Use on Future Customers Over The 30-35 year Delivery Period

The ESPR R2C2 design will rely solely on recycled water supplied by West Basin for plant process waters during operations. West Basin receives a portion of the secondary treated wastewater from the City of Los Angeles' Hyperion Treatment Plant and has a capacity of producing up to up to 30 million gallons per day of disinfected tertiary treated recycled water for irrigation and industrial uses. During 2004-2005, West Basin provided more than 24,000 acre-feet of recycled water and 129,300 acre-feet of non-interruptible water supplies to over 200 customers. West Basin is a public water agency that has the ability to serve recycled water for a long-term period (30+ years. Due to the continuous source of the tertiary recycled from the Hyperion Treatment Plant the reliability of West Basin's recycled water supply relies mostly on the equipment and distribution system employed and less on the natural resources of the State. As a recycling facility, West Basin must comply with the minimum standards for reliability established by Title 22 California Code of Regulations, Division 4, Environmental Health, Chapter 3: Water Recycling Criteria, Article 10, which governs emergency storage and disposal, and other alternatives for reliability. Due to the aggressive policies of the State and expansion programs within West Basin, recycled water supply should be available to the ESPR over the 30 to 35 years with little potential interruption.

West Basin's capacity is directly tied to its contractual obligations to sell recycled water. The use of West Basin recycled water enhances reliability for potable water users by decreasing demand on natural resources. In addition, recycled water is independent of short and long-term climate change and water rights litigation, making it more reliable than imported water.

BACKGROUND

The project owner proposes to discharge ESPR sanitary wastewater to the City of Manhattan Beach Municipal Sanitary Sewer in accordance with the City Public Works Department discharge requirements.

Data Request 10: Please provide the quantity and quality standards for sanitary wastewater discharge to the Manhattan Beach Municipal Sanitary Sewer system. Please provide a discussion of the City's Municipal Codes for hookup and discharge to its sanitary sewer system.

Response 10:

Treated sanitary wastes from Units 1 and 2 are currently discharged to Santa Monica Bay through Outfall 001. Similarly, treated sanitary wastes from Units 3 and 4 are currently discharged to Santa Monica Bay through Outfall 002. El Segundo Power II LLC (ESP II) has been licensed (Commission's Final Decision, February 2005) to install a sanitary sewer connection under 45th Street in the City of Manhattan Beach into which sanitary wastes from El Segundo Generating Station (inclusive of sanitary wastes that would be discharged from the existing sanitary system and the new plant described in the Petition to Amend) would be

discharged. The sanitary wastes would be conveyed by pipeline from the planned 45th Street connection to the Los Angeles County Sanitation District via the City of Manhattan Beach sewer system.

LAND-4 of the Commission's Final Decision includes permitting and construction conditions associated with the installation of this sewer connection. The quantity and quality of the sanitary discharge for the new plant design would be unchanged as compared to the licensed plant configuration, since similar plant staffing for the new plant and the existing Units 3 & 4 are planned.

TABLE SOIL & WATER-3
Estimated Liquid Process Wastewater Volumes to Discharge (1)

Waste Stream	Source	Quantity/Day(1)
Total Waste to City Sewer	Sanitary drains system	750 gal

Notes:
(1) Estimated on 50 gallons per person, 15 staff.

TABLE SOIL & WATER-3
Expected Process Waste Characterization (1)

Constituent	Sanitary Waste to Sewer(2)
Calcium	50
Magnesium	20
Sodium	60
Potassium	3
M-Alkalinity, as CaCO3	100
Sulfate	130
Chloride	60
Nitrate	0
Fluoride	20
Aluminum	0.08
Silica	NR
Total Dissolved Solids	440
pH	8.2
Total Suspended Solids	500
Ammonia	5
BOD(3)	400
Chemical Oxygen Demand	100

Notes:
(1) All numbers are approximate.
(2) mg/L as ions, except as noted.
(3) Biological Oxygen Demand.

Permits

Sanitary waste water from the City of Manhattan Beach is pumped to the Los Angeles County Sanitation District for treatment. Since the issuance of the February 2005 Commission's Decision, ESP II has been coordinating with the City of Manhattan Beach to obtain a permit for connection with the sanitary sewer. The connection to the City of Manhattan Beach sanitary system will require an encroachment permit for work within the city right-of-way as previously permitted. ESP II will file a "Will Serve" request with Los Angeles County to determine trunk availability and treatment plant capacity. ESP II does not anticipate any significant impact from the conversion from ocean discharge to Publicly Owned Treatment Works (POTW), since the total anticipated flow from the system will be characterized as sanitary only; no industrial process waters will be diverted to the sewer system; and there will be no significant change in operating staffing levels. Los Angeles County Sanitation District determines on a case by case basis the final discharge applicability. Businesses that discharge only domestic wastewaters (wastewaters from restrooms, drinking fountains, showers, or air conditioners used for human comfort) or businesses that are determined to have an insignificant impact on the Los Angeles County Sanitation Districts' facilities may not be required to obtain an Industrial Wastewater Discharge Permit. ESP II will file an application with the District for a new Industrial Wastewater Discharge Permit so that the District may determine whether such permit is needed. The anticipated discharge from the operations of the ESPR Project will be characterized as a 3,000 square foot commercial "Professional Building" pursuant to the Los Angeles County Sanitation Districts' guidance (see Appendix L, *Loadings for Each Class of Land Use*).

The following table shows the limits that apply to all wastewater discharges within the service area of the Sanitation Districts of Los Angeles County.

TABLE SOIL & WATER-5
Sanitary Discharge Limits

Constituent	Units	Discharge Limit
Cyanide (Total)	mg/l	10
Arsenic	mg/l	3
Cadmium	mg/l	15
Chromium	mg/ l	10
Copper	mg/l	15
Lead	mg/l	40
Mercury	mg/l	2
Nickel	mg/l	12
Silver	mg/l	5
Zinc	mg/l	25
TICH (2)	Essentially none	
pH		> 6.0
Dissolved sulfide	mg/l	0.1
Temperature	F	< 140
Flash Point	F	> 140

Notes:
(1) Sanitation Districts of Los Angeles County Instantaneous Limits
(2) TICH (Total Identifiable Chlorinated Hydrocarbons) consists of aldrin, dieldrin, chlordane (cis & trans), trans-nonachlor, oxychlordane, heptachlor, heptachlor epoxide, hexachlorocyclohexane (alpha-, beta-, delta-, and gamma- isomers), toxaphene, PCBs, and pp' and op' isomers of DDT, DDD, and DDE.

ESPR anticipates being able to meet Los Angeles County Sanitation District discharge limits for the ESPR Project.

Los Angeles County Sanitation Districts Wastewater Ordinance

Section A-25 - Industrial Wastewater

"Industrial Wastewater" shall mean all liquid-carried wastes of the community, excluding domestic wastewater, rainwater, groundwater, stormwater and drainage of contaminated and uncontaminated water. Industrial wastewater may include all wastewater from any producing, manufacturing, processing, institutional, commercial, agricultural, or other operation where the wastewater discharged includes significant quantities of wastes of non-human origin. All liquid wastes hauled by truck, rail, or another means for disposal to the sewer shall be considered as industrial wastewater regardless of the original source of the wastes. Hauled domestic wastewater is included in the category of industrial wastewater.

Flow Measurement Guidelines Under Section 414 of The *Wastewater Ordinance*

Flow Criteria

An automatic full-time flow measurement system is required for any industrial wastewater discharge that exceeds 50,000 gallons per day average flow, or 100 gallons per minute peak flow for any five minute period. Systems must provide continuous flow indication, recording, totalizing, and a contact closure pulse signal generating device (i.e. sampler pacing socket) to activate automatic wastewater samplers. Digital totalizers must have emergency backup power and surge protection, and any totalizer "reset" buttons must be removed, deactivated, or covered.

Where the total of multiple discharge points from a single facility exceeds 50,000 gallons per day average flow, or 100 gallons per minute peak flow, continuous flow measurement will be required on any individual discharge point which exceeds 25,000 gallons per day average flow, or 50 gallons per minute peak flow.

Other Criteria

Companies under the above flow thresholds may still be required to provide a flow measurement system for any of the following reasons: effluent derived from an unmetered source (i.e. groundwater, oil wells), discharge subject to mass based limits, insufficient documentation of water loss calculations using the adjusted metered supply method, or any other reason deemed appropriate. Any company that utilizes "direct measurement" as the means of determining flow for their annual surcharge statement will be required to install and maintain an effluent flow measurement system as described herein.

BACKGROUND
To determine the additional impacts to water and soil resources from the construction of the ESPR project and the proposed beach delivery of oversized equipment, a Drainage Erosion and Sediment Control Plan (DESCP) will be required that includes all soil and sand disturbing activates of the ESPR. Although the project owner proposes to submit a Notice of Intent to comply with the terms of the General Permit to discharge stormwater associated with construction activities and is currently permitted, a draft DESCP needs to be submitted and is to be a separate document from the Construction Storm Water Pollution Prevention Plan (SWPPP).

Data Request 11 Please provide a draft DESCP containing elements A through I below outlining site management activities and erosion/sediment control best management practices (BMPs) to be implemented during site mobilization, excavation/demolition, construction, and post-construction activities. Within the draft DESCP, please provide a discussion of the requirements of any additional municipal permits issued by the LARWQCB for separate storm sewer systems. The level of detail in the draft DESCP shall be commensurate with the current level of planning for site demolition and corresponding site grading and drainage. Please provide all conceptual erosion control information for those phases of construction and post-construction that has been developed or provide a statement of when such information will be available. The DESCP is to be a separate document from the construction SWPPP and will be updated and revised as the project moves from the preliminary to final design phases.

A. **Vicinity Map** – A map(s) at a minimum scale 1"=100' will be provided indicating the location of all project elements with depictions of all significant geographic features including swales, storm drains, and sensitive areas.
B. **Site Delineation** – All areas subject to soil/sand disturbance for the ESPR (project site, lay down/demolition areas, beach delivery site, all linear facilities, landscaping areas, and any other project elements) shall be delineated showing boundary lines of all construction/demolition areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.
C. **Watercourses and Critical Areas** – The DESCP shall show the location of all nearby watercourses including swales, storm drains, and drainage ditches. Indicate the proximity of those features to the ESPR construction, lay down/demolition, beach delivery site, and landscape areas, and all transmission and pipeline construction corridors.
D. **Drainage Map** – The DESCP shall provide a topographic site map(s) at a minimum scale 1"=100' showing all existing, interim and proposed drainage systems and drainage area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet in flat terrain.
E. **Drainage of Project Site Narrative** – The DESCP shall include a narrative of the drainage measures to be taken to protect the site and downstream facilities. The narrative should include the summary pages from the hydraulic analysis prepared by a professional engineer/erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage measures. The hydraulic analysis should be used to support the selection of BMPs and structural controls to divert off-site and on-site drainage around or through the ESPR construction and laydown/demolition areas.

F. **Clearing and Grading Plans** – The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features will also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography.

G. **Clearing and Grading Narrative** – The DESCP shall include a table with the quantities of material excavated or filled for the site and all project elements of the ESPR (project site, lay down/demolition areas, beach delivery site, and pipeline corridors) to include those materials removed from the site due to demolition, whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported. The table shall distinguish whether such excavations or fill is temporary or permanent and the amount of material to be imported or exported.

H. **Best Management Practices Plan** – The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading/demolition, project element excavation and construction, beach delivery site, and final grading/stabilization). BMPs shall include measures designed to prevent wind and water erosion in areas with existing soil/sand contamination. Treatment control BMPs used during construction should enable testing of groundwater and/or stormwater runoff prior to discharge to Santa Monica Bay.

I. **Best Management Practices Narrative** – The DESCP shall show the location (as identified in H above), timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading/demolition, during project element excavation and construction, beach delivery site preparation and use, final grading/stabilization, and post-construction. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule should include post-construction maintenance of structural control BMPs, or a statement provided when such information will be available.

Response 11: The June 18, 2007 *Petition To Amend Final Commission Decision For The El Segundo Power Redevelopment Project* (PTA) proposed two additional construction-related activities:

1. Plant entrance modifications; and
2. Construction of the beach delivery corridor for the overland delivery of heavy equipment.

The preliminary draft plans for the Plant Entrance modifications discussed in the June 18, 2007 PTA are currently undergoing final engineering review. When the Plant Entrance modification plans are finalized, they will serve as the basis for a stand-alone Drainage Sediment and Erosion Control Plan (DSECP) for the roadway improvements. The currently approved Construction Stormwater Pollution Prevention Plan (SWPPP), which incorporates the approved project's DSECP, will be updated to incorporate the approved plant entrance improvements. The Plant Entrance Modification DSECP will be incorporated into the project's Construction SWPPP as an addendum to the SWPPP. A copy of the revised Construction SWPPP and the Plant Entrance Modification DSECP will be provided to the CPM 60 days prior to roadway construction for review and approval.

In addition to the existing beach monitoring Conditions of Certification (COCs) set forth in the Final Decision for the El Segundo Power Redevelopment project, the Applicant proposed the following COCs in its PTA related to Beach Delivery:

Section 401 Water Quality Certification

WQ-8: Prior to construction and/or use of the Beach Delivery Site, the applicant shall obtain from the State of California Regional Water Quality Control Board, Los Angeles Region, a Section 401 Water Quality Certification verifying that the Beach Delivery Project is incompliance with state water quality standards.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the Los Angeles Regional Board's Section 401 Water Quality Certification.

State Of California Notice Of Intent (NOI) Application For Coverage Under The NPDES General Permit For Stormwater Discharges Associated With Construction Activity

WQ-9: The applicant shall prepare and submit to the State Water Resources Control Board a Notice of Intent Application to comply with the State of California's General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit) prior to commencement of construction related to the Beach Delivery site.

Verification: At least 30 days prior to construction of the beach landing ramp, the applicant shall provide to the CPM for review and approval a copy of Beach Delivery NOI and confirmation by the State Water Resources Control Board that the construction is covered by the General Permit.

Beach Delivery Stormwater Pollution Prevention Plan (SWPPP) and Monitoring & Reporting Plan (M&RP)

WQ-10: The applicant shall develop an operation-specific Stormwater Pollution Prevention Plan in accordance with the Construction General Permit, including, but not limited to:

1. Pollutant and Pollutant Source Identification, including erosion and Sediment pollutants;
2. Evaluations of routes of Stormwater Exposure to identified pollutants and pollutant sources;
3. Pollutant Mode of Transportation identification;
4. Identification of Effective Best Management Practices (BMPs) designed to:
    a. Eliminate stormwater exposure to potential pollutants and/or pollutant sources; and/or,
    b. Remove the pollutant from the stormwater runoff prior to offsite discharge;
    c. BMPs shall be developed and implemented to ensure that the following mitigation measures are adhered to:
        i. An impervious fiber matting will be placed between the constructed ramp and beach surface;

ii. Fill sand shall be of beach nourishment quality with a medium, or larger, grain size;
iii. Fill sand shall be analyzed in accordance with the Inland Testing Manual (ITM);
iv. Only untreated, unused wood mats shall be used for the construction of the beach landing ramp; and,
v. All metal ramps, plates and/or any other metal material that may come in contract with the surf/tide shall be certified clean of all chemical residues, oils, greases and rust residues prior to use at the project site.
vi. Equipment shall not be stored or staged within the Beach Delivery Site, unless in use.
vii. Provide an Equipment Maintenance Plan detailing maintenance schedules, inspection protocols and maintenance and repair procedures for each piece of major equipment to be utilized during the Beach Delivery operation.
viii. Provide a Site Maintenance/Housekeeping Plan detailing housekeeping inspection schedules and cleanup procedures.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of Beach Delivery SWPPP, Beach Delivery Repair and Enhancement Mitigation Plan, and Monitoring and Reporting Plan.

Beach Delivery Erosion and Sediment Control Plan

WQ-11: To minimize the acceleration of sand erosion along the El Segundo beach as a consequence of the Beach Delivery operation, the following mitigation measures shall be employed:

1. Loose sand used to construct and stabilize the beach landing ramp will be contained, either by placing the sand within bags or by containing the sand fill within an impervious barricade or structure;
2. The construction barge will be pulled off shore during periods of non-delivery. The maximum length of time that the construction barge will be grounded will be no more than 32 hours;
3. The Beach Delivery Site will be located as near as possible to the groin to minimize longshore tide activity; and,
4. The applicant will develop an Erosion and Sediment Control Plan (ESCP) detailing practices to be implemented during the Beach Delivery operation to minimize sand erosion along the shoreline and near-shore areas.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the Beach Delivery ESCP.

Currently, the Beach Delivery Erosion and Sediment Control Plan (COC WQ-11) exists in a preliminary draft format (see Appendix M). In order to finalize the Beach Delivery ESCP, the 401/404 permitting process will need to be completed, and the Nationwide Permit 33 Restoration Plan will need to be developed and approved by the Army Corps of Engineers. Once the federal

permitting process is completed, the Beach Delivery ESCP will be finalized and submitted to the CPM in accordance with the proposed Beach Delivery COCs.

Beach Delivery Repair and Enhancement Mitigation Plan (Mitigation Plan)

WQ-12: A Beach Repair and Enhancement Mitigation Plan (Mitigation Plan) shall be prepared by either a registered geologist or coastal engineer. The Mitigation Plan will describe, at the minimum, the following:

1. Ramp Construction engineering and performance design criteria, materials (type and quantity) of construction and construction schedules;
2. Measures to be implemented to minimize impacts to the Beach Delivery Site during use of the Site, including stockpiling of excess or excavated fill or sand material;
3. Demobilization and ramp disassembly procedures;
4. Pre-construction and post-construction surveys:
    a. A survey of proposed Beach Delivery Site and adjacent beach areas, not affected by the Beach Delivery operation, will be conducted no more than 60 days prior to construction of the Site and ramp system;
    b. At the conclusion of the Beach Delivery operation the Site and adjacent beach area shall be resurveyed within 15 days
    c. The sand used for construction of the beach delivery ramp shall only be beach nourishment quality san of a grain size equal to, or larger, than the native sand;
    d. Within 30 days of conclusion of the Beach Delivery operation, the beach landing ramp shall be disassembled and the Beach Delivery Site area returned to preconstruction conditions using the beach nourishment ramp sand; and,
    e. Alternatively, if the pre-construction and post-construction surveys of the adjacent beach areas indicate a significant change in the adjacent beaches' topographic conditions, the Beach Delivery Site area will be repaired and enhanced to reflect the adjacent beaches' topographic conditions at the conclusion of the Beach Delivery operations.
    f. The final Mitigation Plan shall include the post-construction surveys and final engineer plans showing post-construction beach repair and enhancement element Beach repairs and enhancements will be in accordance with guidance provided by the NOAA Coastal Service Center guidelines available at the time at that time.

Verification: At least 30 days prior to construction of the beach landing ramp the applicant shall provide to the CPM for review and approval a copy of the initial Mitigation Plan. No more than 30 days after completion of the beach repair and enhancement activities the applicant shall provide a copy of the Final Mitigation Plan to the CPM for review and approval.

Ballast Management Plan

WQ-13: The applicant shall ensure that each barge operator develops a Ballast Water Management Plan in accordance with CCR Title 2, Division 3, Chapter 1, Article 4.6, (Ballast Water Regulations for Vessels Arriving at California Ports or Places after Departing from Ports

or Places within the Pacific Coast Region). The applicant will ensure that the ballast water holding tanks are certified clean and uncontaminated prior to taking on local ballast water.

Verification: At least 30 days prior to construction of the beach-landing ramp the applicant shall provide to the CPM for review and approval a copy of the Ballast Water Management Plan.

VISUAL RESOURCES

Technical Area: Visual Resources

BACKGROUND

The petition to amend discusses modifying VIS-1 and VIS-4 which addressed the facility visual enhancement plan. As discussed in the Commission Decision, the California Coastal Commission's responsibility is to insure that permitted developments are sited and designed to protect views to and along the ocean and scenic coastal areas. The Coastal Commission recommended that specific provisions be included in the conditions of certification to meet requirements of the California Coastal Act.

Data Request 1: Please provide a discussion of the Coastal Commission's response as well as the cities of El Segundo and Manhattan Beach to the proposed change to the project's design and conditions of certification VIS-1 and VIS-4.

Response 1: ESP II has met with City of El Segundo (COES) and City of Manhattan Beach (COMB) staff and officials to review the proposed changes to the ESPR project presented in the Petition to Amend. Issues of particular interest and potential impact to COES and COMB residents were discussed, including changes affecting visual resources. In particular, ESP II discussed the proposed removal of architectural screening of the units that was previously provided for in VIS-1 and VIS-4, because of the differing exterior plant design and appearance. Overall, the cities had positive comments on the new plant design, from the benefits of the new technology to the reduced impact on viewsheds resulting from the more streamlined units, with less exterior piping. COMB and CCOES each requested that ESPR use non-reflective materials and/or paint where possible. ESP II has indicated in the PTA (3-114) that neutral, non-reflective materials would be used for new plant. ESP II will continue to comply with VIS-5, which addresses the use of reflective materials and the treatment of them to reduce reflectivity. Both COMB and COES informed ESP II that a letter providing each city's comments is forthcoming and will be submitted to the CEC and Applicant. Applicant, however, received COES' comments on September 27, 2007 and has included a copy herein as Appendix P.

In addition, ESP II discussed the proposed project modifications with Tom Luster of the California Coastal Commission on several occasions while developing the PTA. No objections or opinions were provided in response to these discussions.

VISUAL RESOURCES
PLUME

Technical Area: Visual Resources - Plume

Gas Turbine/HRSG Operating Data

BACKGROUND

Due to the significant changes in the gas turbine/HRSG design, staff needs to assess the amended design's plume potential. While the project owner has stated that they believe that the plume formation should be no worse than that found for the original design due to the higher exhaust temperatures, the owner has not provided all of the exhaust condition data for staff review. Staff requires additional gas turbine/HRSG exhaust data for the revised design to complete this analysis.

Data Request 1: Please summarize for the gas turbine/HRSG the full operating load conditions that affect vapor plume formation including the exhaust temperature, exhaust mass flow rate, and exhaust water content. Please provide values to complete and correct the table. Additional combinations of temperature and relative humidity, if provided by the project owner, will be used to more accurately represent the gas turbine/HRSG exhaust conditions.

Response 1: The following table summarizes the extreme hot, extreme cold, and annual average ambient operating conditions.

TABLE VISUAL-1

Parameter	Gas Turbine/HRSG Tower Exhausts					
Stack Height	210 ft					
Stack Diameter	20 ft					
Ambient Temperature*	40°F		62°F		83°F	
Ambient Relative Humidity*	90%		70%		47%	
Steam Injection (Yes/No)	Yes	No	Yes	No	Yes	No
Exhaust Temperature (°F)	N/A**	369	N/A**	363	360	356
Exhaust Flow Rate (1,000 lb/hr)	N/A**	4148	N/A**	4011	4009	3869
aust Water Vapor Flow Rate (1,000 lb/hr)	N/A**	329	N/A**	349	583	363

*The 62°F and 83°F Ambient conditions based on ambient conditions provided in the footnotes of Table 3.15-2 of the Petition to Amend. These ambient conditions can be changed if necessary; however, at least one ambient condition should be provided at or below 50°F.

** Steam injection does not occur at these ambient temperatures.

Data Request 2: The gas turbine/HRSG stack height and diameter used in the air dispersion modeling analysis are 210 feet and 20 feet, respectively. The gas turbine/HRSG stack height and diameter provided in Table 3.12-1 (p. 3-97) of the Petition to Amend and discussed elsewhere in Section 3.12 are noted as 140 feet and 13 feet, respectively. Please clarify the correct gas turbine/HRSG stack dimensions for the new facility design.

