STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
FOR
CHEVRON PRODUCTS COMPANY
(El Segundo Refinery)

NPDES NO. CA0000337
PUBLIC NOTICE NO. 06-071

FACILITY ADDRESS	FACILITY MAILING ADDRESS
Chevron U.S.A. Inc. 324 West El Segundo Blvd. El Segundo, CA 90245 Contact: Wayne Ishimoto, Environmental Coordinator Phone: 310-615-5976	Chevron U.S.A. Inc. 324 West El Segundo Blvd. El Segundo, CA 90245 Contact: Gary Yesavage, General Manager Phone: 310-615-5000

I. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Written comments regarding this tentative Order must be submitted to the Regional Board staff no later than 5:00 p.m. on November 30, 2006, in order to be evaluated by

Board staff and included in the Board's agenda folder. The Regional Board Chair may exclude from the record written materials received after this date. (See Cal. Code Regs., tit. 23, §648.4).

B. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	December 14, 2006
Time:	9:00 A.M.
Location:	Metropolitan Water District of Southern California 700 North Alameda Street, Los Angeles, California

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is http://www.waterboards.ca.gov/losangeles where you can access the current agenda for changes in dates and locations.

C. Waste Discharge Requirements Appeals

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
Office of the Chief Counsel
ATTN: Elizabeth Miller Jennings, Senior Staff Counsel
1001 I Street, 22nd Floor
Sacramento, CA 95814

D. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special conditions, comments received, and other information are on file and may be inspected at 320 West 4th Street, Suite 200, Los Angeles, California 90013, at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Los Angeles Regional Board by calling (213) 576-6600.

E. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility,

and provide a name, address, and phone number.

II. INTRODUCTION

Chevron Products Company (hereinafter Chevron or Discharger) operates the El Segundo Refinery, which discharges treated wastewater under waste discharge requirements contained in Order No. 97-112, adopted on August 25, 1997. Order No. 97-112 serves as a permit under the National Pollutant Discharge Elimination System (NPDES No. CA0000337).

Chevron filed a report of waste discharge and applied for renewal of its waste discharge requirements and National Pollutant Discharge Elimination System Permit (NPDES) on December 11, 2001. On August 26, 2003, a site visit was conducted to observe operations and collect additional data to develop the proposed permit limits and conditions.

III. DESCRIPTION OF FACILITY AND WASTE DISCHARGE

A. Facility Description

Chevron has operated the El Segundo Refinery since 1911. It manufactures the following products from crude oil: reformulated gasoline, jet fuel, diesel fuel, fuel oils, liquefied petroleum gases, fuel blending components, coke, ammonia, and molten sulfur. Manufacturing processes used at the refinery include atmospheric and vacuum distillation, catalytic cracking, alkylation, isomerization, coking, catalytic reforming, hydrogenation, sulfur recovery, chemical treating, and product blending. Although the refinery has a rated crude throughput capacity of 380,000 barrels per operating day (bpod), due to market projections, Chevron only plans to process a maximum throughput of 275,000 bpod with the long-term average throughput estimated at 265,000 bpod. In 2001, the highest single day throughput rate was 292,000 bpod, and the highest weekly average rate was 267,000 bpod.

B. Treatment Facility Description

The El Segundo Refinery's wastewater treatment facility consists of two separate drain and treatment systems: the "unsegregated" and the "segregated" system.

Unsegregated System

The unsegregated system is normally used for non-process wastewater including cooling tower blowdown, steam condensate, a portion of the refinery's recovery well groundwater, and other wastewater streams containing free oil removed with primary treatment only. This system is also used to collect and treat storm water. The unsegregated system includes a gravity separator and an induced air flotation (IAF) unit.

The purpose of the separator is to provide a means of separation of oil and solids from water with residence time, gravity and internal design features. The water flows from the separator to an IAF. The IAF removes additional oil and solids by a combination of chemical flocculation and induced air flotation. The chemical additive, polymer,

attaches to solid particles and oil globules in the wastewater to form a coagulated floc. The suspended floc particles (including attached oil and solids) adhere to air bubbles created by the mechanical aerator/mixers forming foamy floc. This mass floats to the waters surface and is removed by skimmers.

If the water meets the refinery's specifications, the unsegregated water is ready for discharge after the separator and IAF treatment. If it does not meet the specifications it s sent to one of two diversion tanks for additional IAF treatment.

Segregated System

The segregated system is normally used to treat petroleum process wastewater containing emulsified oils and a portion of the refinery's recovery well groundwater. It is comprised of gravity separators, a dissolved air flotation (DAF) unit, and activated sludge units for secondary (biological) treatment. Effluent from the segregated system that does not meet the established specifications may receive additional solids removal from an auxiliary off-specification DAF unit, or routed to auxiliary effluent diversion tanks for additional IAF treatment. The auxiliary effluent diversion tanks are available for handling off-specification process wastewater from either of the two systems, in addition to rainfall run-off.