Response 2: On June 18, 2007, ESP II submitted its Petition to Amend. Shortly thereafter, the corresponding air modeling and *Application for a Determination of Compliance and Permit to Construct* was completed and submitted to the South Coast Air Quality Management District

(Appendix G). At that time, ESP II determined that modifications to the PTA were necessary to reflect the change of the proposed stack height and diameter from the previously analyzed dimensions of 140 feet and 13 feet, respectively, to 210 feet and 20 feet, respectively. The initial dimensions and configurations were provided by Siemens during the initial drafting phases of the PTA. To that end, a new Visual Resource section (Section 3.12) was docketed with the CEC on July 12, 2007 (see Appendix N); additional copies were provided to the Mr. Steve Munro on September 17, 2007.

Data Request 3: Please describe at what ambient conditions steam injection power augmentation would not be used in the gas turbine/HRSG.

Response 3: Steam injection power augmentation would not be used below 40° F.

TRAFFIC & TRANSPORTATION

Technical Area: Traffic and Transportation

BACKGROUND

The El Segundo project site is located at 301 Vista Del Mar in the City of El Segundo, just north of the City of Manhattan Beach. The traffic and transportation section of the amendment notes that a new laydown and parking area would be located at 777 W. 190th Street, adjacent to the I-110/405 interchange and about ten miles from the project site. Though not stated explicitly, staff assumes that construction workers would be bussed from the parking area to the project site. Access to the project site would be via W. 190th Street, Hawthorne Boulevard, Imperial Highway, and Vista Del Mar. Peak hour levels of service (LOS) are provided for some of the applicable road intersections, but staff needs additional road segment information to determine the construction traffic impact on the local roads.

Data Request 1: Please provide a table that displays the following information for road segments on the W. 190th Street, Hawthorne Boulevard, Imperial Highway and Vista del Mar construction traffic route: existing daily average and peak traffic counts and LOS, estimated changes to daily average and peak traffic counts, and changes in LOS due to project related construction traffic.

Response 1: As Staff has assumed workers would be bused from the new laydown and parking area at 777 W. 190th Street to the project site. However, access to the project for worker buses would not be via W. 190th Street, Hawthorne Boulevard, Imperial Highway, and Vista Del Mar. Instead, the buses would travel via Interstate 405, which is located immediately adjacent to the W. 190th Street site, and Interstate 105. Access to the project site from I-105 would be via local roads through the City of El Segundo—Imperial Highway and Vista Del Mar.

This traffic analysis is based upon the following parameters.

The W. 190th Street site will provide parking for approximately 200 construction workers during peak ESPR construction. Workers would not carpool to the site, and would arrive at the site by 6:00 a.m., outside the peak period of 7:00 a.m. to 9:00 a.m. Workers would be shuttled to the project site from the W. 190th Street site in the morning and evening in four shuttles that could accommodate up to 50 workers. Workers would arrive back at the W. 190th Street site by 6:00 p.m., and would leave in their vehicles after 6:00 p.m., outside of the p.m. peak period of 4:00 p.m. to 6:00 p.m. Based on these assumptions, trip generation would be 400 construction worker vehicle trips outside of peak hours, and 16 peak hour trips to transport construction workers to the site via shuttle, 8 trips in the morning and 8 trips in the evening.

Construction trucks carrying equipment from the W. 190th Street site to the project site would utilize the following route: W 190th Street, Hawthorne Boulevard, Imperial Highway, and Vista Del Mar. As explained in the PTA, use of the R2C2 technology would result in approximately 32 construction truck trips per day. These trucks, however, would avoid peak traffic hours, and therefore would have no effect on peak traffic counts or peak hour LOS, even assuming that all construction truck trips originated at the W. 190th Street site.

For the PTA, road segments along Imperial Highway and Vista Del Mar were analyzed. In connection with this data request, additional road segments along W 190th Street and Hawthorne Boulevard were analyzed to determine potential effects of construction truck trips along those road segments.

DAILY AVERAGE AND PEAK TRAFFIC COUNTS

Table Traffic-1 shows existing average daily traffic volume and peak hour traffic volume for Imperial Highway and Vista Del Mar, taken from data collected in connection with the PTA, and existing average daily traffic volume and peak hour traffic volume for road segments on W. 190th Street and Hawthorne Boulevard, collected in response to this data request. To determine existing operation of the study intersections, a.m. peak hour intersection movement counts were taken from 7:00 a.m. to 9:00 a.m., and p.m. peak intersection counts were taken from 4:00 p.m. to 6:00 p.m. The counts used in this analysis were taken from the highest hour within the peak period counted.

Road segments are listed in route order from the W. 190th Street site to the ESPR Project.

TABLE TRAFFIC-1
Existing Roadway Segment Traffic Volumes

Roadway Segment	Existing Daily Traffic Volume	Existing AM Peak Hour Traffic Volume	Existing PM Peak Hour Traffic Volume
West 190th St: I-405 to I-110	33,370	2,704	2,890
West 190th St: West of Vermont Ave	31,634	2,826	2,814
West 190th St: Western Ave to Van Ness Ave.	38,899	3,010	3,168
West 190th St: Van Ness Ave to Crenshaw Blvd.	35,737	3,038	3,042
West 190th St: West of Crenshaw Blvd	50.466	3,752	4,066
West 190th St: East of Prairie Ave	42,680	3,561	3,399
West 190th St: Prairie Ave to Hawthorne Blvd.	31,271	2,388	2,503
Hawthorne Blvd b/t 186th & 190th St	64,415	4,812	4,956
Hawthorne Blvd just south of 177th St	64,510	4,752	4,870
Imperial Highway west of Sepulveda Blvd.*	13,730	1,185	1,561
Imperial Highway east of Pershing Dr.*	23,555	2,600	2,111
Imperial Highway west of Pershing Dr.*	9,905	982	999
Imperial Highway east of Vista Del Mar*	10,065	960	1,053
Vista Del Mar south of Imperial Highway*	21,420	2,098	2,186
Vista Del Mar north of Grande Avenue*	21,655	2,218	2,113
Vista Del Mar south of Grande Avenue*	22,390	2,254	2,224

*Existing roadway segment volume is derived from intersection peak hour data.

Projected average daily and peak hour traffic volumes as a result of the proposed project are shown on Table Traffic-2. As explained above, with the exception of the short section of W. 190th needed to access I-405 from the W. 190th site (I-405 to I-110 and west of Vermont Avenue), peak hour traffic will be unaffected on W. 190th Street and Hawthorne, as construction worker shuttles will not use these roads, and construction trucks will use these roads only during non-peak hours. The short section of W. 190th needed to access I-405 from the W. 190th site would also experience 400 construction worker vehicle trips as workers arrived and departed the site, but outside of peak hours.

Road segments are listed in route order from the W. 190th Street site to the ESPR Project..

TABLE TRAFFIC-2
Projected Roadway Segment Traffic Volumes

Roadway Segment	Projected Daily Traffic Volume	Projected AM Peak Hour Traffic Volume	Projected PM Peak Hour Traffic Volume
West 190th St: I-405 to I-110	33,786*	2,712	2,898
West 190th St: West of Vermont Ave	32,050*	2,834	2,822
West 190th St: Western Ave to Van Ness Ave.	38,931	n/c	n/c
West 190th St: Van Ness Ave to Crenshaw Blvd.	35,769	n/c	n/c
West 190th St: West of Crenshaw Blvd	50,498	n/c	n/c
West 190th St: East of Prairie Ave	42,712	n/c	n/c
West 190th St: Prairie Ave to Hawthorne Blvd.	31,303	n/c	n/c
Hawthorne Blvd b/t 186th & 190th St	64,447	n/c	n/c
Hawthorne Blvd just south of 177th St	64,542	n/c	n/c
Imperial Highway west of Sepulveda Blvd.	13,776	1,193	1,569
Imperial Highway east of Pershing Dr.	23,603	2,608	2,119
Imperial Highway west of Pershing Dr.	9,953	990	1,007
Imperial Highway east of Vista Del Mar	10,113	968	1,061
Vista Del Mar south of Imperial Highway	21,468	2,106	2,194
Vista Del Mar north of Grande Avenue	21,703	2,226	2,121
Vista Del Mar south of Grande Avenue	22,438	2,262	2,232

n/c means the project will not change existing traffic count. * includes 400 construction worker vehicle trips arriving and departing from W. 190th Street site.

With the addition of construction trips for the proposed project, a.m. peak hour and p.m. peak hour traffic volume on the first two W. 190th Street segments is forecast to increase by approximately 0.28 percent to 0.30 percent. The peak hour traffic volume for the remainder of Hawthorne Blvd. and W. 190th Street would remain unaffected. Peak hour traffic volume on Imperial Highway and Vista Del Mar is forecast to increase approximately 0.4 percent to 0.8 percent with the addition of construction trips for the proposed project.

PEAK HOUR LEVELS OF SERVICE

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the type of traffic control and delay experienced at the intersection. The *2000 Highway Capacity Manual (HCM)* analysis methodology for *Signalized Intersections* is utilized to determine the operating LOS of the study intersection.

The *2000 HCM* analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding ranges of stopped delay experienced per vehicle for signalized intersections shown in Table Traffic-3.

TABLE TRAFFIC-3
LOS & Delay Ranges for Signalized Intersections

LOS	Delay (seconds)
A	≤ 10.0
B	10.1 to ≤ 20.0
C	20.1 to ≤ 35.0
D	35.1 to ≤ 55.0
E	55.1 to ≤ 80.0
F	> 80.0

Source: Transportation Research Board, *Highway Capacity Manual, HCM 2000 Edition* (Washington D.C., 2000).

Level of service is based on the average stopped delay per vehicle for all movements of signalized intersections.

Existing peak hour LOS and projected LOS due to the busing of construction workers from the W. 190th Street site are set forth in Table Traffic-4 for the following intersections: Imperial Highway/Sepulveda Boulevard, Imperial Highway/Pershing Boulevard, Imperial Highway/Vista Del Mar, Vista Del Mar/Grand Avenue, and Vista Del Mar/ESGS Driveway. As explained above, construction workers will not utilize W. 190th Street or Hawthorne Boulevard to access the project site, and construction trucks will not use this route during peak hours. Therefore, LOS for W. 190th Street and Hawthorne Boulevard will be unaffected by the proposed project, and are not included in Table 3.

Table Traffic-4
Forecast Existing With Project Construction Conditions
AM & PM Peak Hour LOS of Study Intersections

Study Intersection	Existing Conditions		Forecast Existing With Project Construction Conditions	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS
Imperial Highway/Sepulveda Blvd.	25.6 – C	28.1 – C	25.7 – C	28.2 – C
Imperial Highway/Pershing Drive	22.3 – C	15.7 – B	22.3 – C	15.7 – B
Imperial Highway/Vista Del Mar	19.1 – B	20.5 – C	19.1 – B	20.5 – C
Vista Del Mar/Grand Avenue	9.7 – A	7.6 – A	9.7 – A	7.6 – A
Vista Del Mar/ESGS entrance	9.9 – A	58.0 – F	32.4 – D	79.1 – F

Note: Delay is shown in seconds per vehicle.

As shown in Table Traffic-4, the addition of construction-related trips associated with W. 190th Street, will not change the LOS of any of the studied intersections, with the exception of the Vista Del Mar/ESGS entrance intersection during the a.m. peak hour. However, implementation of the existing Condition of Certification TRANS-4 (Traffic Control Plan) would incorporate measures to eliminate or reduce these impacts.

Alternatively, if LOS is calculated based upon the capacity of the intersection and the volume of traffic using that intersection, there will be no change in LOS. A sensitivity analysis showed that the addition of up to 35 two-way (35 inbound and 35 outbound) shuttle trips during the a.m. peak hour and p.m. peak hour would not result in a significant traffic impact. The sensitivity analysis is attached as Appendix O.

APPENDICES

APPENDIX G
PUBLIC HEALTH RESPONSE # 1

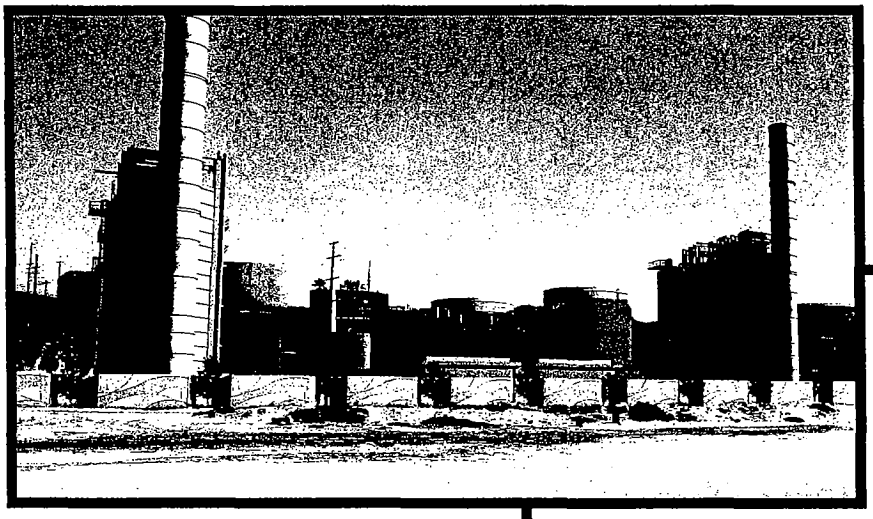
EXCERPTS FROM EL SEGUNDO'S
APPLICATION FOR DETERMINATION OF
COMPLIANCE AND PERMIT TO CONSTRUCT
SUBMITTED TO THE SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

Application for a Determination of Compliance and Permit to Construct for the El Segundo Power Redevelopment Project (Facility ID No. 115663)

June 21, 2007



Submitted to:
South Coast Air Quality
Management District

NRG

Offset Summary

The applicant has indicated that the required amounts of offsets will be provided for each CTG prior to issuance of the revised Facility Permit for the El Segundo Generating Station. Therefore, compliance with offset requirements of Rules 1303(b)(2) is expected.

RULES 1303(b)(3)-Sensitive Zone Requirements and 2005(e)-Trading Zone Restrictions

Both rules state that credits must be obtained from the appropriate trading zone. In the case of Rule 1303(b)(3), facilities located in the South Coast Air Basin are subject to the Sensitive Zone requirements specified in Health & Safety Code Section 40410.5. The El Segundo Generating Station is located in Zone 1a and is therefore eligible to obtain its ERCs from Zone 1 only. Similarly in the case of Rule 2005(e), the facility, because of its location may obtain RTCs from Zone 1 only. Compliance is expected because the ERCs and RTCs obtained for the EPSR project were from Zone 1 sources.

RULE 1303(b)(4)-Facility Compliance

The new facility will comply with all applicable Rules and Regulations of the AQMD.

RULE 1303(b)(5)-Major Polluting Facility

Compliance with these requirements is discussed below under Rule 2005.g.

Rule 1401 – New Source Review of Toxic Air Contaminants

This rule specifies limits for maximum individual cancer risk (MICR), acute hazard index (HIA), chronic hazard index (HIC) and cancer burden (CB) from new permit units, relocations, or modifications to existing permits which emit toxic air contaminants. Rule 1401 requirements are summarized as follows:

Table 25 – Rule 1401 Requirements

Parameters and Specifications	Rule 1401 Requirements
MICR, without T-BACT	$\leq 1x10^{-6}$
MICR, with T-BACT	$\leq 1x10^{-5}$
Acute Hazard Index	≤ 1.0
Chronic Hazard Index	≤ 1.0
Cancer Burden	≤ 0.5

Enclosed as Appendix M are the detailed non-criteria pollutant emission calculations for the new CTGs. Based on these emission rates, the applicant performed a Tier 4 health risk assessment using the Hot Spots Analysis and Reporting Program (HARP). The analysis included an estimate of the MICR for the nearest residential and commercial receptors, and the acute and chronic hazard indices on a per unit basis. Table 26 below is a summary of

the cancer and non-cancer risk assessment results on a per CTG basis. The cancer burden is not calculated for the individual unit impacts because the MICR is less than 1×10^{-6} for both residential and commercial receptors.

Table 26 – Rule 1401 Modeled Results

Risk Parameter	Residential	Commercial	Rule 1401 Requirements	Compliance (Yes/No)
CTG 1 (Unit 5)				
MICR	4.00×10^{-8}	1.28×10^{-8}	$\leq 1 \times 10^{-6}$	Yes
HIA	1.53×10^{-2}	1.53×10^{-2}	≤ 1.0	Yes
HIC	2.42×10^{-3}	4.02×10^{-3}	≤ 1.0	Yes
CTG 2 (Unit 7)				
MICR	4.05×10^{-8}	1.31×10^{-8}	$\leq 1 \times 10^{-6}$	Yes
HIA	1.54×10^{-2}	1.54×10^{-2}	≤ 1.0	Yes
HIC	2.45×10^{-3}	4.13×10^{-3}	≤ 1.0	Yes

Table 26 shows that ESPR project will comply with the applicable requirements of Rule 1401. Enclosed as Appendix Q, are the complete results of the HARP modeling along with figures showing the locations of the HARP impacts.

Rule 2005(g) – Additional Requirements

As with Rule 1303(b)(5) for the Non-RECLAIM pollutants, the applicant has addressed the alternative analysis, statewide compliance, protection of visibility, and CEQA compliance requirements of this rule for NOx. These requirements are summarized below.

Rule 2005(g)(1) – Statewide Compliance
The applicant submitted a letter to the AQMD on June 13, 2007 stating that any and all facilities that El Segundo Power, LLC owns or operates in the State of California (including the proposed ESPR project) are in compliance or are on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act. Therefore, compliance is expected. This letter is attached as Appendix R.

Rule 2005(g)(2) – Alternative Analysis
Requires the applicant to conduct an analysis of alternative sites, sizes, production processes, environmental control techniques for the ESPR project and to demonstrate that the benefits of the proposed project outweigh the environmental and social costs associated with this project. The ESPR project is exempt from this requirement per Rule 2005(g)(3)(C).

Rule 2005(g)(3) – Compliance through CEQA
The California Energy Commission (CEC) is the lead agency for this project and will be conducting their CEQA analysis with input from interested parties/agencies. As part of this CEQA analysis, they will be issuing an amendment to the CEC Decision for the ESPR project. Compliance is expected.

APPENDIX M

NON-CRITERIA POLLUTANT EMISSION CALCULATIONS

Appendix M - ESPR
Non-Criteria Pollutant Emission Calculations

PAGES	PAGE	A/N
BY	DATE	

Annual and Maximum Hourly Non-Criteria Pollutant Emissions For CTGs

Pollutant	Emission Factor(1) lb/MMscf	1 Turbine Max Firing Rate MMBtu/hr	Natural Gas HHV Btu/scf	Turbine Operating Hours hrs/yr	1 Turbine Max Hourly Firing Rate MMscf/hr	1 Turbine Annual Avg Firing Rate MMscf/yr	1 Turbine Max. Hourly Emissions lbs/hr (each)	2 Turbines Max. Hourly Emissions lbs/hr	1 Turbine Annual Emissions tons/yr (each)	2 Turbines Annual Emissions tons/yr	Hourly Emission Rate Per Turbine g/sec (each)	Annual Emission Rate Per Turbine g/sec (each)
Ammonia	(2)	2,096.0	1,027.7	5,456	2.04	11,127	1.43E+01	2.85E+01	36.42	72.85	1.80E+00	1.05E+00
Propylene	7.71E-01	2,096.0	1,027.7	5,456	2.04	11,127	1.57E+00	3.14E+00	4.29	8.58	1.98E-01	1.23E-01
Hazardous Air Pollutants												
Acetaldehyde	4.08E-02	2,096.0	1,027.7	5,456	2.04	11,127	8.32E-02	1.66E-01	0.23	0.45	1.05E-02	6.53E-03
Acrolein	3.69E-03	2,096.0	1,027.7	5,456	2.04	11,127	7.53E-03	1.51E-02	0.02	0.04	9.48E-04	5.91E-04
Benzene	3.33E-03	2,096.0	1,027.7	5,456	2.04	11,127	6.79E-03	1.36E-02	0.02	0.04	8.56E-04	5.33E-04
1,3-Butadiene	4.39E-04	2,096.0	1,027.7	5,456	2.04	11,127	8.95E-04	1.79E-03	0.00	0.00	1.13E-04	7.03E-05
Ethylbenzene	3.26E-02	2,096.0	1,027.7	5,456	2.04	11,127	6.65E-02	1.33E-01	0.18	0.36	8.38E-03	5.22E-03
Formaldehyde	3.67E-01	2,096.0	1,027.7	5,456	2.04	11,127	7.48E-01	1.50E+00	2.04	4.08	9.43E-02	5.87E-02
Hexane	2.59E-01	2,096.0	1,027.7	5,456	2.04	11,127	5.28E-01	1.06E+00	1.44	2.88	6.66E-02	4.15E-02
Naphthalene	1.66E-03	2,096.0	1,027.7	5,456	2.04	11,127	3.39E-03	6.77E-03	0.01	0.02	4.27E-04	2.66E-04
Anthracene	3.38E-05	2,096.0	1,027.7	5,456	2.04	11,127	6.89E-05	1.38E-04	0.00	0.00	8.69E-06	5.41E-06
Benzo(a)anthracene	2.26E-05	2,096.0	1,027.7	5,456	2.04	11,127	4.61E-05	9.22E-05	0.00	0.00	5.81E-06	3.62E-06
Benzo(a)pyrene	1.39E-05	2,096.0	1,027.7	5,456	2.04	11,127	2.83E-05	5.67E-05	0.00	0.00	3.57E-06	2.22E-06
Benzo(b)fluoranthrene	1.13E-05	2,096.0	1,027.7	5,456	2.04	11,127	2.30E-05	4.61E-05	0.00	0.00	2.90E-06	1.81E-06
Benzo(k)fluoranthrene	1.10E-05	2,096.0	1,027.7	5,456	2.04	11,127	2.24E-05	4.49E-05	0.00	0.00	2.83E-06	1.76E-06
Chrysene	2.52E-05	2,096.0	1,027.7	5,456	2.04	11,127	5.14E-05	1.03E-04	0.00	0.00	6.48E-06	4.03E-06
Dibenz(a,h)anthracene	2.35E-05	2,096.0	1,027.7	5,456	2.04	11,127	4.79E-05	9.59E-05	0.00	0.00	6.04E-06	3.76E-06
Indeno(1,2,3-cd)pyrene	2.35E-05	2,096.0	1,027.7	5,456	2.04	11,127	4.79E-05	9.59E-05	0.00	0.00	6.04E-06	3.76E-06
Propylene oxide	2.98E-02	2,096.0	1,027.7	5,456	2.04	11,127	6.08E-02	1.22E-01	0.17	0.33	7.66E-03	4.77E-03
Toluene	1.33E-01	2,096.0	1,027.7	5,456	2.04	11,127	2.71E-01	5.42E-01	0.74	1.48	3.42E-02	2.13E-02
Xylene	6.53E-02	2,096.0	1,027.7	5,456	2.04	11,127	1.33E-01	2.66E-01	0.36	0.73	1.68E-02	1.05E-02
Total HAPs =										10.42		

Notes:

(1) All factors except PAHs, hexane, and propylene from AP-42, Table 3.1-3, 4/00.
Individual PAHs, hexane and proplyene are CATEF mean results as AP-42 does not include factors for these compounds.

(2) Based on 5 ppm ammonia slip from SCR system.

PAGES	PAGE	A/N
BY	DATE	

Appendix M - ESPR
Non-Criteria Pollutant Emission Calculations

Annual and Maximum Hourly Non-Criteria Pollutant Emissions From Boiler Units 3 and 4

Pollutant	Emission Factor lbs/mmscf)(1	1 Boiler Max Firing Rate MMBtu/hr	Natural Gas HHV Btu/scf	Boiler Operating Hours hrs/yr	1 Boiler Max Hourly Firing Rate MMscf/hr	1 Boiler Annual Avg Firing Rate MMscf/yr	1 Boiler Max. Hourly Emissions lbs/hr (each)	2 Boilers Max. Hourly Emissions lbs/hr	1 Boiler Annual Emissions tons/yr (each)	2 Boilers Annual Emissions tons/yr	Hourly Emission Rate Per Boiler g/sec (each)	Annual Emission Rate Per Boiler g/sec (each)
Ammonia	(2)	3417	1,027.7	8,760	3.32	29,126	1.74E+01	3.48E+01	76.21	152.42	2.19E+00	2.19E+00
Propylene	1.55E-02	3417	1,027.7	8,760	3.32	29,126	5.16E-02	1.03E-01	0.23	0.45	6.51E-03	6.51E-03
Hazardous Air Pollutants												
Acetaldehyde	9.00E-04	3417	1,027.7	8,760	3.32	29,126	2.99E-03	5.98E-03	0.01	0.03	3.77E-04	3.77E-04
Acrolein	8.00E-04	3417	1,027.7	8,760	3.32	29,126	2.66E-03	5.32E-03	0.01	0.02	3.35E-04	3.35E-04
Benzene	1.70E-03	3417	1,027.7	8,760	3.32	29,126	5.65E-03	1.13E-02	0.02	0.05	7.12E-04	7.12E-04
Ethylbenzene	2.00E-03	3417	1,027.7	8,760	3.32	29,126	6.65E-03	1.33E-02	0.03	0.06	8.38E-04	8.38E-04
Formaldehyde	3.60E-03	3417	1,027.7	8,760	3.32	29,126	1.20E-02	2.39E-02	0.05	0.10	1.51E-03	1.51E-03
Hexane	1.30E-03	3417	1,027.7	8,760	3.32	29,126	4.32E-03	8.64E-03	0.02	0.04	5.45E-04	5.45E-04
Naphthalene	3.00E-04	3417	1,027.7	8,760	3.32	29,126	9.97E-04	1.99E-03	0.00	0.01	1.26E-04	1.26E-04
PAHs (excluding Naphtha	4.00E-04	3417	1,027.7	8,760	3.32	29,126	1.33E-03	2.66E-03	0.01	0.01	1.68E-04	1.68E-04
Toluene	7.80E-03	3417	1,027.7	8,760	3.32	29,126	2.59E-02	5.19E-02	0.11	0.23	3.27E-03	3.27E-03
Xylene	5.80E-03	3417	1,027.7	8,760	3.32	29,126	1.93E-02	3.86E-02	0.08	0.17	2.43E-03	2.43E-03
Total HAPs =										0.72		

Notes:
(1) From Ventura County APCD AB2588 Combustion Emission Factors (May 17, 2001) natural gas fired external combustion equipment greater than 100 MMBtu/hr.
(2) Based on ammonia slip.

APPENDIX Q

HARP MODELING RESULTS

Table Q.1
HARP Modeling Results – Maximum Impacts

Risk Parameter	Residential	Commercial	Rule 1401 Requirements	Compliance (Yes/No)
CTG 1 (Unit 5)				
MICR	4.00×10^{-8}	1.28×10^{-8}	$\leq 1 \times 10^{-6}$	Yes
HIA	1.53×10^{-2}	1.53×10^{-2}	≤ 1.0	Yes
HIC	2.42×10^{-3}	4.02×10^{-3}	≤ 1.0	Yes
CTG 2 (Unit 7)				
MICR	4.05×10^{-8}	1.31×10^{-8}	$\leq 1 \times 10^{-6}$	Yes
HIA	1.54×10^{-2}	1.54×10^{-2}	≤ 1.0	Yes
HIC	2.45×10^{-3}	4.13×10^{-3}	≤ 1.0	Yes
Combined Impacts CTGs 1 and 2 (Units 5 and 7)				
MICR	8.06×10^{-8}	2.59×10^{-8}	N/A	N/A
HIA	3.07×10^{-2}	3.07×10^{-2}	N/A	N/A
HIC	4.88×10^{-3}	8.15×10^{-3}	N/A	N/A
Combined Impacts Boiler Units 3 and 4				
MICR	8.50×10^{-7}	2.68×10^{-7}	N/A	N/A
HIA	2.17×10^{-2}	2.17×10^{-2}	N/A	N/A
HIC	2.57×10^{-3}	4.53×10^{-3}	N/A	N/A
Facility-Wide Impact (Units 3, 4, 5, and 7)				
MICR	9.30×10^{-7}	2.94×10^{-7}	N/A	N/A
HIA	4.33×10^{-2}	4.33×10^{-2}	N/A	N/A
HIC	7.44×10^{-3}	1.26×10^{-2}	N/A	N/A

Figure Q.1
HARP Modeling Results
Maximum Impacts – Unit 5

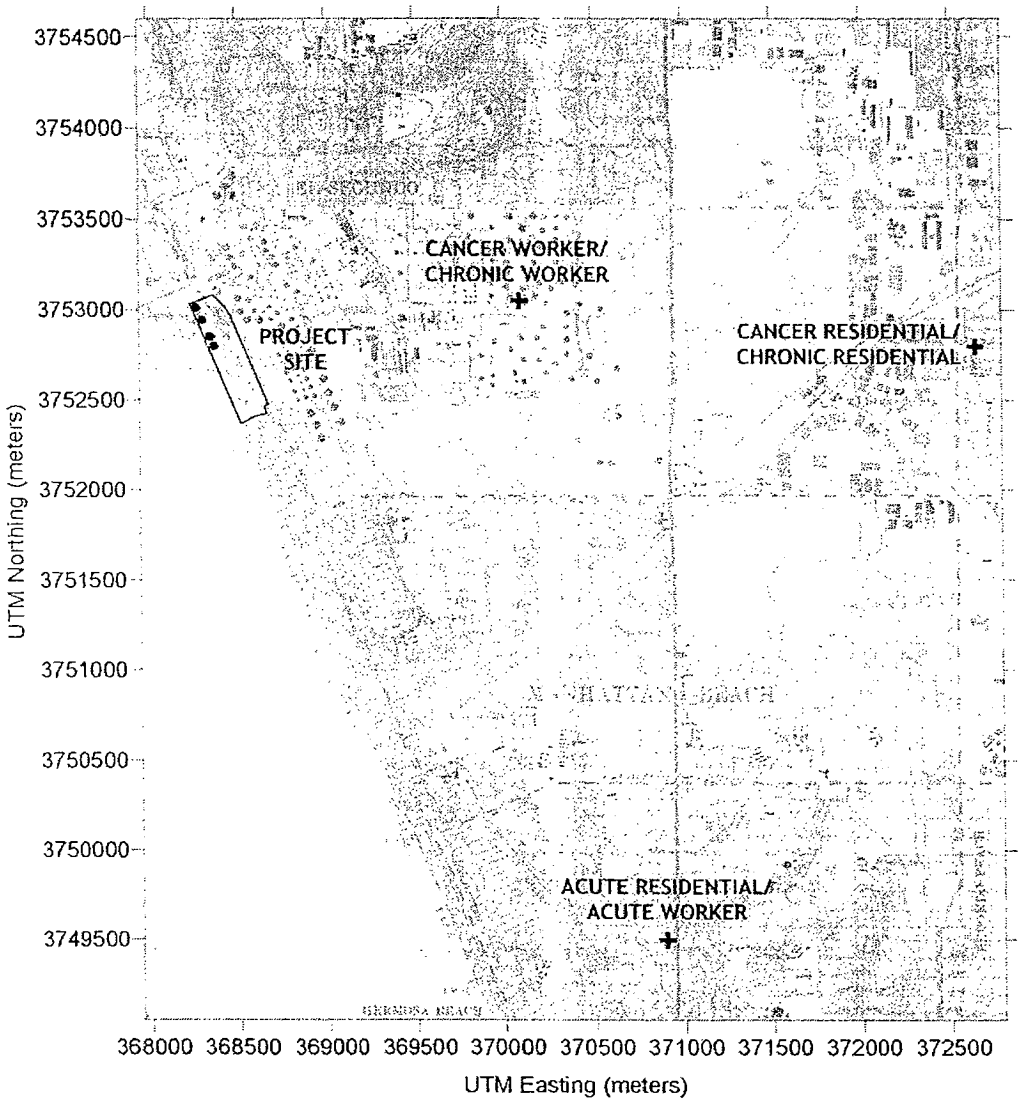


Figure Q.2
HARP Modeling Results
Maximum Impacts – Unit 7

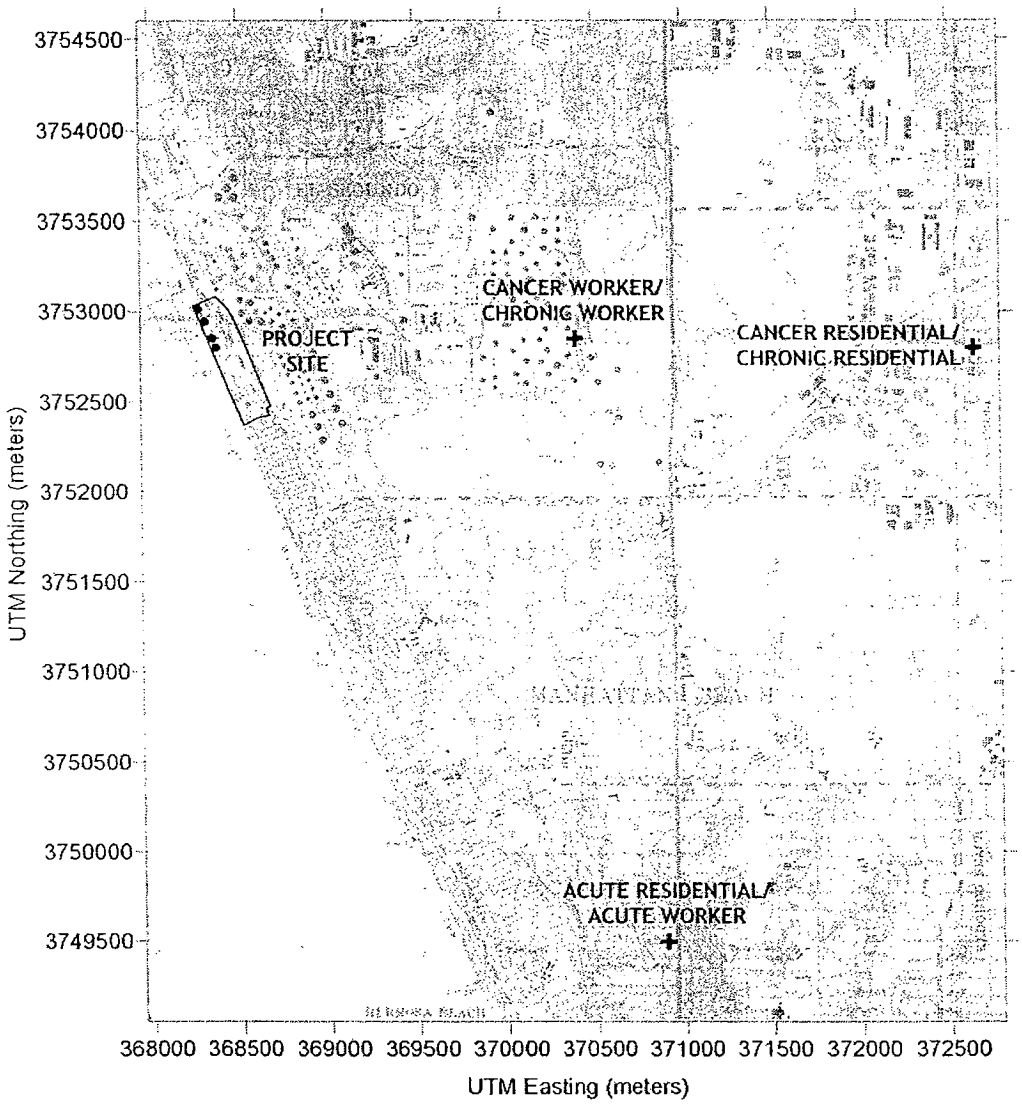
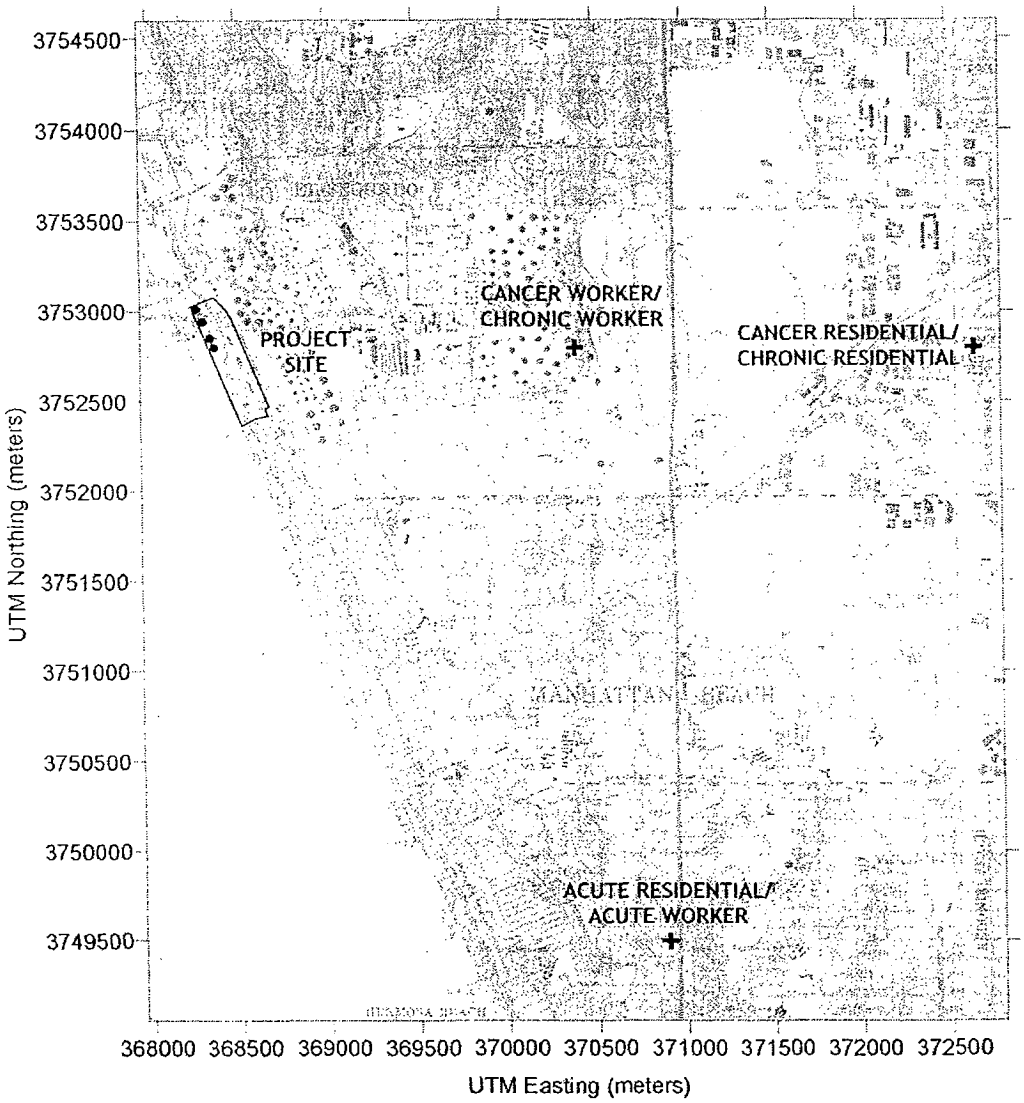


Figure Q.3
HARP Modeling Results
Maximum Combined Impacts – Units 5 and 7



APPENDIX H
HAZARDOUS MATERIALS RESPONSE # 1

MATERIAL SAFETY DATA SHEET
FOR OXYGEN GAS

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

BOC GASES

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: OXYGEN, REFRIGERATED LIQUID

1. Chemical Product and Company Identification

BOC Gases,
Division of
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974

TELEPHONE NUMBER: (908) 464-8100
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6

TELEPHONE NUMBER: (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802
EMERGENCY RESPONSE PLAN NO: 20101

PRODUCT NAME: OXYGEN, REFRIGERATED LIQUID
CHEMICAL NAME: Oxygen
COMMON NAMES/SYNONYMS: Liquid Oxygen, LOX
TDG (Canada) CLASSIFICATION: 2.2 (5.1)
WHMIS CLASSIFICATION: A, C

PREPARED BY: Loss Control (908)464-8100/(905)501-1700
PREPARATION DATE: 6/1/95
REVIEW DATES: 6/7/96

2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA[1]	TLV-ACGIH[2]	LD_{50} or LC_{50} Route/Species
Oxygen FORMULA: O_2 CAS: 7782-44-7 RTECS #: RS2060000	99.6 to 99.997	Not Available	Not Available	Not Available

[1] As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)
[2] As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agents

3. Hazards Identification

EMERGENCY OVERVIEW

Elevated oxygen levels may result in cough and other pulmonary changes. High concentrations of oxygen (greater than 75%) causes symptoms of hyperoxia which included cramps, nausea, dizziness, hypothermia, ambylopia, respiration difficulties, bradycardia, fainting spells and convulsions capable of leading to death. Nonflammable. Oxidizer, will accelerate combustion. Contact with liquid form may cause frostbite or freeze burns in exposed tissues.

ROUTE OF ENTRY:

Skin Contact	Skin Absorption	Eye Contact	Inhalation	Ingestion
Yes	No	Yes	Yes	Yes

HEALTH EFFECTS:

Exposure Limits	Irritant	Sensitization
No	No	No
Teratogen	Reproductive Hazard	Mutagen
No	No	No
Synergistic Effects None known		

Carcinogenicity: -- NTP: No IARC: No OSHA: No

EYE EFFECTS:
Contact with liquid product may cause tissue freezing.

SKIN EFFECTS:
Contact with liquid product may cause tissue freezing.

INGESTION EFFECTS:
Contact with liquid product may cause tissue freezing.

INHALATION EFFECTS:
High concentrations of oxygen (greater than 75%) causes symptoms of hyperoxia which included cramps, nausea, dizziness, hypothermia, ambylopia, respiration difficulties, bradycardia. fainting spells and convulsions capable of leading to death. The property is that of hyperoxia which leads to pneumonia. Concentrations between 25 and 75 % present a risk of inflammation of organic matter in the body.

NFPA HAZARD CODES		HMIS HAZARD CODES		RATINGS SYSTEM
Health:	3	Health:	3	0 = No Hazard
Flammability:	0	Flammability:	0	1 = Slight Hazard
Reactivity:	0	Reactivity:	0	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

4. First Aid Measures

EYE:
Never introduce ointment or oil into the eyes without medical advice! In case of freezing or cryogenic "burns" caused by rapidly evaporating liquid, DO NOT WASH THE EYES WITH HOT OR EVEN TEPID WATER! Remove victim from the source of contamination. Open eyelids wide to allow liquid to evaporate. If pain is present, refer the victim to an ophthalmologist for treatment and follow up. If the victim cannot tolerate light, protect the eyes with a light bandage.

SKIN:
For dermal contact or frostbite: Remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if the cryogenic "burn" has resulted in blistering of the dermal surface or deep tissue freezing.

INGESTION:
A physician should see the patient promptly if the cryogenic "burn" has resulted in blistering of the dermal surface or deep tissue freezing.

INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO OXYGEN. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Further treatment should be symptomatic and supportive. Inform the treating physician that the patient could be experiencing hyperoxia.

5. Fire Fighting Measures

Conditions of Flammability: Not flammable, Oxidizer		
Flash point: None	Method: Not Applicable	Autoignition Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS:
High oxygen concentrations vigorously accelerate combustion.

EXTINGUISHING MEDIA:
Water spray to keep cylinders cool. Extinguishing agent appropriate for the combustible material.

FIRE FIGHTING INSTRUCTIONS:
If possible, stop the flow of oxygen which is supporting the fire.

6. Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location.

7. Handling and Storage

Electrical classification:
Nonhazardous.

Liquid oxygen cannot be handled in carbon or low alloy steel. 18-8 and 18-10 stainless steel are acceptable as are copper and its alloys, nickel and its alloys, brass bronze, silicon alloys, Monel®, Inconel® and beryllium. Teflon®, Teflon® composites, or Kel-F® are preferred non-metalic gasket materials.

Check with supplier to verify oxygen compatability for the service conditions.

Stationary customer site vessels should operate in accordance with the manufacturer's and BOC's instruction. Do not attempt to repair, adjust or in any other way modify the operation of these vessels. If there is a malfunction or other type of operations problem with the vessel, contact the closest BOC location immediately.

Oxygen, refrigerated liquid is delivered to a customer into stationary, vacuum-jacketed vessels at the customer's location or in portable vacuum-jacketed "liquid" cylinders.

No smoking or open flames should be allowed near these vessels.

Liquid oxygen vessels should be used only in well ventilated areas in accordance with manufacture and BOC's instructions. Cylinders must always be kept upright. Specialized trucks are needed for their movement. Full and empty cylinders should be stored away from flammable products.

For additional recommendations, consult Compressed Gas Association Pamphlets G-4, P-12, P-4.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

EXPOSURE LIMITS[1]:

INGREDIENT	% VOLUME	PEL-OSHA[2]	TLV-ACGIH[3]	LD_{50} or LC_{50} Route/Species
Oxygen FORMULA: O_2 CAS: 7782-44-7 RTECS #: RS2060000	99.6 to 99.997	Not Available	Not Available	Not Available

[1] Refer to individual state of provincial regulations. as applicable, for limits which may be more stringent than those listed here.
[2] As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)
[3] As stated in the ACGIH 1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents.

ENGINEERING CONTROLS:
Use local exhaust to prevent accumulation of high concentrations that increase the oxygen level in air to more than 25%.

EYE/FACE PROTECTION:
Safety goggles or glasses as appropriate forr the job. Faceshield is recommended for cryogenic liquids.

SKIN PROTECTION:
Protective gloves made of any suitable material appropriate for the job. Insulated gloves recommended for cryogenic liquids.

OTHER/GENERAL PROTECTION:
Safety shoes, safety shower.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Cryogenic liquid	
Vapor pressure	: Above critical temp.	
Vapor density (Air = 1)	: 1.11	
Evaporation point	: Not Available	
Boiling point	: -297.3	°F
	: -182.9	°C
Freezing point	: -361.8	°F
	: -218.8	°C
pH	: Not Applicable	
Specific gravity	: 1.105	
Oil/water partition coefficient	: Not Available	
Solubility (H20)	: Slightly soluble	
Odor threshold	: Not Applicable	
Odor and appearance	: Clear, odorless, pale blue liquid.	

10. Stability and Reactivity

STABILITY:
Stable

INCOMPATIBLE MATERIALS:
All flammable materials.

HAZARDOUS DECOMPOSITION PRODUCTS:
None

HAZARDOUS POLYMERIZATION:
Will not occur.

11. Toxicological Information

MUTAGENIC:

Oxygen concentrations between 20 to 95% have produced genetic changes in mammalian cell assay test systems.

12. Ecological Information

No data given.

13. Disposal Considerations

Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to BOC Gases or authorized distributor for proper disposal.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Oxygen, refrigerated liquid	Oxygen, refrigerated liquid
HAZARD CLASS:	2.2	2.2, 5.1
IDENTIFICATION NUMBER:	UN 1073	UN 1073
SHIPPING LABEL:	NONFLAMMABLE GAS, OXIDIZER	NONFLAMMABLE GAS, OXIDIZER

15. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III - HAZARD CLASSES:
Fire Hazard
Sudden Release of Pressure Hazard

16. Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:
Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

APPENDIX I
SOIL & WATER RESPONSE # 5

SEPTEMBER 26, 2007 WILL SERVE LETTER
FROM THE CITY OF EL SEGUNDO

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

City of El Segundo

Department of Public Works
Steven Finton, Director

September 26, 2007

Mr. Roy Craft
El Segundo Power II LLC
310 Vista Del Mar
El Segundo, California 90245

RE: El Segundo Power Redevelopment Project - Will Serve Letter for Potable Water

Dear Mr. Craft:

The City of El Segundo understands that the California Energy Commission (CEC) has requested a new Will Serve letter for potable water supply for 30 to 35 years for the El Segundo Power Redevelopment (ESPR) Project. El Segundo Power II LLC has made design changes to the ESPR Project resulting in a potable water demand of approximately 750 gallons per day to support sanitary functions at the plant. We also understand that the exiting Units 3 and 4 at the plant continue to operate and will require potable water supply to operate.

Consistent with our previous Will Sever letter dated May 16, 2001, this letter confirms that the City of El Segundo will serve the El Segundo facility with an estimated 130,748 gallons per day (average 91 gallons per minute) for average and peak daily use of potable water for 30 to 35 years.

If you have any questions, please call me at (310)-524-2356.

Sincerely,

Steve Finton
Director of Public Works

Bill Crowe, Assistant City Manager
Gary Chicots, Director - Planning & Building Safety
Kimberly Christensen, Planning Manager
James Carver, Fire Marshal

Elected Officials:

Kelly McDowell, Mayor
Eric Busch, Mayor Pro Tem
Jim Boulgarides, Council Member
Eric K. Busch, Council Member
Carl Jacobson, Council Member
Cindy Mortesen, City Clerk
Ralph Lanphere, City Treasurer

Appointed Officials:

Jeffrey Stewart, City Manager
Mark D. Hensley, City Attorney

Department Directors:

Bill Crowe, Assistant City Manager
Debra Cullen, Interim Finance Director
Kevin Smith, Fire Chief
Debra Brighton, Library
Gary Chicots, Acting, Planning and Building Safety
David Cummings, Police Chief
Steven Finton, Public Works
Richard Brunette, Recreation & Parks

www.elsegundo.org

350 Main Street, El Segundo, California 90245
Phone (310) 524-2356 Fax (310)640-0489

APPENDIX J
SOIL & WATER RESPONSE # 7

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD ORDER NO. 01-043: WATER RECYCLING REQUIREMENTS FOR WEST BASIN MUNICIPAL WATER DISTRICT

WASTE DISCHARGE REQUIREMENTS FOR WEST BASIN MUNICIPAL WATER DISTRICT

MONITORING AND REPORTING PROGRAM NO. CI-7453 FOR WEST BASIN MUNICIPAL WATER DISTRICT

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD
ORDER NO. 01-043: WATER RECYCLING REQUIREMENTS FOR
WEST BASIN MUNICIPAL WATER DISTRICT

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. 01-043
(File No. 94-062)

WATER RECYCLING REQUIREMENTS FOR WEST BASIN MUNICIPAL WATER DISTRICT (West Basin Water Recycling Facility) (Title 22 Recycled Water)

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), finds:

1. West Basin Municipal Water District (West Basin or Producer) owns and operates the West Basin Water Recycling Facility (Recycling Facility) at 1935 Hughes Way, El Sengundo, California. The Recycling Facility provides tertiary treatment to a portion of the secondary treated wastewater (Hyperion effluent) from the City of Los Angeles Hyperion Treatment Plant (Hyperion) and produces a disinfected tertiary recycled water, that meets Title 22 California Code of Regulations standards for industrial uses and landscape irrigation. The production and use of the recycled Title 22 water are regulated under Water Recycling Requirements contained in Order No. 94-113, adopted by this Regional Board on October 31, 1994, as amended by Order No. 97-070 and Order No. 98-084, adopted by this Regional Board on May 12, 1997, and November 2, 1998, respectively.

2. California Water Code Section 13263(e) provides that all waste discharge requirements shall be reviewed periodically, and, upon such review, may be revised by the Regional Board. Following a review of the requirements in Order No. 94-113, its amendments, and inspections of the Recycling Facility, this Order updates Order No. 94-113 and includes additional finding, effluent limitations, updated standard provisions, and an updated monitoring and reporting program.

3. West Basin is a public agency providing wholesale recycled water to public and private purveyors. The purveyors then sell and deliver on retail the recycled water to the end-users. The purveyor is responsible to process the user's application, inspection of the point-of-use facility, and determine that the end-user has complied with all conditions of use. The actual delivery of recycled water to end-users is subject to approval of State Department of Health Services (hereinafter State DOHS) and/or its delegated local health agency.

4. The Recycling Facility is currently designed to produce up to 37.5 million gallons per day (mgd) of recycled water. The Recycling Facility consists of two separate treatment plants: One train that produces recycled water for landscape and agricultural irrigation, and for industrial application is referred to as the Title 22 Plant. The other that produces recycled water for barrier injection along the coastal reaches of aquifers to mitigate sea water intrusion is referred to as the Barrier Plant.

Revised March 29, 2001
March 12, 2001

5. Currently, the Title 22 Plant provides tertiary treatment to a portion of Hyperion effluent and can produce up to 30 mgd of disinfected tertiary recycled water that meets Title 22 California Code of Regulations standards (hereinafter Title 22 recycled water). The Title 22 Plant treatment process consists of coagulation, flocculation, monomedia anthracite coal filtration, and chlorine disinfection. In 1997 Phase II Expansion, the capacity of the Title 22 Plant was increased form 15 mgd to 30 mgd of recycled water. This Order prescribes requirements for use of the Title 22 recycled water in irrigation, and industrial application.

6. The Barrier Plant has a design capacity of up to 7.5 mgd of product water. The Barrier Plant provides advanced treatment to a portion of Hyperion effluent using two parallel treatment schemes with three reverse osmosis (RO) treatment trains. Each treatment train has a design capacity of 2.5 mgd. Treatment trains 1 and 2 use pre-decarbonation, lime clarification, recarbonation, multi-media filtration, chlorine addition, RO, post-decarbonation, and pH stabilization. Treatment train 3 uses microfiltration, RO, post-decarbonation, chlorine disinfection, and pH adjustment. The flows from all three treatment trains are combined prior to leaving the treatment plant. The recycled water produced by the Barrier Plant is blended with potable water; and the blend is then injected into the West Basin Barrier Project. Water Reclamation Requirements contained in Order No. 95-014 prescribes requirements for the recharge of recycled water into the barrier. The waste brine generated by the RO system is regulated under the National Pollutant Discharge Elimination System (NPDES) permit No. CA0063401 for its discharge into Santa Monica Bay through Hyperion five-mile outfall.

7. In 2000, a total of 5,724 million gallons (MG) of the Title 22 recycled water were produced. The recycled water produced was distributed to 148 users. The Mobil Oil Refinery, the Chevron El Segundo Refinery (Chevron Refinery), and the British Petroleum Refinery are three largest users using 2,156 MG, 1,055 and 1,032 MG, respectively.

8. Chevron Refinery will use up to another one (1) mgd of the Title 22 recycled water for injection into the Old Dune Sand aquifer in the West Coast Basin as part of Chevron's Liquid Hydrocarbon Recovery Program. Since the groundwater underlying the Chevron Refinery was de-designated for Municipal and Domestic Supply (MUN) beneficial use by this Regional Board in 2000, the condition set forth in the State DOHS approval letter dated June 15, 1998 has been met. However, the use of the nitrified Title 22 recycled water instead of potable water for injection requires the revision of the Chevron's existing waste discharge requirements contained in Order No. 97-113.

9. West Basin is constructing a third treatment system that will be known as the Boiler Feedwater treatment train in its Phase III Expansion. Up to 6 mgd of Hyperion effluent will be fed into the Boiler Feedwater treatment train, which will produce about 4.32 mgd of high purity (low- and high-pressure) boiler feedwater for use in the Chevron Refinery's boilers. The low-pressure stream will produce up to 1.73 mgd of recycled water using: microfiltration, RO, post-decarbonation, and softening. The high-pressure stream will produce up to 2.59 mgd of recycled water using: microfiltration, 1st pass RO, post-decarbonation, and 2nd pass RO. The low- and high-pressure boiler feedwater will be delivered to the Chevron Refinery using two newly constructed parallel pipelines. The boiler feedwater will be recirculating within the system without any significant discharge

to surface water. The blowdown from the Chevron boiler will be directed into the Chevron's inplant wastewater collection system and treated by its existing wastewater treatment facility before discharge to the ocean.

The Boiler Feedwater treatment train's RO process will produce approximately 0.81 mgd of waste brine that is also regulated under NPDES permit No. CA0063401. The Boiler Feedwater treatment system will be in operation in April 2001. The production and use of the boiler feedwater are also regulated under this Order.

Figure 1 is a flow schematic for the Recycling Facility that includes the existing Title 22 Plant and Barrier Plant as well as the proposed Boiler Feedwater treatment train.

10. Since the Recycling Facility is operating on a side stream (portion of secondary treated effluent) from the Hyperion Treatment Plant, redundancy in process units nor standby or emergency power during outages is not provided. The Recycling Facility layout allows off-specification recycled water to be pumped back and retreated in the Title 22 plant until the effluent meets the specifications. If retreatment of the recycled water would be impractical, the off-specification water would be discharged to the Hyperion five-mile outfall.

11. On June 13, 1994, this Regional Board adopted a revised *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coast Watersheds of Los Angeles and Ventura Counties (Basin Plan).* The Basin Plan contains beneficial uses and water quality objectives for groundwater within the West Coast Basin hydrologic area.

12. The beneficial uses of groundwater in the West Coast Basin are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

13. Section 13523 of the California Water Code provides that a regional board, after consulting with and receiving the recommendations of the State DOHS or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the public health, safety, or welfare, prescribe water reclamation requirements for water which is used or proposed to be used as recycled water. Section 13523 further provides that such requirements shall include, or be in conformance with, the statewide recycling criteria.

14. The use of recycled water for irrigation in parks, golf courses, freeway landscapes, school yards, cemeteries, and other landscaped or agricultural areas; and as cooling water in industrial cooling towers could affect public health, safety, or welfare; therefore requirements are necessary.

15. Pursuant to Section 60323, Title 22 of the California Code of Regulations, the Regional Board has consulted with the State DOHS regarding the proposed production, distribution, and use of recycled water; and has incorporated the department's recommendations in this Order.

16. The State DOHS adopted revised Water Recycling Criteria that became effective on December 2, 2000. The revisions expand the range of allowable uses of recycled water, established criteria for those new users, and clarify some of the ambiguity contained in the existing regulations.

17. The requirements contained in this Order, as they are met, will be in conformance with the goals and objectives of the Basin Plan and requirements of the Water Code.

18. Pursuant to Section 402(p) of the Clean Water Act and 40 CFR Parts 122, 123 and 124, the State Water Resources Control Board (State Board) adopted general NPDES permits to regulate storm water discharges associated with industrial activity (State Board Order No. 97-03-DWQ adopted on April 17, 1997) and construction activity (State Board Order No. 92-08-DWQ adopted in August 1992). Storm water discharge from the Recycling Facility is subject to requirements under this general permit. The Discharger has developed and implemented a Storm Water Pollution Prevention Plan since 1995.

19. West Basin had prepared an engineering report on its proposed production, distribution, and use of recycled water in irrigation and industrial cooling tower applications on April 14, 1994. The State DOHS approved the engineering report on October 19, 1994. Subsequently, West Basin submitted an amended Engineering Report on August 2, 1996, and an addendum to the Report on March 5, 1997, for the Phase II Expansion Project that increased design capacity from 15 mgd to 30 mgd. The State DOHS approved the amended Engineering Report on April 3, 1997. For the production, distribution, and use of boiler feedwater, West Basin filed another amended Engineering Report for the Phase III Expansion Project on September 12, 2000. This amended Engineering Report was approved by the State DOHS on October 23, 2000.

20. West Basin prepared and certified in May 1991 an Environmental Impact Report (EIR) on the water reclamation project. The EIR identified no significant adverse impact to water quality as a result of the discharge. The Discharger also prepared a Mitigated Negative Declaration for the Phase III expansion at the Recycling Facility. The West Basin Municipal Water District Board of Directors approved the Mitigated Negative Declaration and a Notice of Determination was filed with the Los Angeles County Clerk's Office on December 21, 1999. No comments were received during the review period. Therefore, the Mitigated Negative Declaration became final.

21. Pursuant to California Water Code Section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to the State Water Resources Control Board, P.O. Box 100, 901 P Street, Sacramento, CA 95812, within 30 days of adoption.

22. This update and issuance of water recycling requirements for an existing facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 2100 et seq.) in accordance with California Code of Regulations, Title 14, Chapter 3, Section 15301.

The Regional Board has notified the Producer and interested agencies and persons of its intent to issue Water Recycling Requirements for the use of recycled water and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to the use of recycled water and the tentative water recycling requirements.

IT IS HEREBY ORDERED that West Basin Municipal Water District shall comply with the following:

I. RECYCLED WATER LIMITATIONS

A. Conventionally Treated Title 22 Recycled Water

1. Recycled water used for irrigation and industrial application other than boiler feed shall be limited to disinfected tertiary recycled water only.

A disinfected tertiary recycled water is a filtered and subsequently disinfected wastewater that meets the following criteria:

a. The filtered wastewater has been disinfected by either:

(1) A chlorine disinfection process following conventional treatment or its equivalent that provide a CT (the product of total chlorine residual and modal contact time* measured at the same period) value of not less than 450 milligram-minutes per liter at all times with a modal time of at least 90 minutes, based on peak dry weather design flow; or

* Modal contact time means the amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance to chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

(2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactive and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

b. The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

A filtered wastewater is an oxidized wastewater that has been coagulated and passed through natural undisturbed soil or a bed of filter media so that the turbidity of the filtered wastewater does not exceed any of the following:

- An average of 2 NTU within a 24-hour period;
- 5 NTU more than 5 percent of the time within a 24-hour period; and
- 10 NTU at any time.

An oxidized wastewater is wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen. The oxidized wastewater shall not exceed 20 milligrams per liter (mg/L) total organic carbon (TOC), 30 mg/L suspended solids (SS), and 30 mg/L biochemical oxygen demand (BOD).

2. The Title 22 recycled water shall not contain constituents with concentrations in excess of the following limits:

Constituent	Units	Maximum Limitations
$BOD_5 20^oC$	mg/L	20
Oil and grease	mg/L	10
Suspended solids	mg/L	20
Settleable solids	ml/L	0.2
Total organic carbon	mg/L	20
Total dissolved solids	mg/L	800
Chloride	mg/L	250
Sulfate	mg/L	250
Boron	mg/L	1.5
Nitrate + nitrite (sum as nitrogen)	mg/L	10

B. RO Treated Boiler Feed Recycled Water

1. Recycled water used for the boiler feed shall be at least disinfected secondary-23 recycled water.

   A disinfected secondary-23 recycled water means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.

C. The recycled water used by Chevron for the injection into the Old Dune Sand aquifer for Chevron's Liquid Hydrocarbon Recovery Program shall not exceed one (1) million gallons per day.

D. The pH of the Title 22 recycled water shall at all times be within the range of 6.5 to 8.5 pH units. This pH limitation is not applicable to the boiler feed recycled water since no discharge of the boiler feed recycled water occurs.

E. The recycled water shall not contain trace, toxic and other constituents in concentrations exceeding the current applicable maximum contaminant or action levels for drinking water established by the State DOHS or at levels that adversely affect the beneficial uses of receiving groundwater.

F. The radioactivity of the recycled water shall not exceed the limits specified in Sections 64441 and 64443, Article 5, Chapter 15, Title 22 of the California Code of Regulations, or subsequent revisions.

G. The recycled water shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect the beneficial uses of the receiving groundwater.

H. The recycled water shall not cause a measurable increase in organic chemical contaminants in the groundwater.

II. SPECIFICATIONS FOR USE OF RECYCLED WATER

A. The boiler feed recycled water shall be used by the Chevron Refinery only.

B. The disinfected tertiary recycled water may be used for the following:

1. Surface irrigation in the following areas:
   a. Parks and playgrounds;
   b. School yards;
   c. Residential landscaping;
   d. Unrestricted access golf courses; and
   e. Any other irrigation use not specified in this section and not prohibited by other sections of the California Code of Regulations.

2. Industrial or commercial cooling tower; and

3. Industrial boiler feed.

C. The Title 22 recycled water shall not be used other than those specified in section II.B unless an engineering report has been submitted for such other uses and/or requirements for these uses have been prescribed by this Regional Board, in accordance with Section 13523 of the California Water Code.

D. The delivery of recycled water to end-users shall be subject to approval of State DOHS and/or its delegated local agency.

E. Whenever a cooling system using recycled water employs a cooling tower, the Producer shall submit a supplemental engineering report to the Regional Board and the State DOHS, and obtain approval from the State DOHS for use of recycled water in industrial or commercial cooling tower, on a case-by-case basis.

F. Whenever a cooling system, using recycled water in conjunction with an air conditioning facility, utilizes a cooling tower or otherwise creates a mist that could come into contact with employees or members of the public, the cooling system shall comply with the following:

1. A drift eliminator shall be used whenever the cooling system is in operation.

2. A chlorine, or other, biocide shall be used to treat the cooling system recirculating water to minimize the growth of *Legionella* and other microorganisms.

G. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.

H. No irrigation with disinfected tertiary recycled water shall take place within 50 feet of any domestic water supply well or reservoir, or stream used as source of domestic water.

I. Use of recycled water shall comply with the following:

1. Any irrigation runoff shall be confined to the recycled water use area.
2. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities, and shall not contact any drinking water fountain.

J. All use areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK". Each sign shall display an international symbol similar to that shown in figure 2 to alert people who do not read English.

K. Recycled water used for irrigation shall be retained on the areas of use and shall not be allowed to escape as surface flow, except as provided for in a National Pollutant Discharge Elimination System (NPDES) permit.

For the purpose of this requirement, however, minor amounts of irrigation return water from peripheral areas shall not be considered a violation of this Order.

L. Recycled water shall be applied at such a rate and volume as not to exceed vegetative demand and soil moisture conditions. Special precautions must be taken to: prevent clogging of spray nozzles, to prevent over-watering, and minimize the production of run-off. Pipelines shall be maintained so as to prevent leakage.

M. Recycled water used for irrigation shall not be allowed to run off into recreational lakes unless it meets the criteria for such lakes.

N. No physical connection shall be made or allowed to exist between any recycled water piping and any piping conveying potable water, except as allowed under Section 7604 of Title 17, California Code of Regulations.

O. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs. Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.

III. REQUIREMENTS FOR DUAL PLUMBED SYSTEM

A. The public water supply shall not be used as a backup or supplemental source of water for a dual-plumbed recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of Section 7602 (a) and 7603 (a) of Title 17, California Code of Regulations, and the State DOHS approval of the public water system has been obtained.

B. The producer shall not deliver recycled water for any internal use to any individually-owned residential units including free-standing structure, mutiplexes, or condominiums.

C. The producer shall not deliver recycled water for internal use except for fire suppression system, to any facility that produces or processes food products or beverages.

D. The producer shall not deliver recycled water to a facility using a dual plumbed system unless the report required to Section 13522.5 of the Water Code, and which meets the requirements set forth in section III.E., has been submitted to, and approved by, the Regional Board and the State DOHS.

E. The report that shall be submitted by the Producer to the State DOHS pursuant to Section 13522.5 of the Water Code shall contain the following information for dual plumbed systems, in addition to the information required by Section 60323 of Title 22 of the California Code of Regulations:

1. A detailed description of the intended use site identifying the following:

    a. The number, location, and type of facilities within the use area proposing to use dual plumbed systems;
    b. The average number of persons estimated to be served by each facility on a daily basis;
    c. The specific boundaries of the proposed use site including a map showing the location of each facility to be served;
    d. The person or persons responsible for operation of the dual plumbed system at each facility; and
    e. The specific use to be made of the recycled water at each facility.

2. Plans and specifications describing the following:

    a. Proposed piping system to be used;
    b. Pipe locations of both the recycled and potable systems;
    c. Type and location of the outlets and plumbing fixtures that will be accessible to the public; and
    d. The methods and devices to be used to prevent backflow of recycled water into the public water system.

3. The methods to be used by the Producer to assure that the installation and operation of the dual plumbed system will not result in cross connections between the recycled water piping system and the potable water piping system. These shall include a description of pressure, dye or other test methods to be used to test the system every four years.

F. Prior to the initial operation of the dual-plumbed recycled water system and annually thereafter, the dual plumbed system within each facility and use site shall be inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in section III.E.3. above. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection and testing for the prior year shall be submitted to the State DOHS within 30 days following completion of the inspection or testing.

G. The Producer shall notify the State DOHS of any incidence of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of discovery the incident.

H. Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with Section 7605 of Title 17, California Code of Regulations.

IV. GENERAL REQUIREMENTS

A. Bypass, discharge, or delivery to the use area of inadequately treated wastewater, at any time, is prohibited.

B. Recycled water shall not be used for irrigation during periods of extreme rainfall and/or run-off.

C. Recycled water use shall not result in earth movement in geologically unstable areas.

D. The recycling facility shall be adequately protected from inundation and damage by storm flows and run-off.

E. Adequate freeboard and/or protection shall be maintained in the recycled water storage tanks and process tanks to ensure that direct rainfall will not cause overtopping.

F. The wastewater treatment and use of recycled water shall not cause pollution or nuisance.

G. The wastewater treatment and use of recycled water shall not result in problems caused by breeding of mosquitoes, gnats, midges, or other pests.

H. The use of recycled water shall not impart tastes, odors, color, foaming, or other objectionable characteristics to the receiving groundwater.

I. The use of recycled water, which could affect the receiving ground water, shall not contain any substance in concentration toxic to human, animal, or plant life.

J. Odors of sewage origin shall not be perceivable beyond the limits of the property owned or controlled by the Producer and/or recycled water user.

V. PROVISIONS

A. A copy of these requirements shall be maintained at the water reclamation facility so as to be available at all times to operating personnel.

B. The Producer shall furnish each purveyor and user of recycled water a copy of these requirements and ensure that the requirements are maintained at the purveyor and user's facilities so as to be available at all times to operating personnel.

C. The Producer shall be responsible to ensure that all users of recycled water comply with the specifications and requirements for such use.

D. The Producer shall, at all times, properly operate and maintain all treatment facilities and control systems (and related appurtenances) which are installed or used by the Producer to achieve compliance with the conditions of this Order. Proper operation and maintenance includes: effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

E. The Producer shall submit to the Regional Board, for approval of the Executive Officer, within 90 days of adoption of this Order an operating and maintenance management plan, including a preventive (fail-safe) procedure and contingency plan for controlling accidental discharge and/or delivery to users of inadequately treated wastewater.

F. Supervisors and operators of the wastewater reclamation facility shall possess a certificate of appropriate grade as specified in Title 23, California Code of Regulations, Section 3680 or subsequent revisions.

G. The Producer shall submit to the Regional Board, under penalty of perjury, technical self-monitoring reports according to the specifications contained in the Monitoring and Reporting Program as directed by the Executive Officer.

H. The Producer shall notify this Regional Board and the State DOHS, by telephone within 24 hours, of any violations of recycled water use conditions or any adverse conditions as a result of the use of recycled water from this facility; written confirmation shall follow within one week.

I. The Producer shall notify this Regional Board and the State DOHS, immediately by telephone, of any confirmed coliform counts that could cause a violation of the requirements, including the date(s) thereof. This information shall be confirmed in the

next monitoring report; in addition, for any actual coliform limit violation that occurred, the report shall also include the cause(s) of the high coliform counts, the corrective measures undertaken (including dates thereof), and the preventive measures undertaken to prevent a recurrence.

J. In accordance with Section 13522.5 of the California Water Code, and Title 22, Division 4, Chapter 3, Article 7, Section 60323 of the California Code of Regulations, Producer shall file an engineering report, prepared by a properly qualified engineer registered in California, of any material change or proposed change in character, location or volume of the recycled water or its uses to the Regional Board and to the State DOHS.

K. For any extension or expansion of the recycled water system or use areas, the Producer shall submit a report detailing the extension or expansion plan for approval of the State DOHS. Following construction, as-built drawings shall be submitted to the State DOHS for approval prior to delivery of recycled water. The Executive Officer shall be furnished with as-built drawings and a copy of the State DOHS approval.

L. The Producer shall notify the Executive Officer, in writing, at least 30 days in advance of any proposed transfer of ownership of the reclamation facility and responsibility for complying with this Order. The notice shall include a written agreement between the existing and new Producer indicating the specific date for the transfer of responsibility for compliance with this Order. The agreement shall include an acknowledgement that the existing Producer is liable for any violations that occurred up to the transfer date and the new Producer is liable from the transfer date on.

M. The Producer shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Producer's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
4. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location.

N. The Producer must comply with all conditions of these water recycling requirements. Violations may result in enforcement actions, including Regional Board orders or court orders, requiring corrective action or imposing civil monetary liability, or in modification or revocation of these requirements.

O. These requirements do not exempt the Producer from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize the reclamation and use facilities; and they leave unaffected any further constraint on the

use of recycled water at certain site/s which may be contained in other statutes or required by other agencies.

P. This Order does not alleviate the responsibility of the Producer to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Expansion of the reclamation facility shall be contingent upon issuance of all necessary requirements and permits, including a conditional use permit.

Q. After notice and opportunity for a hearing, this Order may be modified, revoked and reissued, or terminated for cause, which include but is not limited to: failure to comply with any condition of in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; acquisition of new information which could have justified the application of different conditions if known at the time of Order adoption.

The filing of a request by the Producer for modification, revocation and reissuance, or termination of the Order; or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

R. The Producer shall furnish, within a reasonable time, any information the Regional Board or the State DOHS may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Producer shall also furnish the Regional Board, upon request, with copies of records required to be kept under this Order.

S. The provisions of these water recycling requirements are severable. If any provision of these requirements is found invalid, the remainder of these requirements shall not be affected.

T. In an enforcement action, it shall not be a defense for the Producer that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure the treatment facility, the Producer shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

U. This Order includes the attached "Standard Provisions ". If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail.

V. This Order includes the attached Monitoring and Reporting Program. If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the Monitoring and Reporting Program prevail.

W. This Order will be reopened to include definitions of "odors of sewage origin" with respect to IV (General Requirements) J. on page 11.

VI. RESCISSION

Except for enforcement purposes, Order No. 94-113, adopted by this Board on October 31, 1994, is hereby rescinded.

I, Dennis A. Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on March 29, 2001.

Dennis A. Dickerson
Executive Officer

FILE NO. 94-062:
WASTE DISCHARGE REQUIREMENTS FOR
WEST BASIN MUNICIPAL WATER DISTRICT

State Of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
FOR
WEST BASIN MUNICIPAL WATER DISTRICT
(West Basin Water Recycling Facility)
(Title 22 Recycled Water)

FILE NO. 94-062
PUBLIC NOTICE NO. 01-XXX

I. INTRODUCTION

West Basin Municipal Water District (West Basin or Producer) owns and operates the West Basin Water Recycling Facility (Recycling Facility) at 1935 Hughes Way, El Sengundo, California. The Recycling Facility provides tertiary treatment to a portion of the secondary treated wastewater (Hyperion effluent) from the City of Los Angeles Hyperion Treatment Plant (Hyperion) and produces up to 30 million gallons per day (mgd) of disinfected tertiary recycled water, that meets Title 22 California Code of Regulations standards for industrial uses and landscape irrigation. The production and use of the recycled Title 22 water are regulated under Water Recycling Requirements contained in Order No. 94-113, adopted by this Regional Board on October 31, 1994, as amended by Order No. 97-070 and Order No. 98-084, adopted by this Regional Board on May 12, 1997, and November 2, 1998, respectively.

West basin has filed a report of material change with the Regional Board for its Phase III Expansion of building a new Boiler Feedwater treatment train and applied for the revision of the existing waste discharge requirements for the Title 22 recycled water.

FACILITY ADDRESS	MAILING ADDRESS
1935 Hughes Way	17140 S. Avalon Blvd. Suite 210
El Segundo, CA 90245	Carson, CA 90746
Contact: Lucia M. McGovern	General Manager: Darryl G. Miller
Phone No.: (310) 660-6245	Phone No.: (310) 217-2411

II. DESCRIPTION OF FACILITY

The Recycling Facility is currently designed to produce up to 37.5 million gallons per day (mgd) of recycled water. The Recycling Facility consists of two separate treatment plants: One train that produces recycled water for landscape and agricultural irrigation, and for industrial application is referred to as the Title 22 Plant. The other that produces recycled water for barrier injection along the coastal reaches of aquifers to mitigate seawater intrusion is referred to as the Barrier Plant.

Currently, the Title 22 Plant can produce up to 30 mgd of disinfected tertiary recycled water that meets Title 22 California Code of Regulations standards (hereinafter Title 22 recycled water). The Title 22 Plant treatment process consists of coagulation,

flocculation, monomedia anthracite coal filtration, and chlorine disinfection. In 1997 Phase II Expansion, the capacity of the Title 22 Plant was increased form 15 mgd to 30 mgd of recycled water.

The Barrier Plant has a design capacity of up to 7.5 mgd of product water. The Barrier Plant provides advanced treatment to a portion of Hyperion effluent using two parallel treatment schemes with three reverse osmosis (RO) treatment trains. Each treatment train has a design capacity of 2.5 mgd. Treatment trains 1 and 2 use pre-decarbonation, lime clarification, recarbonation, multi-media filtration, RO, post-decarbonation, pH stabilization, and chlorine disinfection. Treatment train 3 uses microfiltration, RO, post-decarbonation, chlorine disinfection, and pH adjustment. Recycled water produced by Barrier Plant is regulated under separate permit.

West Basin is constructing a third treatment system that will be known as the Boiler Feedwater treatment train in its Phase III Expansion. Up to 6 mgd of Hyperion effluent will be fed into the Boiler Feedwater treatment train, which will produce about 4.32 mgd of high purity (low- and high-pressure) boiler feedwater for use in the Chevron Refinery's boilers. The low-pressure stream will produce up to 1.73 mgd of recycled water using: microfiltration, RO, post-decarbonation, and softening. The high-pressure stream will produce up to 2.59 mgd of recycled water using: microfiltration, 1st pass RO, post-decarbonation, and 2nd pass RO. The low- and high-pressure boiler feedwater will be delivered to the Chevron Refinery using two newly constructed parallel pipelines in April 2001.

III. DESCRIPTIONS OF DISCHARGE

A. The characteristics of Title 22 recycled water, based on data submitted in the 2000 Annual monitoring reports, are as follows:

Constituent	Unit	Annual Average	Maximum
Daily flow	mgd	15.34	19.07
pH (daily grab)	pH units	7.1	7.2
Turbidity (continuous)			
Ave. time/day > 10 NTU	minutes	0	0
Ave time/day > 5 NTU	minutes	0	0
Daily average	NTU	2.03	2.30
Concentration-time (chlorination)			
Daily average	mg-min/L	671	1302
Average minimum	mg-min/L	519	1056
Average maximum	mg-min/L	889	1636
Chlorine residual (continuous)			
Average minimum	mg/L	5.5	6.2
Average maximum	mg/L	7.9	9.6
Total coliform (daily grab)	MPN/100ml	0.01	0.1
Total suspended solids (weekly)	mg/L	0.8	2.5
Monthly maximum	mg/L	2	5
BOD (weekly)	mg/L	0.1	1
Settleable solids (weekly)	ml/L	<0.1	<0.1

Oil and grease (monthly)	mg/L	<3	<3
Total dissolved solids (monthly)	mg/L	672	750
Chloride (monthly)	mg/L	159	186
Sulfate (monthly)	mg/L	115	130
Boron (monthly)	mg/L	0.6	0.7
Ammonia as N (quarterly)	mg/L	29	32
Nitrate as N (quarterly)	mg/L	0.8	2.0
Nitrite as N (quarterly)	mg/L	0.2	0.7
Total organic carbon (Quarterly)	mg/L	11	12-
Arsenic	mg/L	0.0035	0.004
Chromium	mg/L	0.02	0.03
Nickel	mg/L	0.015	0.02
Cyanide	mg/L	0.090	0.110
Halomethanes	µg/L	9.1	11.5
1,4-Dichlorobenzene	µg/L	1.8	2.0
Tetrachloroethylene	µg/L	1.8	2.0
Methylene chloride	µg/L	1.9	2.5
Toluene	µg/L	0.2	0.4
N-nitrosodimethylamine	µg/L	1	3
Bis(2-Ethylhexyl)phthalate	µg/L	2.3	4.0
Di-n-butyl phthalate	µg/L	<0.4	0.4
Diethyl phthalate	µg/L	0.2	0.9
4,4'-DDT	µg/L	<0.02	0.02
Endosulfan sulfate	µg/L	<0.02	0.03
gamma BHC	µg/L	0.02	0.08

Other priority pollutants were reported as nondetect.

B. The quality of the RO treated boiler feedwater is expected to be similar to that of the Barrier product water since same treatment processes are employed. Based on data in the 2000 Annual Barrier Project monitoring report, the characteristics of the boiler feedwater may be as follows:

Constituent	Unit	Concentration
Turbidity	NTU	0.08
pH	pH units	6.0-8.0
Total coliform	MPN/100ml	<2
Total suspended solids	mg/L	<1
BOD	mg/L	--
Settleable solids	ml/L	<0.1
Oil and grease	mg/L	<3
Total dissolved solids	mg/L	113
Total hardness as $CaCO_3$	mg/L	60
Total alkalinity as $CaCO_3$	mg/L	59
Boron	mg/L	0.46
Ammonia as N	mg/L	3.0
Nitrate as N	mg/L	1.0

Nitrite as N	mg/L	0
Total organic carbon	mg/L	0.6
Chloride	mg/L	27
Sulfate	mg/L	3.0
Halomethanes	µg/L	3.9
1,4-Dichlorobenzene	µg/L	0.5
Methylene chloride	µg/L	1

Other priority pollutants will not be detected in the boiler feedwater.

IV. USE OF RECYCLED WATER

A. The Title 22 recycled water was used for irrigation and industrial purposes. West Basin Title 22 Plant produced a total of 5,724 million gallons in 2000. There was a total of 148 users connected to the recycled water distribution system. The largest users were the Chevron Nitrification Plant, the Mobil Nitrification Plant and Mobil boiler, and the British Petroleum (Arco) Refinery. The newly constructed Boiler Feed treatment train will produce high purity recycled water for the Chevron El Sengundo Refinery's high-pressure and low-pressure boiler.

B. Up to one million gallons per day of nitrified Title 22 recycled water may be used for the injection into the Old Dune Sand aquifer for the Chevron's Liquids Hydrocarbon Recovery Program. In 1998, the Chevron's proposal of injecting recycled water instead of potable water into aquifer was not accepted by the DOHS because of the MUN beneficial use for the groundwater underlying Chevron Refinery. In 2000, the *Basin Plan* was revised by the Regional Board to de-designate the groundwater beneath the Chevron Refinery for MUN beneficial use. Since the condition has been met, Chevron may begin to inject recycled water into aquifer after the revision of the existing waste discharge requirements contained in Order No. 97-113.

V. BASIS FOR THE PROPOSED WATER RECYCLING REQUIREMENTS

A. Beneficial Uses

On June 13, 1994, this Regional Board adopted a revised *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coast Watersheds of Los Angeles and Ventura Counties (Basin Plan).* The Basin Plan contains beneficial uses and water quality objectives for groundwater within the West Coast Basin hydrologic area.

The beneficial uses of groundwater in the West Coast Basin are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

B. Statutes, Rules, and Regulations Applicable to Discharge

1. Water Recycling Criteria (Title 22, Division 4, California Code of Regulations), effective December 2, 2000.

2. California Drinking Water Standards (California Domestic Water Quality and Monitoring Regulations, Title 22, California Code of Regulations).

3. Water quality objectives for groundwater are implemented according to the *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coast Watersheds of Los Angeles and Ventura Counties (Basin Plan),* adopted June 13, 1994.

C. The following table shows the recycled water limitations and the specific rationales for each of the numerical limitations.

Conventional Treated Title 22 Recycled Water

Constituent	Unit	Maximum Limitations	Basis for Limits
pH	pH unit	between 6.5 - 8.5	Basin Plan
$BOD_5 20^oC$	mg/L	20	Previous Order
Oil and grease	mg/L	10	Previous Order
Suspended solids	mg/L	20	Previous Order
Settleable solids	ml/L	0.2	Previous Order
Total organic carbon	mg/L	20	Title 22, CCR
Total dissolved solids	mg/L	800	Basin Plan
Chloride	mg/L	250	Basin Plan
Sulfate	mg/L	250	Basin Plan
Boron	mg/L	1.5	Basin Plan
Nitrate+Nitrite as N	mg/L	10	Primary MCL
Turbidity	NTU	2 (24-h average) >5 (less than 5 % of time in 24 hours) No more than 10	Water Recycling Criteria
Coliform	MPN	2.2 (7-day median) > 23 (less than one sample in 30 days) No more than 240	Water Recycling Criteria

RO Treated Boiler Feed Recycled Water

Constituent	Unit	Maximum Limitations	Basis for Limits
Coliform	MPN	23 (7-day median) >240 (less than one sample in 30 days)	Water Recycling Criteria

VI. RECYCLED WATER MONITORING

To monitor the quality of recycled water, the following monitoring programs are proposed in the tentative Water Recycling Requirements:

A. Monitoring Program for the Conventional Treated Title 22 Recycled Water

constituent	Proposed Minimum Frequency of Analysis	Existing Order No. 94-113
Total waste flow	continuous	same
Turbidity [1]	continuous	same
Chlorine residual [2]	continuous	same
pH	daily	same
Coliform [3]	daily	same
Suspended solids	weekly	same
$BOD_5 20^oC$	weekly	same
Settleable solids	weekly	same
Oil and grease	monthly	same
Total dissolved solids	monthly	same
Chloride	monthly	same
Boron	monthly	same
Sulfate	monthly	same
Nitrate nitrogen	quarterly	same
Nitrite nitrogen	quarterly	same
Ammonia nitrogen	quarterly	same
Total organic carbon	quarterly	same
Hexavalent chromium	quarterly	not required
Priority pollutants	quarterly	same
Radioactivity	annually	same

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1. Turbidity shall be continuously monitored and recorded at a point after final filtration. The average value recorded each day, the amount of time that 5 NTU is exceeded, and the incident of exceeding 10 NTU, if any, shall be reported.

2. Chlorine residual shall be continuously monitored and recorded at a point after the final chlorine contact tank. The minimum and maximum values shall be reported.

3. Samples shall be obtained subsequent to the chlorination process.

B. Monitoring Program for RO Treated Boiler Feedwater

Two sampling stations shall be established for the low-pressure and the high-pressure boiler feedwater, respectively. The following shall constitute the monitoring program for the boiler feedwater:

constituent	Proposed Minimum Frequency of Analysis	Existing Order No. 94-113
Total waste flow	continuous	not required
Turbidity [4]	continuous	not required
pH	weekly	not required
Coliform	weekly	not required
Priority pollutants [5]	annually	not required
Radioactivity	annually	not required

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4. Turbidity shall be continuously monitored and recorded at a point after microfiltration. The average value recorded each day, the amount of time that 0.2 NTU is exceeded, and the incident of exceeding 0.5 NTU, if any, shall be reported.

5. These analyses shall be conducted for the low-pressure and the high-pressure boiler feedwater at the first year after the effective date of the Order. If the first analysis of the high-pressure boiler feedwater indicates complete compliance with the requirements, only the low-pressure boiler feedwater shall be analyzed thereafter.

VII. WRITTEN COMMENTS

Regional Board staff requests written comments on the tentative Water Recycling Requirements by March 20, 2001. This will give staff time to review and consider the comments, respond to them, and include the comments and response in the Board's agenda folder. Written comments received after March 20, 2000, will be submitted, ex agenda, to the Board for their consideration. Comments should be submitted either in person, by mail or faxed to:

Winnie D. Jesena
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Fax Number: (213) 576-6660

VIII. PUBLIC HEARING

The Board will consider the tentative Water Recycling Requirements during a public hearing on the following date, time and place:

Date:	March 29, 2001
Time:	9:00 a.m.
Location	The Richard M. Chambers U.S. Court of Appeals Building 125 South Grand Avenue Pasadena, California

Interested parties and persons are invited to attend.

At the public hearing, the Board will hear any testimony, if any, pertinent to the discharge and tentative requirements. Oral testimony will be heard; however, for accuracy of the record, all important testimony should be in writing

IX. WASTE DISCHARGE REQUIREMENTS APPEALS

Pursuant to California Water Code Section 13320, an aggrieved party may seek review of the final Waste Discharge Requirements by filing a petition with the State Water Resources Control Board (SWRCB). A petition must be sent to the SWRCB, P.O. Box 100, 901 P. Street, Sacramento, CA 95812, within 30 days of adoption of the Waste Discharge Requirements.

X. INFORMATION AND COPYING

Copies of the tentative NPDES permit and other documents relative to this tentative permit is available at the Regional Board office for inspection and copying by appointment scheduled between the hours of 10:00 a.m. and 4:00 p.m., Monday through Friday, excluding holidays. For appointment, please call Cindy Flores at (213) 576-6633.

XI. REGISTER OF INTERESTED PERSONS

Any person interested in being placed in the mailing list for information regarding these requirements should write to the Regional Board. Attention: Vilma Correa.

MONITORING AND REPORTING PROGRAM NO. CI-7453
FOR WEST BASIN MUNICIPAL WATER DISTRICT

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI- 7453
FOR
WEST BASIN MUNICIPAL WATER DISTRICT
(West Basin Water Recycling Facility)
(Title 22 Recycled Water)

I. MONITORING AND REPORTING REQUIREMENTS

A. The Producer shall implement this monitoring program on the effective date of this Order. Monitoring reports shall be submitted quarterly, by the 15th day of the second month following the end of the quarterly monitoring period. The first monitoring report under this program shall be received at the Regional Board by August 15, 2001, covering the monitoring period from April 1 to June 30, 2001.

B. Quarterly monitoring shall be performed during the months of February, May, August, and November. Annual monitoring shall be performed during the month of August. Results of monthly, quarterly, and annual analyses shall be reported in the appropriate quarterly monitoring report. Should there be instances when monitoring could not be done during these specified months, the Producer must notify the Regional Board stating the reason why and obtain approval for an alternate schedule.

C. All chemical, and bacteriological analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP) or approved by the Executive Officer. A copy of the laboratory certification shall be submitted with the annual summary report.

D. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136.3. All QA/QC items must be run on the same dates when samples were actually analyzed, and the results shall be reported in the Regional Board format and submitted with the laboratory reports. The Producer shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff. Proper chain of custody procedures must be followed and a copy of that documentation shall be submitted with the report.

E. The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL) and the Minimum Level (ML) for each pollutant. For the purpose of reporting compliance with numerical limitations, analytical data shall be reported with one of the following methods, as the case may be:

a. An actual numerical value for sample results greater than or equal to the ML; or

b. "Detected, but Not Quantified (DNQ)" with an estimated chemical concentration of the sample if results are greater than or equal to the laboratory's MDL but less than the ML; or

c. "Not-Detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used.

Revised March 29, 2001
March 12, 2001

The MLs are those published by the State Water Resources Control Board in the *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, March 2, 2000.*

F. The ML employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Producer can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Executive Officer. At least once a year, the Producer shall submit a list of the analytical methods employed for each test and associated laboratory quality assurance/quality control procedures.

G. The Producer shall inform the Regional Board well in advance of any proposed construction activity or modification to the treatment plant that could potentially affect compliance with applicable requirements.

II. SUBMITTAL OF MONITORING AND ANNUAL REPORTS

A. All monitoring and annual summary reports must be addressed to the Regional Board, Attention: Information Technology Unit. Reference the reports to Compliance File No. CI-7453 to facilitate routing to the appropriate staff and file.

B. By March 1 of each year, the Producer shall submit an annual report to the Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. The data shall be submitted to the Regional Board on hard copy and on 3 1/2" computer diskette. The submitted data must be IBM compatible, preferably using Microsoft Excel software. In addition, the Producer shall discuss the compliance record and the corrective actions taken or planned, which may be needed to bring the recycled water into full compliance with water recycling requirements.

The annual report shall address operator certification and provide a list of current operating personnel and their grade of certification. The report shall also include the date of the facility's Operation and Maintenance Management Plan, the date the plan was last reviewed, and whether the plan is complete and valid for the current facilities. The report shall restate, for the record, the laboratories used by the Producer to monitor compliance with this Order, their status of certification, and provide a summary of performance.

C. Database Management System: The Regional Board has developed a compliance monitoring database management system that may require the Producer to submit the monitoring and annual summary reports electronically when it becomes fully operational.

III. RECYCLED WATER MONITORING

A sampling station shall be established where representative samples of recycled water can be obtained. Recycled water samples may be obtained at a single station provided that station is representative of the quality of all recycled water delivered to the users. Each sampling station shall be identified and approved by the Executive Officer prior to its use.

A. Monitoring Program for the Conventionally Treated Title 22 Recycled Water

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis
Total waste flow	MGD	---	continuous
Turbidity [2]	NTU	---	continuous
Chlorine residual [3]	mg/L	---	continuous
pH	pH units	grab	daily
Coliform [4]	MPN/100ml	grab	daily
Suspended solids	mg/L	24-hr composite	weekly
$BOD_5 20°C$	mg/L	24-hr composite	weekly
Settleable solids	ml/L	24-hr composite	weekly
Oil and grease	mg/L	grab	monthly
Total dissolved solids	mg/L	24-hr composite	monthly
Chloride	mg/L	24-hr composite	monthly
Boron	mg/L	24-hr composite	monthly
Sulfate	mg/L	24-hr composite	monthly
Nitrate nitrogen	mg/L	24-hr composite	quarterly
Nitrite nitrogen	mg/L	24-hr composite	quarterly
Ammonia nitrogen	mg/L	24-hr composite	quarterly
Total organic carbon	mg/L	24-hr composite	quarterly
Hexavalent chromium	mg/L	grab	quarterly
Priority pollutants [5]	µg/L	grab and 24-hr composite	quarterly
Radioactivity	pCi/L	24-hr composite	annually

1. "Grab sample" is defined as any individual sample collected in a short period of time not exceeding 15 minutes. "Grab samples" shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks. It is used primarily in determining compliance with "daily maximum" limits and the "instantaneous maximum" limits.

   "Composite sample" means, for flow measurements, the arithmetic mean of no fewer than eight individual measurements taken at equal intervals for 24 hours or for the duration of the treatment, whichever is shorter.

2. Turbidity shall be continuously monitored and recorded at a point after final filtration. The average value recorded each day, the amount of time that 5 NTU is exceeded, and the incident of exceeding 10 NTU, if any, shall be reported.

3. Chlorine residual shall be continuously monitored and recorded at a point after the final chlorine contact tank. The minimum and maximum values shall be reported.

4. Samples shall be obtained subsequent to the chlorination process.

5. Priority pollutants are listed on page T-6. Grab samples shall only be used for the analyses of volatile organics and cyanide. Monitoring for TCDD for the conventionally treated Title 22 recycled water shall be conducted quarterly during the first year after the effective date of this Order. If the results of all samples show TCDD to be not detected, TCDD monitoring for this Title 22 recycled water shall be reduced to annually and shall be performed during the month of August.

B. Monitoring Program for RO Treated Boiler Feedwater

Two sampling stations shall be established for the low-pressure and the high-pressure boiler feedwater, respectively. The following shall constitute the monitoring program for the boiler feedwater:

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis
Total waste flow	MGD	---	continuous
Turbidity [6]	NTU	---	continuous
pH	pH units	grab	weekly
Coliform	MPN/100ml	grab	weekly
Priority pollutants [5, 7]	µg/L	grab and 24-hr composite	annually
Radioactivity [7]	pCi/L	24-hr composite	annually

6. Turbidity shall be continuously monitored and recorded at a point after microfiltration. The average value recorded each day, the amount of time that 0.2 NTU is exceeded, and the incident of exceeding 0.5 NTU, if any, shall be reported.

7. These analyses shall be conducted for the low-pressure and the high-pressure boiler feedwater at the first year after the effective date of the Order. If the first analysis of the high-pressure boiler feedwater indicates complete compliance with the requirements, only the low-pressure boiler feedwater shall be analyzed thereafter.

IV. RECYCLED WATER USE MONITORING

The Producer shall submit a quarterly report, in a tabular form, the list of users serviced during the quarter, the amount of recycled water delivered to each user, and the use of the recycled water. A summary of these data shall be included in the annual report.

V. GENERAL MONITORING AND REPORTING REQUIREMENTS

A. The Producer shall summarize and arrange the monitoring data in tabular form to demonstrate compliance with requirements.

B. For every item where the requirements are not met, the Producer shall submit a statement of the actions undertaken or proposed which will bring the recycled water into full compliance with requirements at the earliest possible time, and submit a timetable for implementation of the corrective measures.

C. Monitoring reports shall be signed by either the principal Executive Officer or ranking elected official. A duly authorized representative of the aforementioned signatories may sign documents if:

a. The authorization is made in writing by the signatory;
b. The authorization specifies the representative as either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
c. The written authorization is submitted to the Executive Officer of this Regional Board.

D. The monitoring report shall contain the following completed declaration:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments thereto; and that, based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Executed on the __ day of _____ at _____
_____ Signature
_____ Title

E. The Producer shall retain records of all monitoring information, including all calibration and maintenance, monitoring instrumentation, and copies of all reports required by this Order, for a period of at least three(3) years from the date of sampling measurement, or report. This period may be extended by request of the Regional Board or State DOHS at any time and shall be extended during the course of any unresolved litigation regarding the regulated activity.

F. Records of monitoring information shall include:

a. The date, exact place, and time of sampling or measurements;
b. The individual(s) who performed the sampling or measurements;
c. The date(s) analyses were performed;
d. The individual(s) who performed the analysis;
e. The analytical techniques or methods used; and
f. The results of such analyses.

G. The Producer shall submit to the Regional Board, together with the first monitoring report required by this Order, a list of all chemicals and proprietary additives which could affect the quality of the recycled water, including quantities of each. Any subsequent changes in types and/or quantities shall be reported promptly.

An annual summary of the quantities of all chemicals, listed by both trade and chemical names, which are used in the treatment process shall be included in the annual report.

Ordered By:

Dennis A. Dickerson
Executive Officer

Date: March 29, 2001

APPENDIX K
SOIL & WATER RESPONSE # 9

SEPTEMBER 27, 2007 INTENT TO SERVE
LETTER FROM WEST BASIN
MUNICIPAL WATER DISTRICT

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

West Basin Municipal Water District
17140 S. Avalon Blvd. • Suite 210 • Carson, CA 90746-1296
Telephone 310-217-2411 • fax 310-217-2414

September 27, 2007

Mr. Roy Craft
El Segundo Power II LLC
301 Vista Del Mar
El Segundo, California 90245

Dear Mr. Craft:

Recycled Water Service to the El Segundo Power Redevelopment Project

West Basin Municipal Water District (West Basin) understands that the California Energy Commission has requested a new "Will Serve" letter for the El Segundo Power Redevelopment (ESPR) Project. West Basin is currently evaluating the most appropriate project delivery approach and cost impacts associated with serving the ESPR Project.

It is West Basin's intent to provide a "Will Serve" letter for the ESPR Project pending completion of our evaluation (January 2008) and finalization of a water purchase agreement between West Basin and El Segundo Power II LLC.

If you have any questions, please contact Paul Shoenberger, Assistant General Manager, at (310) 660-6218.

Sincerely,

Rich Nagel
General Manager

cc: George Piantka, NRG
Marc Kodis, NRG
Paul Shoenberger, WBMWD
Marc Serna, WBMWD
Phil Lauri, WBMWD
Rajen Budhia, WBMWD

APPENDIX L
SOIL & WATER RESPONSE # 10

LOS ANGELES COUNTY SANITATION DISTRICTS: LOADINGS FOR EACH CLASS OF LAND USE

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

TABLE 1

LOADINGS FOR EACH CLASS OF LAND USE

DESCRIPTION	UNIT OF MEASURE	FLOW (Gallons Per Day)	COD (Pounds Per Day)	SUSPENDED SOLIDS (Pounds Per Day)
RESIDENTIAL				
Single Family Home	Parcel	260	1.22	0.59
Duplex	Parcel	312	1.46	0.70
Triplex	Parcel	468	2.19	1.05
Fourplex	Parcel	624	2.92	1.40
Condominiums	Parcel	195	0.92	0.44
Single Family Home (reduced rate)	Parcel	156	0.73	0.35
Five Units or More	No. of Dwlg. Units	156	0.73	0.35
Mobile Home Parks	No. of Spaces	156	0.73	0.35
COMMERCIAL				
Hotel/Motel/Rooming House	Room	125	0.54	0.28
Store	1000 ft^2	100	0.43	0.23
Supermarket	1000 ft^2	150	2.00	1.00
Shopping Center	1000 ft^2	325	3.00	1.17
Regional Mall	1000 ft^2	150	2.10	0.77
Office Building	1000 ft^2	200	0.86	0.45
Professional Building	1000 ft^2	300	1.29	0.68
Restaurant	1000 ft^2	1,000	16.68	5.00
Indoor Theatre	1000 ft^2	125	0.54	0.28
Car Wash				
Tunnel - No Recycling	1000 ft^2	3,700	15.86	8.33
Tunnel - Recycling	1000 ft^2	2,700	11.74	6.16
Wand	1000 ft^2	700	3.00	1.58
Financial Institution	1000 ft^2	100	0.43	0.23
Service Shop	1000 ft^2	100	0.43	0.23
Animal Kennels	1000 ft^2	100	0.43	0.23
Service Station	1000 ft^2	100	0.43	0.23
Auto Sales/Repair	1000 ft^2	100	0.43	0.23
Wholesale Outlet	1000 ft^2	100	0.43	0.23
Nursery/Greenhouse	1000 ft^2	25	0.11	0.06
Manufacturing	1000 ft^2	200	1.86	0.70
Dry Manufacturing	1000 ft^2	25	0.23	0.09
Lumber Yard	1000 ft^2	25	0.23	0.09
Warehousing	1000 ft^2	25	0.23	0.09
Open Storage	1000 ft^2	25	0.23	0.09
Drive-in Theatre	1000 ft^2	20	0.09	0.05

TABLE 1
(continued)

LOADINGS FOR EACH CLASS OF LAND USE

DESCRIPTION	UNIT OF MEASURE	FLOW (Gallons Per Day)	COD (Pounds Per Day)	SUSPENDED SOLIDS (Pounds Per Day)
COMMERCIAL				
Night Club	1000 ft^2	350	1.50	0.79
Bowling/Skating	1000 ft^2	150	1.76	0.55
Club	1000 ft^2	125	0.54	0.27
Auditorium, Amusement	1000 ft^2	350	1.50	0.79
Golf Course, Camp, and Park (Structures and Improvements	1000 ft^2	100	0.43	0.23
Recreational Vehicle Park	No. of Spaces	55	0.34	0.14
Convalescent Home	Bed	125	0.54	0.28
Laundry	1000 ft^2	3,825	16.40	8.61
Mortuary/Cemetery	1000 ft^2	100	1.33	0.67
Health Spa, Gymnasium				
With Showers	1000 ft^2	600	2.58	1.35
Without Showers	1000 ft^2	300	1.29	0.68
Convention Center, Fairground, Racetrack, Sports Stadium/Arena	Average Daily Attendance	10	0.04	0.02
INSTITUTIONAL				
College/University	Student	20	0.09	0.05
Private School	1000 ft^2	200	0.86	0.45
Church	1000 ft^2	50	0.21	0.11

APPENDIX M
SOIL & WATER RESPONSE # 11

PRELIMINARY DRAFT ESC PLAN:

FIGURE 1: BEACH DELIVERY CORRIDOR

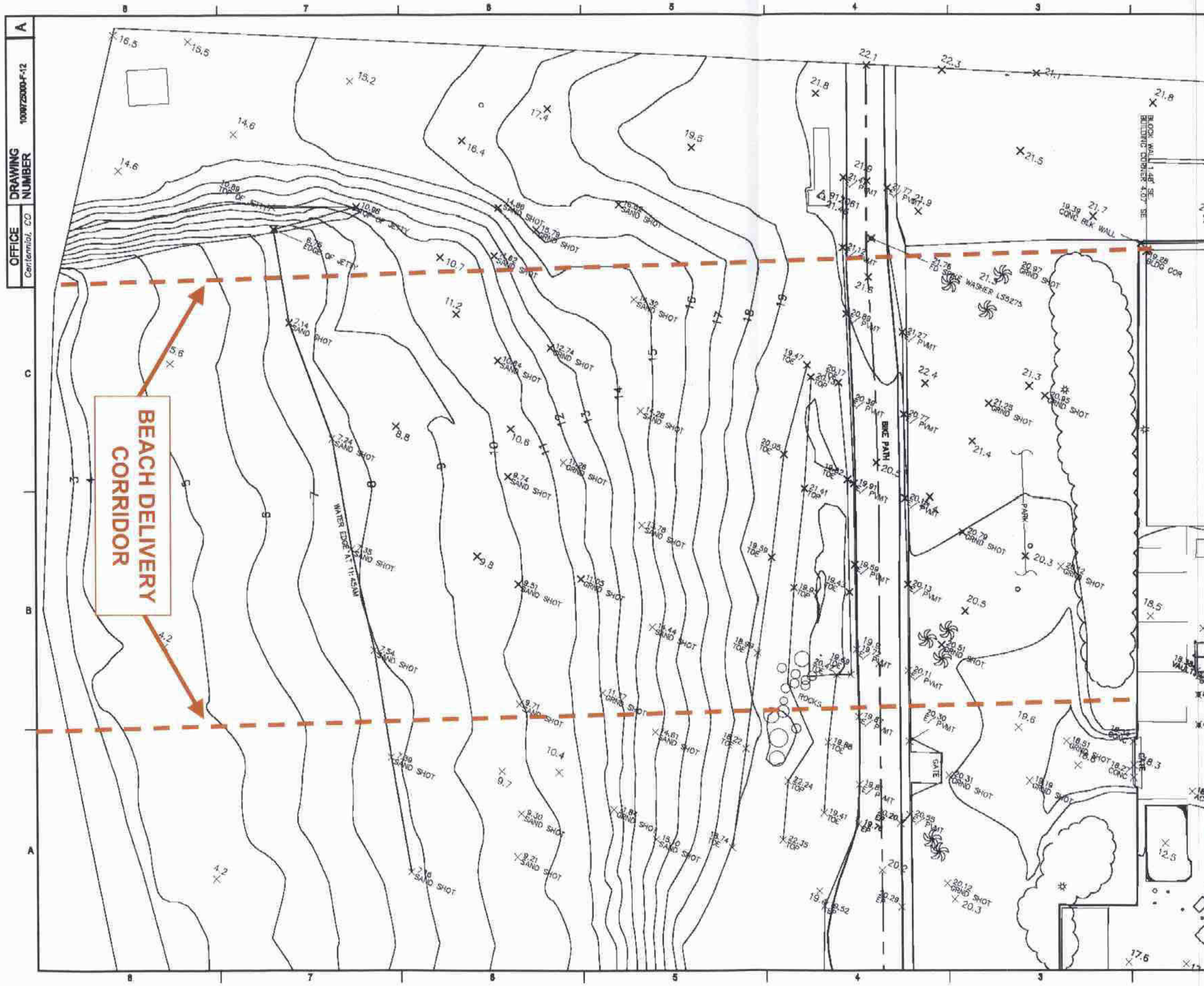
FIGURE 2: BARGE AND RAMP LOCATION

FIGURE 3: RAMP CONSTRUCTION

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

FIGURE 1: BEACH DELIVERY CORRIDOR



NOTES

1. For planning purposes only, not for construction.
2. Refer to Figures 2 and 3 for barge location and ramp configurations
3. Stormwater pollution control shall be in accordance with the Beach Delivery SWPPP
4. Loose sand used to construct and stabilize the beach landing ramp will be contained, either by placing the sand within bags or by containing the sand fill within an impervious barricade or structure;
5. The construction barge will be pulled off shore during periods of non-delivery. The maximum length of time that the construction barge will be grounded will be no more than 32 hours;
6. The Beach Delivery Site will be located as near as possible to the groin to minimize longshore tide activity
7. Impervious fiber matting will be placed between the constructed ramp and beach surface;
8. Fill sand shall be of beach nourishment quality with a medium, or larger, grain. Fill sand shall be analyzed in accordance with the Inland Testing Manual (ITM)
9. Only untreated, unused wood mats shall be used for the construction of the beach landing ramp; and,
10. All metal ramps, plates and/or any other metal material that may come in contract with the surf/tide shall be certified clean of all chemical residues, oils, greases and rust residues prior to use at the project site.
11. Equipment shall be maintained in accordance with the Beach Delivery Equipment and Maintenance Plan
12. Site housekeeping shall be in accordance with the Beach Delivery Housekeeping Plan
13. Refer to the Beach Delivery Mitigation Plan for post-construction beach restoration specifications

PLANT NORTH

ELEVATIONS SHOWN ARE MEAN SEA LEVEL
DATUM U.S.G.S. EQUAL ZERO
DESIGN HIGHEST TIDE ELEVATIONS + 6.0'

30 15 0 15 30 60 90 120
SCALE 1"=60' – 0"

REV	DESCRIPTION / ISSUE	DATE	APPROVED
A	ISSUED FOR REVIEW	8/24/07	XX

NRG Energy, Inc

Shaw Stone & Webster, Inc.

DESIGNED BY: MD	NRG EL SEGUNDO REPOWERING PROJECT EL SEGUNDO, CA
DRAWN BY: MEC	Figure 1: Beach Delivery Corridor Preliminary Draft ESC Plan
CHECKED BY: MD	

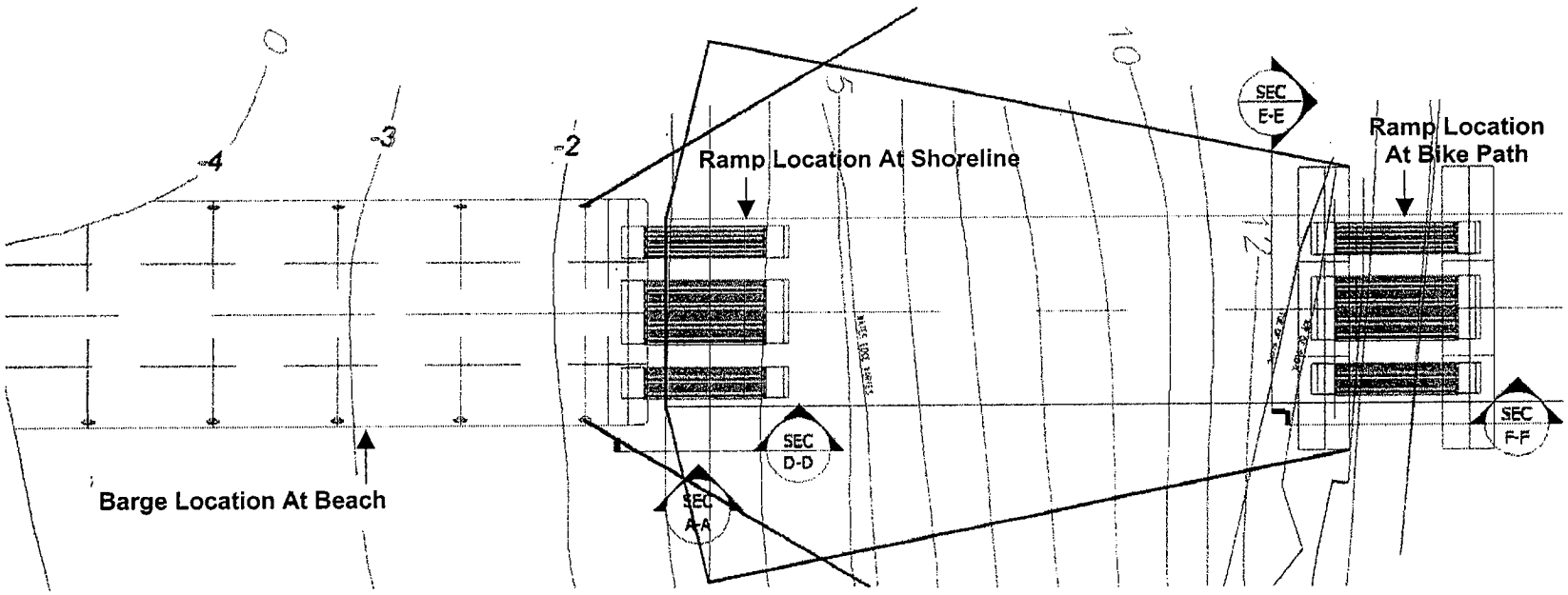
APPROVED BY:	DATE:	SCALE:	DRAWING NO.	REV. NO.
KK	09-20-07	1"=30'	100972S000-F-19	A

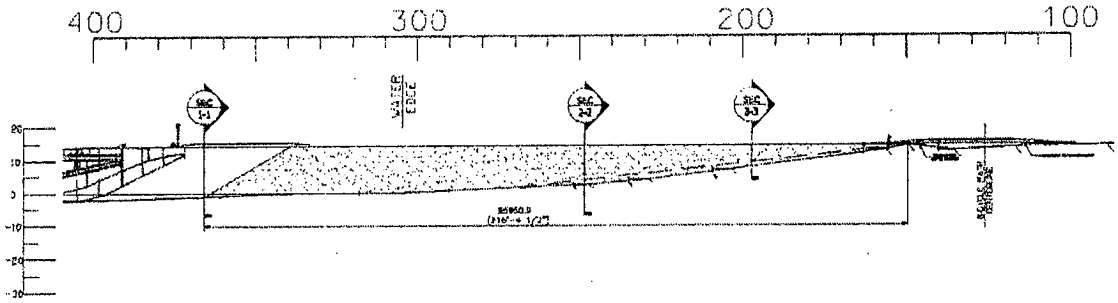
OFFICE: Centennial, CO | DRAWING NUMBER: 100972S000-F-12

FIGURE 2: BARGE AND RAMP LOCATION

RIGGING DRAWING
FOR PLANNING PURPOSES ONLY

PLAN VIEW





ELEVATION VIEW

CONFIDENTIAL

NRG POWER STATION
EL SEGUNDO, CA.

PROPOSED BEACH FILL DETAILS
OVER THE BEACH EQUIPMENT DELIVERY

Figure 2
Barge and Ramp Location
Preliminary Draft ESC Plan

FIGURE 3: RAMP CONSTRUCTION

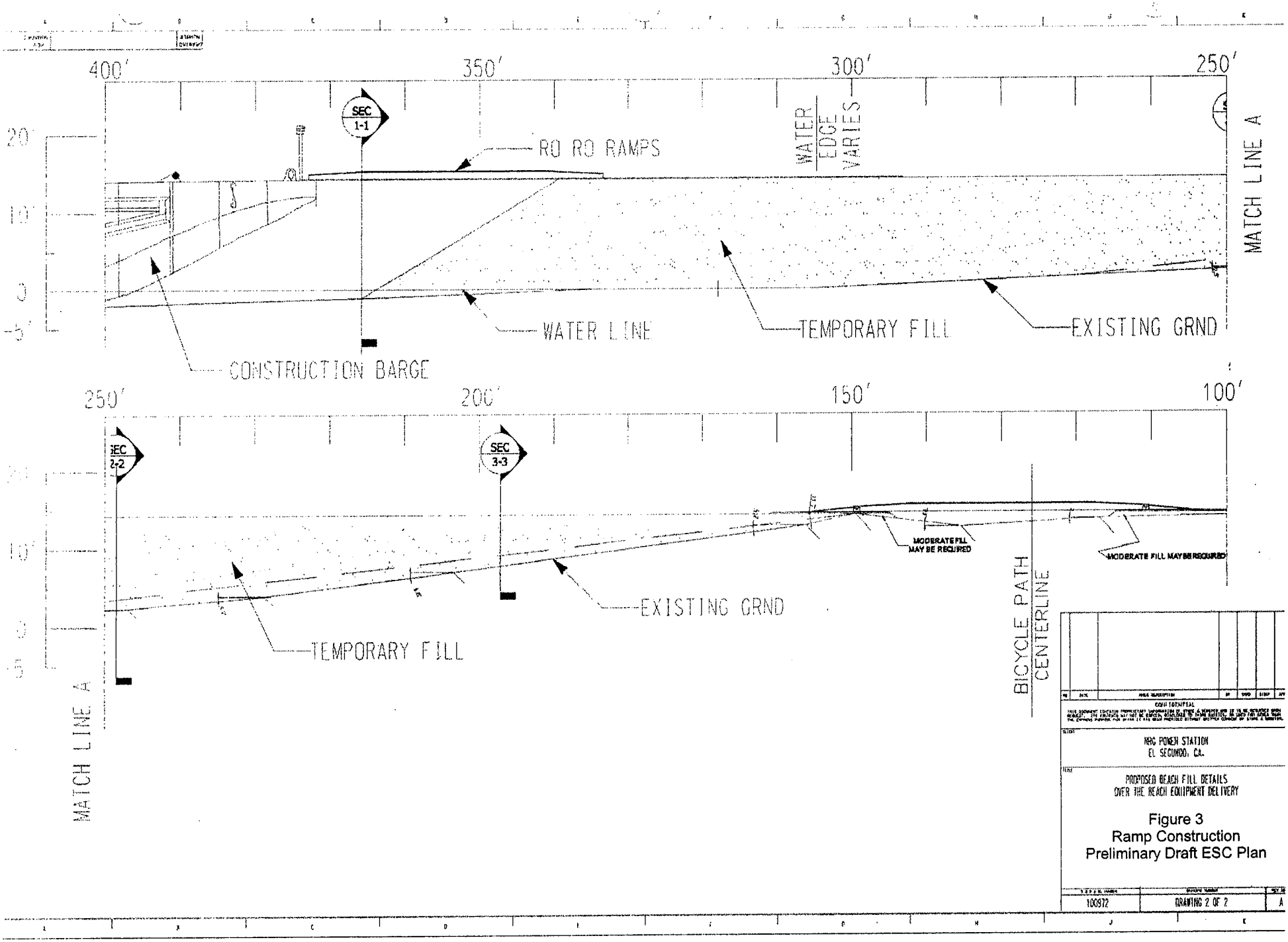


Figure 3
Ramp Construction
Preliminary Draft ESC Plan

APPENDIX N
VISUAL RESOURCES PLUME RESPONSE # 2

LETTER DATED JULY 12, 2007 DOCKETING
NEW VISUAL RESOURCES SECTION (SECTION 3.12)
WITH ENERGY COMMISSION

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

STOEL RIVES LLP
ATTORNEYS AT LAW

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main 916.447.0700
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www.stoel.com

SETH D. HILTON
Direct (916) 319-4749
sdhilton@stoel.com

July 12, 2007

BY HAND DELIVERY

Mr. Christopher Meyer
Compliance Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

CALIF ENERGY COMMISSION
00-AFC-14C
JUL 12 2007
RECEIVED IN DOCKETS

Re: EL SEGUNDO POWER REDEVELOPMENT PROJECT DOCKET 00-AFC-14C, PETITION TO AMEND REPLACEMENT OF SECTION 3.12 VISUAL RESOURCES

Dear Mr. Meyer:

On June 18, 2007, El Segundo Power II LLC ("ESP II") submitted a Petition to Amend ("PTA") the California Energy Commission's ("CEC") Final Decision for the El Segundo Power Redevelopment Project ("ESPR"). The recently completed air quality modeling and the corresponding "Application for a Determination of Compliance and Permit to Construct for the El Segundo Power Redevelopment Project (Facility ID No 115663)" was submitted to the South Coast Air Quality Management District on June 21, 2007. To that end, modifications to the PTA Section 3.12 text, tables, and figures have been necessary to reflect the change of the proposed stack height and diameter from the previously analyzed dimensions of 140 feet and 13 feet, respectively, to 210 feet and 20 feet, respectively. A stack height of 210 feet still will be shorter than the previously permitted project's stack height of 215 feet and shorter than the existing stack heights for Units 1 and 2 of approximately 230 feet.

Additionally, ESP II has delivered the PTA to various interested agencies and intervenors identified in the original proceeding. As such, in an effort to alleviate any potential for confusion, ESP II has taken the time to provide the replacement visual section to those same parties as well. I have included a list of entities and persons who have received these documents at the end of this letter. Please note that from this point forward, however, we will rely on the CEC to provide these persons with all documents pertinent to this proceeding if so requested by these individuals through the formal request process.

List of Agencies and Intervenors that received PTA from ESP II:
California Energy Commission
City of El Segundo (Kimberly Christensen)
City of Manhattan Beach (Laurie Jester)
California Coastal Commission (Tom Luster)
State Lands Commission (Alan Scott)
South Coast Air Quality Management District (Ken Coats)
Ms. Michelle Murphy and Mr. Robert Perkins
Santa Monica Baykeeper (Tom Ford)
Heal the Bay (Sarah Abramson)
LA Regional Water Quality Control Board (David Hung)
Surfrider Foundation

On behalf of ESP II, we look forward to your continued review of the Petition to Amend. If you have any questions or comments, please do not hesitate to contact me at (916) 447-0700.

Very truly,

Seth D. Hilton

SDH:kjh

Enclosures:

Revised Section 3.12 Visual Resources of the Petition to Amend Final Commission Decision for the El Segundo Power Redevelopment Project
Figure 3-12.1KOP Location Map
Figure 3-12.2a Existing View KOP 1
Figure 3-12.2b Final View KOP 1
Figure 3-12.3a Existing View KOP 2
Figure 3-12.3b Final View KOP 2
Figure 3-12.4a Existing View KOP 3
Figure 3-12.4b Final View KOP 3

Enclosures Continued:

Figure 3-12.5a Existing View KOP 4
Figure 3-12.5b Final View KOP 4
Figure 3-12.6a Existing View KOP 5
Figure 3-12.6b Final View KOP 5
Figure 3-12.7a Existing View KOP 6
Figure 3-12.7b Final View KOP 6
Figure 3-12.8a Existing View KOP 7
Figure 3-12.8b Final View KOP 7
Figure 3-12.9a Existing View KOP 8
Figure 3-12.9b Final View KOP 8

APPENDIX O
TRAFFIC & TRANSPORTATION RESPONSE # 1

SENSITIVITY ANALYSIS FOR LAYDOWN SITE

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

EXISTING COUNT DATA

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Vista Del Mar DATE: 5/22/2007 LOCATION: City of El Segundo

E-W STREET: Imperial Hwy DAY: TUESDAY PROJECT# 07-2267-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	0	2	0	1.5	0.5	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	255	92	9	41	3	1	1	0	42	0	50	495
7:15 AM	2	292	97	17	50	1	2	2	1	56	3	59	582
7:30 AM	2	260	113	25	43	2	4	5	0	49	1	73	577
7:45 AM	3	284	111	29	71	2	2	5	0	67	0	52	626
8:00 AM	2	268	117	30	62	0	1	1	0	52	3	44	580
8:15 AM	0	306	120	17	61	1	1	2	1	42	0	53	604
8:30 AM	2	296	109	22	76	3	1	3	5	43	0	38	598
8:45 AM	1	241	102	25	85	4	1	4	0	76	0	30	569
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 13	NT 2202	NR 861	SL 174	ST 489	SR 16	EL 13	ET 23	ER 7	WL 427	WT 7	WR 399	TOTAL 4631

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	7	1154	457	98	270	6	5	11	6	204	3	187	2408
PEAK HR. FACTOR:		0.950			0.917			0.611			0.828		0.962

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Vista Del Mar DATE: 5/22/2007 LOCATION: City of El Segundo

E-W STREET: Imperial Hwy DAY: TUESDAY PROJECT# 07-2267-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	0	2	0	1.5	0.5	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	198	19	22	197	0	1	1	2	70	0	11	521
4:15 PM	1	111	78	22	218	2	3	3	2	97	4	22	563
4:30 PM	1	102	70	28	166	2	3	11	2	97	1	28	511
4:45 PM	2	116	65	29	199	2	5	2	0	98	1	26	545
5:00 PM	3	115	84	28	203	3	3	2	1	112	0	40	594
5:15 PM	1	112	98	41	221	1	6	5	1	127	0	36	649
5:30 PM	2	141	63	30	250	2	4	5	1	118	1	29	646
5:45 PM	2	106	63	43	265	4	2	1	3	94	1	32	616
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 12	NT 1001	NR 540	SL 243	ST 1719	SR 16	EL 27	ET 30	ER 12	WL 813	WT 8	WR 224	TOTAL 4645

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	8	474	308	142	939	10	15	13	6	451	2	137	2505
PEAK HR. FACTOR:		0.936			0.874			0.708			0.905		0.965

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Vista Del Mar DATE: 5/22/2007 LOCATION: City of El Segundo

E-W STREET: Grand Ave DAY: TUESDAY PROJECT# 07-2267-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	0	1.5	0.5	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	280	8	7	60	0	0	0	0	11	0	13	380
7:15 AM	0	321	22	15	77	2	0	0	0	20	0	30	487
7:30 AM	1	368	30	15	94	0	1	0	0	27	1	50	587
7:45 AM	7	364	53	19	105	1	0	1	1	24	1	33	609
8:00 AM	0	388	38	24	119	3	1	0	0	22	0	36	631
8:15 AM	2	422	29	13	126	1	1	1	1	33	0	34	663
8:30 AM	2	357	33	16	104	3	2	2	0	16	1	32	568
8:45 AM	0	327	37	19	93	0	0	2	0	19	2	28	527
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 13	NT 2827	NR 250	SL 128	ST 778	SR 10	EL 5	ET 6	ER 2	WL 172	WT 5	WR 256	TOTAL 4452

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	10	1542	150	71	444	5	3	2	2	106	2	153	2490
PEAK HR. FACTOR:		0.939			0.890			0.583			0.837		0.939

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Vista Del Mar DATE: 5/22/2007 LOCATION: City of El Segundo

E-W STREET: Grand Ave DAY: TUESDAY PROJECT# 07-2267-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	0	1	0	1.5	0.5	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	274	35	25	236	0	0	1	0	32	0	11	614
4:15 PM	1	144	46	33	268	1	0	0	0	28	0	19	540
4:30 PM	1	153	44	25	272	4	0	2	3	44	0	28	576
4:45 PM	1	151	42	20	276	0	0	1	0	35	2	21	549
5:00 PM	0	166	34	33	269	0	1	1	0	40	1	26	571
5:15 PM	0	164	41	31	320	0	0	1	0	58	1	31	647
5:30 PM	0	151	42	23	349	1	0	1	0	38	2	29	636
5:45 PM	2	153	53	27	319	2	0	1	0	25	2	18	602
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 5	NT 1356	NR 337	SL 217	ST 2309	SR 8	EL 1	ET 8	ER 3	WL 300	WT 8	WR 183	TOTAL 4735

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	2	634	170	114	1257	3	1	4	0	161	6	104	2456
PEAK HR. FACTOR:		0.969			0.921			0.625			0.753		0.949

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Vista Del Mar DATE: 5/22/2007 LOCATION: City of El Segundo

E-W STREET: Gated dwy n/o 45th DAY: TUESDAY PROJECT# 07-2267-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	1	2	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	288			68	0	0		0				357
7:15 AM	0	334			88	1	0		2				425
7:30 AM	0	420			105	2	0		1				528
7:45 AM	2	399			135	0	0		0				536
8:00 AM	0	444			126	1	0		0				571
8:15 AM	0	456			125	1	0		0				582
8:30 AM	0	401			122	2	0		0				525
8:45 AM	0	356			154	1	0		0				511
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	3	3098	0	0	923	8	0	0	3	0	0	0	4035

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	2	1719	0	0	491	4	0	0	1	0	0	0	2217
PEAK HR. FACTOR:		0.944			0.917			0.250			0.000		0.952

CONTROL: No Signal

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Vista Del Mar DATE: 5/22/2007 LOCATION: City of El Segundo

E-W STREET: Gated dwy n/o 45th DAY: TUESDAY PROJECT# 07-2267-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	1	2	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	2	221			305	0	3		6				537
4:15 PM	3	205			245	1	2		5				461
4:30 PM	0	211			224	0	2		4				441
4:45 PM	1	205			278	0	1		2				487
5:00 PM	0	199			354	0	3		2				558
5:15 PM	0	196			368	1	1		1				567
5:30 PM	0	224			356	0	0		0				580
5:45 PM	0	205			445	0	1		3				654
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	6	1666	0	0	2575	2	13	0	23	0	0	0	4285

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	0	824	0	0	1523	1	5	0	6	0	0	0	2359
PEAK HR. FACTOR:		0.920			0.856			0.550			0.000		0.902

CONTROL: No Signal

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Pershing Dr DATE: 5/22/2007 LOCATION: City of El Segundo

E-W STREET: Imperial Hwy DAY: TUESDAY PROJECT# 07-2267-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.3	0.3	1.3	2	2	0	1	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		0	1	121	1	15	36	69	0	1	83	197	524
7:15 AM		0	1	132	1	24	39	78	0	0	90	227	592
7:30 AM		0	0	207	0	17	41	83	1	1	108	294	752
7:45 AM		1	1	179	0	19	49	99	1	3	100	328	780
8:00 AM		0	0	201	1	17	43	92	1	4	88	233	680
8:15 AM		0	1	159	0	14	44	101	1	1	63	254	638
8:30 AM		0	1	137	0	14	70	76	0	1	79	234	612
8:45 AM		0	0	148	0	18	53	91	0	0	87	206	603
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 1	NR 5	SL 1284	ST 3	SR 138	EL 375	ET 689	ER 4	WL 11	WT 698	WR 1973	TOTAL 5181

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	1	2	746	1	67	177	375	4	9	359	1109	2850
PEAK HR. FACTOR:		0.375			0.908			0.933			0.857		0.913

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Pershing Dr DATE: 5/22/2007 LOCATION: City of El Segundo

E-W STREET: Imperial Hwy DAY: TUESDAY PROJECT# 07-2267-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.3	0.3	1.3	2	2	0	1	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	0	0	213	1	29	17	77		0	65	151	553
4:15 PM	0	0	3	219	0	39	28	80		0	84	146	599
4:30 PM	1	2	4	193	0	43	35	76		0	81	136	571
4:45 PM	0	0	0	176	0	44	17	81		0	87	161	566
5:00 PM	2	0	1	226	0	46	26	86		2	107	152	648
5:15 PM	0	0	0	188	0	55	30	79		0	103	172	627
5:30 PM	0	0	6	185	0	40	24	77		0	85	148	565
5:45 PM	0	1	1	199	0	31	29	58		0	94	129	542
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 3	NT 3	NR 15	SL 1599	ST 1	SR 327	EL 206	ET 614	ER 0	WL 2	WT 706	WR 1195	TOTAL 4671

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	3	2	5	783	0	188	108	322	0	2	378	621	2412
PEAK HR. FACTOR:		0.357			0.892			0.960			0.910		0.931

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Vermont Ave DATE: 09/18/2007 LOCATION: City of Torrance

E-W STREET: West 190th St DAY: TUESDAY PROJECT# 07-2439-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	3	0	1	3	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	23	124	24	13	116	41	28	113	53	54	176	27	792
7:15 AM	34	156	30	8	123	61	44	138	43	61	230	37	965
7:30 AM	43	180	41	23	148	67	53	173	53	76	252	29	1138
7:45 AM	43	194	50	20	157	68	50	174	74	87	285	36	1238
8:00 AM	32	178	38	27	213	72	51	229	90	95	258	34	1317
8:15 AM	31	157	34	15	179	75	37	244	65	86	256	38	1217
8:30 AM	29	149	34	16	171	58	47	326	52	85	175	39	1181
8:45 AM	42	135	23	28	175	70	46	273	64	74	244	22	1196
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 277	NT 1273	NR 274	SL 150	ST 1282	SR 512	EL 356	ET 1670	ER 494	WL 618	WT 1876	WR 262	TOTAL 9044

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	135	678	156	78	720	273	185	973	281	353	974	147	4953
PEAK HR. FACTOR:		0.844			0.858			0.846			0.903		0.940

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Vermont Ave DATE: 09/18/2007 LOCATION: City of Torrance

E-W STREET: West 190th St DAY: TUESDAY PROJECT# 07-2439-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	3	0	1	3	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	34	199	57	21	122	31	55	292	71	45	149	62	1138
4:15 PM	25	145	52	20	131	31	68	289	78	41	161	53	1094
4:30 PM	31	204	80	23	151	40	62	326	67	61	138	66	1249
4:45 PM	24	192	57	23	161	25	77	341	94	58	148	67	1267
5:00 PM	31	219	86	20	174	22	68	315	64	43	171	64	1277
5:15 PM	24	210	72	24	199	28	64	311	87	77	184	67	1347
5:30 PM	28	218	81	25	181	36	60	327	80	70	200	65	1371
5:45 PM	22	157	69	14	229	27	56	264	92	67	183	52	1232
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 219	NT 1544	NR 554	SL 170	ST 1348	SR 240	EL 510	ET 2465	ER 633	WL 462	WT 1334	WR 496	TOTAL 9975

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	107	839	296	92	715	111	269	1294	325	248	703	263	5262
PEAK HR. FACTOR:		0.924			0.914			0.922			0.906		0.960

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Normandie Ave DATE: 09/18/2007 LOCATION: City of Torrance

E-W STREET: West 190th St DAY: TUESDAY PROJECT# 07-2439-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	3	0	1	3	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	14	155	41	22	102	226	45	212	18	12	246	28	1121
7:15 AM	26	256	37	18	184	304	58	252	45	12	326	28	1546
7:30 AM	20	317	41	15	310	327	75	344	45	26	414	34	1968
7:45 AM	15	312	25	23	351	320	64	384	65	24	370	23	1976
8:00 AM	21	310	35	23	297	306	68	346	51	20	344	17	1838
8:15 AM	13	202	35	23	249	193	79	586	64	19	319	21	1803
8:30 AM	15	161	46	29	156	173	75	493	63	22	182	18	1433
8:45 AM	14	126	24	40	180	158	84	549	67	20	302	21	1585
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 138	NT 1839	NR 284	SL 193	ST 1829	SR 2007	EL 548	ET 3166	ER 418	WL 155	WT 2503	WR 190	TOTAL 13270

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	69	1141	136	84	1207	1146	286	1660	225	89	1447	95	7585
PEAK HR. FACTOR:		0.890			0.878			0.745			0.860		0.960

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Normandie Ave DATE: 09/18/2007 LOCATION: City of Torrance

E-W STREET: West 190th St DAY: TUESDAY PROJECT# 07-2439-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	3	0	1	3	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	27	297	15	17	249	124	119	490	37	26	309	52	1762
4:15 PM	20	231	24	23	169	98	133	480	67	24	310	53	1632
4:30 PM	19	300	26	19	184	107	108	469	62	16	253	77	1640
4:45 PM	24	284	31	18	200	153	124	495	68	28	199	74	1698
5:00 PM	20	320	14	19	292	159	161	552	53	20	332	104	2046
5:15 PM	20	410	34	15	415	250	175	693	88	37	494	85	2716
5:30 PM	21	418	24	22	310	281	220	742	76	74	517	68	2773
5:45 PM	26	321	23	21	319	277	167	644	54	40	413	73	2378
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	177	2581	191	154	2138	1449	1207	4565	505	265	2827	586	16645

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	87	1469	95	77	1336	967	723	2631	271	171	1756	330	9913
PEAK HR. FACTOR:		0.890			0.875			0.873			0.856		0.894

CONTROL: Signalized

LOS ANALYSIS SHEETS

Existing Conditions

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 VISTA DEL MAR/IMPERIAL HIGHWAY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.639
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Prot+Permit			Split Phase			Split Phase		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	1 0	1	1 1	0 0	1
Volume Module:												
Base Vol:	7	1154	457	98	270	6	5	11	6	204	3	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	1154	457	98	270	6	5	11	6	204	3	187
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	8	1282	0	109	300	7	6	12	7	227	3	208
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	1282	0	109	300	7	6	12	7	227	3	208
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	8	1282	0	109	300	7	6	12	7	227	3	208
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.96	0.04	1.00	1.00	1.00	1.97	0.03	1.00
Final Sat.:	1800	3600	1800	1800	3522	78	1800	1800	1800	3548	52	1800
Capacity Analysis Module:												
Vol/Sat:	0.00	0.36	0.00	0.06	0.09	0.09	0.00	0.01	0.00	0.06	0.06	0.12
Crit Moves:		****		****				****				****

EX AM Wed Sep 26, 2007 16:20:02 Page 4-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 VISTA DEL MAR/GRAND AVE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.765
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	0 0	1! 0	0	1 1	0 0	1
Volume Module:												
Base Vol:	10	1542	150	71	444	5	3	2	2	106	2	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	1542	150	71	444	5	3	2	2	106	2	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	11	1713	167	79	493	6	3	2	2	118	2	170
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	1713	167	79	493	6	3	2	2	118	2	170
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	1713	167	79	493	6	3	2	2	118	2	170
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.82	0.18	1.00	1.98	0.02	0.43	0.29	0.28	1.96	0.04	1.00
Final Sat.:	1800	3281	319	1800	3560	40	771	514	514	3533	67	1800
Capacity Analysis Module:												
Vol/Sat:	0.01	0.52	0.52	0.04	0.14	0.14	0.00	0.00	0.00	0.03	0.03	0.09
Crit Moves:		****		****				****				****

EX AM Wed Sep 26, 2007 16:20:03 Page 5-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 VISTA DEL MAR/POWERPLANT DWY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.631
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	2	1719	0	0	491	4	0	0	1	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	1719	0	0	491	4	0	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	2	1910	0	0	546	4	0	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	1910	0	0	546	4	0	0	1	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	1910	0	0	546	4	0	0	1	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1800	3600	0	0	3600	1800	0	0	1800	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.53	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:		****		****			****					

EX AM Wed Sep 26, 2007 16:20:03 Page 6-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 PERSHING DR/IMPERIAL HIGHWAY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.841
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	1 1	0 0	1	2 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	0	1	2	746	1	67	177	375	4	9	359	1109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	2	746	1	67	177	375	4	9	359	1109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	1	2	829	1	74	197	417	4	10	399	1232
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	2	829	1	74	197	417	4	10	399	1232
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1	2	829	1	74	197	417	4	10	399	1232
OvlAdjVol:						0						817
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.33	0.67	1.99	0.01	1.00	2.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	0	600	1200	3595	5	1800	3600	3562	38	1800	3600	1800
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.23	0.23	0.04	0.05	0.12	0.12	0.01	0.11	0.68
OvlAdjV/S:						0.00						0.45
Crit Moves:		****			****		****					****

EX AM Wed Sep 26, 2007 16:20:03 Page 7-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #15 NORMANDIE AVE/190TH ST

Cycle (sec): 100 Critical Vol./Cap.(X): 1.571
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 120 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	2 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	69	1141	136	84	1207	1146	286	1660	225	89	1447	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	1141	136	84	1207	1146	286	1660	225	89	1447	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	77	1268	151	93	1341	1273	318	1844	250	99	1608	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	1268	151	93	1341	1273	318	1844	250	99	1608	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	1268	151	93	1341	1273	318	1844	250	99	1608	106
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.79	0.21	1.00	2.00	1.00	1.00	2.64	0.36	1.00	2.82	0.18
Final Sat.:	1425	2546	304	1425	2850	1425	1425	3765	510	1425	4012	263
Capacity Analysis Module:												
Vol/Sat:	0.05	0.50	0.50	0.07	0.47	0.89	0.22	0.49	0.49	0.07	0.40	0.40
Crit Volume:	77					1273	318				571	
Crit Moves:	****					****	****				****	

EX AM Wed Sep 26, 2007 16:20:03 Page 8-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #16 VERMONT AVE/190TH ST

Cycle (sec): 100 Critical Vol./Cap.(X): 1.094
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 120 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	135	678	156	78	720	273	185	973	281	353	974	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	678	156	78	720	273	185	973	281	353	974	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	150	753	173	87	800	303	206	1081	312	392	1082	163
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	753	173	87	800	303	206	1081	312	392	1082	163
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	753	173	87	800	303	206	1081	312	392	1082	163
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.63	0.37	1.00	1.45	0.55	1.00	2.33	0.67	1.00	2.61	0.39
Final Sat.:	1425	2317	533	1425	2066	784	1425	3317	958	1425	3714	561
Capacity Analysis Module:												
Vol/Sat:	0.11	0.33	0.33	0.06	0.39	0.39	0.14	0.33	0.33	0.28	0.29	0.29
Crit Volume:	150				552				464	392		
Crit Moves:	****				****				****	****		

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 VISTA DEL MAR/IMPERIAL HIGHWAY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.547
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Prot+Permit				Split Phase				Split Phase			
Rights:	Ignore				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 2	0	1	1	0 1	1	0	1	0 1	0	1	1	1 0	0	1
Volume Module:																
Base Vol:	8	474	308		142	939	10		15	13	6		451	2	137	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	8	474	308		142	939	10		15	13	6		451	2	137	
User Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.00		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	9	527	0		158	1043	11		17	14	7		501	2	152	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	9	527	0		158	1043	11		17	14	7		501	2	152	
PCE Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	9	527	0		158	1043	11		17	14	7		501	2	152	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	2.00	1.00		1.00	1.98	0.02		1.00	1.00	1.00		1.99	0.01	1.00	
Final Sat.:	1800	3600	1800		1800	3562	38		1800	1800	1800		3584	16	1800	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.15	0.00		0.09	0.29	0.29		0.01	0.01	0.00		0.14	0.14	0.08	
Crit Moves:	****					****			****					****		

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EX PM Wed Sep 26, 2007 16:20:11 Page 4-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 VISTA DEL MAR/GRAND AVE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.557
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 1	1	0	0	1 0	0	0	1	1 0	0	1
Volume Module:																
Base Vol:	2	634	170		114	1257	3		1	4	0		161	6	104	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	2	634	170		114	1257	3		1	4	0		161	6	104	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	2	704	189		127	1397	3		1	4	0		179	7	116	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	2	704	189		127	1397	3		1	4	0		179	7	116	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	2	704	189		127	1397	3		1	4	0		179	7	116	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.58	0.42		1.00	1.99	0.01		0.20	0.80	0.00		1.93	0.07	1.00	
Final Sat.:	1800	2839	761		1800	3591	9		360	1440	0		3471	129	1800	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.25	0.25		0.07	0.39	0.39		0.00	0.00	0.00		0.05	0.05	0.06	
Crit Moves:	****					****				****					****	

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EX PM Wed Sep 26, 2007 16:20:11 Page 5-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 VISTA DEL MAR/POWERPLANT DWY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.577
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 38 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2	0 0	0	0	2	0 1	0	0	1!	0 0	0	0	0	0 0
Volume Module:																
Base Vol:	0	824	0	0	1523	1	5	0	6	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	824	0	0	1523	1	5	0	6	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	0	916	0	0	1692	1	6	0	7	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	0	916	0	0	1692	1	6	0	7	0	0	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	0	916	0	0	1692	1	6	0	7	0	0	0				
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800				
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.45	0.00	0.55	0.00	0.00	0.00				
Final Sat.:	1800	3600	0	0	3600	1800	818	0	982	0	0	0				
Capacity Analysis Module:																
Vol/Sat:	0.00	0.25	0.00	0.00	0.47	0.00	0.00	0.00	0.01	0.00	0.00	0.00				
Crit Moves:	****				****				****							

EX PM Wed Sep 26, 2007 16:20:11 Page 6-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 PERSHING DR/IMPERIAL HIGHWAY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.523
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Ovl				Include				Ovl			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	1	1	0	0 1	2	0	1	1 0	1	0	2	0 1
Volume Module:																
Base Vol:	3	2	5	783	0	188	108	322	0	2	378	621				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	3	2	5	783	0	188	108	322	0	2	378	621				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	3	2	6	870	0	209	120	358	0	2	420	690				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	3	2	6	870	0	209	120	358	0	2	420	690				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	3	2	6	870	0	209	120	358	0	2	420	690				
OvlAdjVol:						149						255				
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800				
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Lanes:	0.30	0.20	0.50	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00				
Final Sat.:	540	360	900	3600	0	1800	3600	3600	0	1800	3600	1800				
Capacity Analysis Module:																
Vol/Sat:	0.01	0.01	0.01	0.24	0.00	0.12	0.03	0.10	0.00	0.00	0.12	0.38				
OvlAdjV/S:						0.08						0.14				
Crit Moves:	****			****			****					****				

EX PM Wed Sep 26, 2007 16:20:11 Page 7-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #15 NORMANDIE AVE/190TH ST

Cycle (sec): 100 Critical Vol./Cap.(X): 1.928
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 120 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	2 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	87	1469	95	77	1336	967	723	2631	271	171	1756	330
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	1469	95	77	1336	967	723	2631	271	171	1756	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	97	1632	106	86	1484	1074	803	2923	301	190	1951	367
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	1632	106	86	1484	1074	803	2923	301	190	1951	367
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	1632	106	86	1484	1074	803	2923	301	190	1951	367
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.88	0.12	1.00	2.00	1.00	1.00	2.72	0.28	1.00	2.53	0.47
Final Sat.:	1425	2677	173	1425	2850	1425	1425	3876	399	1425	3599	676
Capacity Analysis Module:												
Vol/Sat:	0.07	0.61	0.61	0.06	0.52	0.75	0.56	0.75	0.75	0.13	0.54	0.54
Crit Volume:	97					1074	803				773	
Crit Moves:	****					****	****				****	

EX PM Wed Sep 26, 2007 16:20:11 Page 8-1

El Segundo Power Plant TIA (JN 10105408)
Existing Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #16 VERMONT AVE/190TH ST

Cycle (sec): 100 Critical Vol./Cap.(X): 1.128
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 120 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	107	839	296	92	715	111	269	1294	325	248	703	263
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	839	296	92	715	111	269	1294	325	248	703	263
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	119	932	329	102	794	123	299	1438	361	276	781	292
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	932	329	102	794	123	299	1438	361	276	781	292
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	932	329	102	794	123	299	1438	361	276	781	292
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.48	0.52	1.00	1.73	0.27	1.00	2.40	0.60	1.00	2.18	0.82
Final Sat.:	1425	2107	743	1425	2467	383	1425	3417	858	1425	3111	1164
Capacity Analysis Module:												
Vol/Sat:	0.08	0.44	0.44	0.07	0.32	0.32	0.21	0.42	0.42	0.19	0.25	0.25
Crit Volume:		631		102				600		276		
Crit Moves:		****		****				****		****		

Forecast Existing With Project Construction Conditions

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 VISTA DEL MAR/IMPERIAL HIGHWAY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.639
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Permitted				Prot+Permit				Split Phase				Split Phase			
Rights:	Ignore				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1 0	2 0	1		1 0	1 1	0		1 0	1 0	1		1 1	0 0	1	
Volume Module:																
Base Vol:	7	1154	457		98	270	6		5	11	6		204	3	187	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	7	1154	457		98	270	6		5	11	6		204	3	187	
Added Vol:	0	0	35		0	0	0		0	0	0		35	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	7	1154	492		98	270	6		5	11	6		239	3	187	
User Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.00		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	8	1282	0		109	300	7		6	12	7		266	3	208	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	8	1282	0		109	300	7		6	12	7		266	3	208	
PCE Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	8	1282	0		109	300	7		6	12	7		266	3	208	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	2.00	1.00		1.00	1.96	0.04		1.00	1.00	1.00		1.98	0.02	1.00	
Final Sat.:	1800	3600	1800		1800	3522	78		1800	1800	1800		3555	45	1800	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.36	0.00		0.06	0.09	0.09		0.00	0.01	0.00		0.07	0.07	0.12	
Crit Moves:		****			****					****					****	

EX AM WITH PROJ Wed Sep 26, 2007 16:41:45 Page 5-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 VISTA DEL MAR/GRAND AVE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.776
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1 0	1 1	0		1 0	1 1	0		0 0	1! 0	0		1 1	0 0	1	
Volume Module:																
Base Vol:	10	1542	150		71	444	5		3	2	2		106	2	153	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	10	1542	150		71	444	5		3	2	2		106	2	153	
Added Vol:	0	35	0		0	35	0		0	0	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	10	1577	150		71	479	5		3	2	2		106	2	153	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	11	1752	167		79	532	6		3	2	2		118	2	170	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	11	1752	167		79	532	6		3	2	2		118	2	170	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	11	1752	167		79	532	6		3	2	2		118	2	170	
Saturation Flow Module:																
Sat/Lane:	1800	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800	
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	1.83	0.17		1.00	1.98	0.02		0.43	0.29	0.28		1.96	0.04	1.00	
Final Sat.:	1800	3287	313		1800	3563	37		771	514	514		3533	67	1800	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.53	0.53		0.04	0.15	0.15		0.00	0.00	0.00		0.03	0.03	0.09	
Crit Moves:		****			****					****					****	

EX AM WITH PROJ Wed Sep 26, 2007 16:41:45 Page 6-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 VISTA DEL MAR/POWERPLANT DWY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.652
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 45 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	2	1719	0	0	491	4	0	0	1	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	1719	0	0	491	4	0	0	1	0	0	0
Added Vol:	0	0	0	0	0	35	35	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	1719	0	0	491	39	35	0	1	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	2	1910	0	0	546	43	39	0	1	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	1910	0	0	546	43	39	0	1	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	2	1910	0	0	546	43	39	0	1	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.97	0.00	0.03	0.00	0.00	0.00
Final Sat.:	1800	3600	0	0	3600	1800	1750	0	50	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.53	0.00	0.00	0.15	0.02	0.02	0.00	0.02	0.00	0.00	0.00
Crit Moves:		****		****			****					

EX AM WITH PROJ Wed Sep 26, 2007 16:41:45 Page 7-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
AM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 PERSHING DR/IMPERIAL HIGHWAY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.841
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 1	0	1 1	0 0	1	2 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	0	1	2	746	1	67	177	375	4	9	359	1109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	2	746	1	67	177	375	4	9	359	1109
Added Vol:	0	0	0	0	0	0	0	35	0	0	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	2	746	1	67	177	410	4	9	394	1109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	1	2	829	1	74	197	456	4	10	438	1232
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	2	829	1	74	197	456	4	10	438	1232
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1	2	829	1	74	197	456	4	10	438	1232
OvlAdjVol:						0						817
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.33	0.67	1.99	0.01	1.00	2.00	1.98	0.02	1.00	2.00	1.00
Final Sat.:	0	600	1200	3595	5	1800	3600	3565	35	1800	3600	1800
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.23	0.23	0.04	0.05	0.13	0.13	0.01	0.12	0.68
OvlAdjV/S:						0.00						0.45
Crit Moves:		****			****		****					****

EX AM WITH PROJ Wed Sep 26, 2007 16:41:45 Page 8-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #15 NORMANDIE AVE/190TH ST

Cycle (sec): 100 Critical Vol./Cap.(X): 1.571
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 120 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	2 0	1	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	69	1141	136	84	1207	1146	286	1660	225	89	1447	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	1141	136	84	1207	1146	286	1660	225	89	1447	95
Added Vol:	0	0	0	0	0	0	0	35	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	1141	136	84	1207	1146	286	1695	225	89	1447	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	77	1268	151	93	1341	1273	318	1883	250	99	1608	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	1268	151	93	1341	1273	318	1883	250	99	1608	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	77	1268	151	93	1341	1273	318	1883	250	99	1608	106
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.79	0.21	1.00	2.00	1.00	1.00	2.65	0.35	1.00	2.82	0.18
Final Sat.:	1425	2546	304	1425	2850	1425	1425	3774	501	1425	4012	263
Capacity Analysis Module:												
Vol/Sat:	0.05	0.50	0.50	0.07	0.47	0.89	0.22	0.50	0.50	0.07	0.40	0.40
Crit Volume:	77					1273	318				571	
Crit Moves:	****					****	****				****	

EX AM WITH PROJ Wed Sep 26, 2007 16:41:45 Page 9-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
AM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #16 VERMONT AVE/190TH ST

Cycle (sec): 100 Critical Vol./Cap.(X): 1.103
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 120 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	135	678	156	78	720	273	185	973	281	353	974	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	135	678	156	78	720	273	185	973	281	353	974	147
Added Vol:	0	0	0	0	0	0	0	35	0	0	0	35
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	678	156	78	720	273	185	1008	281	353	974	182
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	150	753	173	87	800	303	206	1120	312	392	1082	202
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	753	173	87	800	303	206	1120	312	392	1082	202
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	753	173	87	800	303	206	1120	312	392	1082	202
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.63	0.37	1.00	1.45	0.55	1.00	2.35	0.65	1.00	2.53	0.47
Final Sat.:	1425	2317	533	1425	2066	784	1425	3343	932	1425	3602	673
Capacity Analysis Module:												
Vol/Sat:	0.11	0.33	0.33	0.06	0.39	0.39	0.14	0.34	0.34	0.28	0.30	0.30
Crit Volume:	150				552				477	392		
Crit Moves:	****				****				****	****		

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 VISTA DEL MAR/IMPERIAL HIGHWAY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T		R	L	T		R	L	T		R	L	T		R
Control:	Permitted				Prot+Permit				Split Phase				Split Phase			
Rights:	Ignore				Include				Include				Include			
Min. Green:	0	0		0	0	0		0	0	0		0	0	0		0
Lanes:	1	0	2	0 1	1	0	1	1 0	1	0	1	0 1	1	1	0	0 1
Volume Module:																
Base Vol:	8	474		308	142	939		10	15	13		6	451	2		137
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	8	474		308	142	939		10	15	13		6	451	2		137
Added Vol:	0	0		35	0	0		0	0	0		0	35	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	8	474		343	142	939		10	15	13		6	486	2		137
User Adj:	1.00	1.00		0.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.00	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	9	527		0	158	1043		11	17	14		7	540	2		152
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	9	527		0	158	1043		11	17	14		7	540	2		152
PCE Adj:	1.00	1.00		0.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		0.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	9	527		0	158	1043		11	17	14		7	540	2		152
Saturation Flow Module:																
Sat/Lane:	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800		1800
Adjustment:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	1.00	2.00		1.00	1.00	1.98		0.02	1.00	1.00		1.00	1.99	0.01		1.00
Final Sat.:	1800	3600		1800	1800	3562		38	1800	1800		1800	3585	15		1800
Capacity Analysis Module:																
Vol/Sat:	0.00	0.15		0.00	0.09	0.29		0.29	0.01	0.01		0.00	0.15	0.15		0.08
Crit Moves:	****					****			****					****		

EX PM WITH PROJ Wed Sep 26, 2007 16:41:54 Page 5-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 VISTA DEL MAR/GRAND AVE

Cycle (sec): 100 Critical Vol./Cap.(X): 0.568
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T		R	L	T		R	L	T		R	L	T		R
Control:	Permitted				Permitted				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0		0	0	0		0	0	0		0	0	0		0
Lanes:	1	0	1	1 0	1	0	1	1 0	0	1	0	0 0	1	1	0	0 1
Volume Module:																
Base Vol:	2	634		170	114	1257		3	1	4		0	161	6		104
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	2	634		170	114	1257		3	1	4		0	161	6		104
Added Vol:	0	35		0	0	35		0	0	0		0	0	0		0
PasserByVol:	0	0		0	0	0		0	0	0		0	0	0		0
Initial Fut:	2	669		170	114	1292		3	1	4		0	161	6		104
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	2	743		189	127	1436		3	1	4		0	179	7		116
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	2	743		189	127	1436		3	1	4		0	179	7		116
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
FinalVolume:	2	743		189	127	1436		3	1	4		0	179	7		116
Saturation Flow Module:																
Sat/Lane:	1800	1800		1800	1800	1800		1800	1800	1800		1800	1800	1800		1800
Adjustment:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Lanes:	1.00	1.59		0.41	1.00	1.99		0.01	0.20	0.80		0.00	1.93	0.07		1.00
Final Sat.:	1800	2871		729	1800	3592		8	360	1440		0	3471	129		1800
Capacity Analysis Module:																
Vol/Sat:	0.00	0.26		0.26	0.07	0.40		0.40	0.00	0.00		0.00	0.05	0.05		0.06
Crit Moves:	****					****				****						****

EX PM WITH PROJ Wed Sep 26, 2007 16:41:54 Page 6-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 VISTA DEL MAR/POWERPLANT DWY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.598
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	0	0 0	2 0	1	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	824	0	0	1523	1	5	0	6	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	824	0	0	1523	1	5	0	6	0	0	0
Added Vol:	0	0	0	0	0	35	35	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	824	0	0	1523	36	40	0	6	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	916	0	0	1692	40	44	0	7	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	916	0	0	1692	40	44	0	7	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	916	0	0	1692	40	44	0	7	0	0	0
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	0.87	0.00	0.13	0.00	0.00	0.00
Final Sat.:	1800	3600	0	0	3600	1800	1565	0	235	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.25	0.00	0.00	0.47	0.02	0.02	0.00	0.03	0.00	0.00	0.00
Crit Moves:	****				****				****			

EX PM WITH PROJ Wed Sep 26, 2007 16:41:54 Page 7-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
PM Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 PERSHING DR/IMPERIAL HIGHWAY

Cycle (sec): 100 Critical Vol./Cap.(X): 0.523
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 90 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1 1	0 0	1	2 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	3	2	5	783	0	188	108	322	0	2	378	621
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	2	5	783	0	188	108	322	0	2	378	621
Added Vol:	0	0	0	0	0	0	0	35	0	0	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	2	5	783	0	188	108	357	0	2	413	621
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	3	2	6	870	0	209	120	397	0	2	459	690
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	2	6	870	0	209	120	397	0	2	459	690
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	2	6	870	0	209	120	397	0	2	459	690
OvlAdjVol:						149						255
Saturation Flow Module:												
Sat/Lane:	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.30	0.20	0.50	2.00	0.00	1.00	2.00	2.00	0.00	1.00	2.00	1.00
Final Sat.:	540	360	900	3600	0	1800	3600	3600	0	1800	3600	1800
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.24	0.00	0.12	0.03	0.11	0.00	0.00	0.13	0.38
OvlAdjV/S:						0.08						0.14
Crit Moves:	****			****			****					****

EX PM WITH PROJ Wed Sep 26, 2007 16:41:54 Page 8-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #15 NORMANDIE AVE/190TH ST

Cycle (sec): 100 Critical Vol./Cap.(X): 1.928
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 120 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	2 0	1	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	87	1469	95	77	1336	967	723	2631	271	171	1756	330
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	1469	95	77	1336	967	723	2631	271	171	1756	330
Added Vol:	0	0	0	0	0	0	0	35	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	1469	95	77	1336	967	723	2666	271	171	1756	330
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	97	1632	106	86	1484	1074	803	2962	301	190	1951	367
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	1632	106	86	1484	1074	803	2962	301	190	1951	367
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	1632	106	86	1484	1074	803	2962	301	190	1951	367
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.88	0.12	1.00	2.00	1.00	1.00	2.72	0.28	1.00	2.53	0.47
Final Sat.:	1425	2677	173	1425	2850	1425	1425	3881	394	1425	3599	676
Capacity Analysis Module:												
Vol/Sat:	0.07	0.61	0.61	0.06	0.52	0.75	0.56	0.76	0.76	0.13	0.54	0.54
Crit Volume:	97					1074	803				773	
Crit Moves:	****					****	****				****	

EX PM WITH PROJ Wed Sep 26, 2007 16:41:54 Page 9-1

El Segundo Power Plant TIA (JN 10105408)
Existing With Project Construction Conditions
PM Peak Hour

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #16 VERMONT AVE/190TH ST

Cycle (sec): 100 Critical Vol./Cap.(X): 1.137
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 120 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 1	0	1 0	1 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	107	839	296	92	715	111	269	1294	325	248	703	263
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	107	839	296	92	715	111	269	1294	325	248	703	263
Added Vol:	0	0	0	0	0	0	0	35	0	0	0	35
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	839	296	92	715	111	269	1329	325	248	703	298
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	119	932	329	102	794	123	299	1477	361	276	781	331
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	932	329	102	794	123	299	1477	361	276	781	331
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	119	932	329	102	794	123	299	1477	361	276	781	331
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.48	0.52	1.00	1.73	0.27	1.00	2.41	0.59	1.00	2.11	0.89
Final Sat.:	1425	2107	743	1425	2467	383	1425	3435	840	1425	3002	1273
Capacity Analysis Module:												
Vol/Sat:	0.08	0.44	0.44	0.07	0.32	0.32	0.21	0.43	0.43	0.19	0.26	0.26
Crit Volume:		631		102				613		276		
Crit Moves:		****		****				****		****		

APPENDIX P
VISUAL RESOURCES RESPONSE # 1

SEPTEMBER 27, 2007 CITY OF EL SEGUNDO
COMMENTS TO PETITION TO AMEND

RESPONSES TO CEC DATA REQUESTS, SET 2

EL SEGUNDO POWER REDEVELOPMENT
00-AFC-14C
PETITION TO AMEND

City of El Segundo

Department of Planning and Building Safety

Elected Officials:

Kelly McDowell, Mayor
Eric Busch, Mayor Pro Tem
Jim Boulgarides, Council Member
Carl Jacobson, Council Member
Bill Fisher, Council Member
Cindy Mortesen, City Clerk
Ralph Lanphere, City Treasurer

Appointed Officials:

Jeffrey Stewart, City Manager
Mark D. Hensley, City Attorney

Department Directors:

Bill Crowe, Assistant City Manager
Deborah Cullen, Interim, Finance
Bob Hyland, Interim Human Resources
Kevin Smith, Fire Chief
Debra Brighton, Library Services
Gary Chicots, Planning and Building Safety
David Cummings, Police Chief
Steven Finton, Public Works
Richard Brunette, Recreation & Parks

www.elsegundo.org

September 27, 2007

Stephen D. Munro, Compliance Project Manager
California Energy Commission
1516 Ninth Street, MS-200
Sacramento, CA 95814

Subject: **Petition to Amend the California Energy Commission's Final Decision for the El Segundo Power Redevelopment Project (00-AFC-14)**

Dear. Mr. Munro:

On June 15, 2007, El Segundo Power II LLC submitted its Petition to Amend the California Energy Commission's (CEC) Final Decision approving the El Segundo Power Redevelopment Project ("ESPR"). The City of El Segundo has received a request from El Segundo Power II LLC to provide a discussion of the proposed change to the project's design and conditions of certification VIS-1 and VIS-4 in response to your Data Request Set Two letter dated August 29, 2007. This letter is in response to the proposed change to the project's design and conditions of certification for VIS-1 and VIS-4 only and the City of El Segundo reserves the right to respond to other issues and further amendment requests if they occur.

Data Request:

1. Upon review of the request to modify VIS-1 and to eliminate the requirement to install architectural screening of all industrial equipment below elevation 125 feet (below the outlet dampers on the facility's exhaust stacks) based upon the petition exhibits (Key Observation Point photographs) and analysis, the City of El Segundo has no objection to the proposed amendment as long as the exposed surface of the industrial equipment has a non-reflective, non-glare finish. The surface of the structures should be painted if the material has a reflective surface consistent with the requirements in VIS-5.

350 Main Street, El Segundo, California 90245-3813
Phone (310) 524-2380 FAX (310) 322-4167

2. Upon review of the request to modify VIS-4 and to eliminate the requirement to install architectural screening to cover the outer framework of the HRSG structures of the new proposed Units 5 through 7 and reduce visibility of the mechanical equipment at elevations between 10 and 125 feet of the superstructures based upon the petition exhibits (Key Observation Point photographs) and analysis, the City of El Segundo has no objection to the proposed amendment as long as the exposed surface of the outer framework of the HRSG structures and mechanical equipment has a non-reflective, non-glare finish. The surface of the structures should be painted if the material has a reflective surface consistent with the requirements in VIS-5.

Thank you for your consideration. Should you have any questions, please call me at (310) 524-2345 or Kimberly Christensen, Planning Manager at (310) 524-2340.

Sincerely,

Gary Chicots, Director
Planning and Building Safety Department

cc: George L. Piantka, P.E., Regional Environmental Manager
Jeff Stewart, City Manager
Mark Hensley, City Attorney
Kimberly Christensen, Planning Manager

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