A different separator than the one used by the unsegregated system is the initial step for clean-up of process wastewater. It flows from the separator to one of two tanks. The wastewater is fed from these tanks to a DAF. A DAF works on the same premise as an IAF. Oil and solids attach to tiny bubbles which rise to the surface and are then skimmed off. Where an IAF has air introduced into the unit to create the bubbles, a DAF uses an air-saturated water stream that recycles from the unit to create the same affect.

After the process wastewater receives separator and DAF treatment, the mechanical removal of oil and solids is completed which concludes the "primary" treatment of this system.

The water from the DAF then flows directly to the Activated Sludge Unit (ASU) for biological treatment. In the ASU, the wastewater (food) mixes with oxygen, nutrients, and microorganisms which treat the wastewater. The result is clean water, along with microorganism growth and reproduction. The microorganisms floc together and are removed in a clarifier, which are sent back to the ASU, with a portion sent to the Hyperion per an industrial waste discharge permit. This keeps the microorganism population at an optimum state. The water from the clarifier is now clean and ready for discharge. If it does not meet the required water specifications, it will receive further "primary" or "secondary" treatment.

The two systems can be operated such that flow from either system can be diverted to effluent diversion tankage or to the other system, where if needed, the diverted flow can receive alternative or additional treatment. This operational treatment flexibility provides control such that final effluent quality is maintained in compliance with requirements.

C. Waste Discharge

1. The Effluent Treatment Plant discharges an average flow of 7.0 million gallons per day (mgd) of treated wastewater, with up to 8.8 mgd during dry weather and up to 27 mgd during wet weather, to Santa Monica Bay. The wastewater is comprised of refinery wastewater (6.45 mgd), petroleum hydrocarbon contaminated shallow well groundwater (up to 2.34 mgd), other intermittence sources (4 mgd), and rainfall runoff, which may be contaminated (14 mgd).

2. Wastes that might be discharged to Santa Monica Bay include:

   a. Refinery wastewater including both process and non-process wastewater.

   b. Groundwater generated from a groundwater remediation project required by Regional Board Cleanup and Abatement Order No. 88-055 directing Chevron to extract and treat hydrocarbon-contaminated groundwater from the Old Dune Sand Aquifer underlying Chevron's facility. Flow weighted analyses of the extracted groundwater, i.e., after separation of petroleum free products, show that it is similar to the refinery's wastewater quality, but has lower concentration of total suspended solids (TSS), chemical oxygen demand (COD), phenolics, and oil and grease. The extracted groundwater is treated together with the refinery wastewater in the Effluent Treatment Plant.

   c. Reclaimed water from West Basin Municipal Water District (WBMWD) is injected into the aquifer to create a groundwater mound that prevents the liquid hydrocarbon (LHC) plume from migrating offsite and directs the flow of the LHC to the extraction wells.

   d. Storm water runoff at the El Segundo Refinery is collected and treated in the refinery's unsegregated drain system along with non-process wastewater. The refinery has two storage tanks for storm water with a combined capacity of approximately 14 million gallons. If required for the total effluent stream to meet limitations contained in this Order, storm water runoff can be diverted to auxiliary diversion tanks for IAF treatment. Based on the information provided by the Discharger, 89.3% of the rainfall run-off is considered contaminated as defined in 40 CFR Part 419.11(g).

   e. Other intermittence sources. Chevron also operates numerous land-based marketing terminals and gas stations, which generate washdown water, hydrotest water, tank water draws, tank rinsate, and other wastewater similar in quality to that typically generated by the El Segundo Refinery. These Chevron facilities and the Chevron Pipeline Company may occasionally send non-hazardous wastewater batch shipments and recoverable oil-water mixtures to the refinery for oil recovery, treatment, and discharge. In addition, the refinery may occasionally receive ship ballast water or tank rinsates from its marine terminal. 40 CFR §§419.23(c) and 419.24(c) [BAT/BCT] provide for incremental pollutant

allowances for ballast and similar wastes.

D. Discharge Outfall

1. The discharge occurs through an outfall line located approximately 2,200 feet south of Grand Avenue that extends approximately 3,500 feet offshore with its terminus at a depth of 42 feet (Latitude 33° 54' 29", Longitude 118° 26' 17").

2. In 1994, Chevron constructed the 3,200-foot outfall line extension consisting of a 60-inch nominal diameter, high density polyethylene pipe that was fitted to the existing 300 foot outfall line. A diffuser was attached at the end of the extension. The extended outfall provides a minimum dilution ratio of 80 parts of seawater to one part of effluent (80:1). The previous outfall was about 300 feet offshore and had a minimum dilution ratio of 38 parts of seawater to one part of effluent (38:1).

E. Description of Effluent

1. The Chevron's treated discharges consist of the following:

Parameter	Daily Average	Monthly Maximum	Monthly Minimum
Dry Weather Total Flow, mgd	7.06	19	10.6
Refinery & marketing, mgd	6.5		
Groundwater, mgd	0.56		
Storm water, mgd			14

2. The Table below summarizes effluent monitoring data during the periods from 1999 through 2002. Average values represent the average of actual detected values only, except where all values were non-detects.

Parameter	Units	Monthly Average	Daily Maximum
CBOD	mg/L	<23	31
	lbs/day	<1406	2270
COD	mg/L	157	392
	lbs/day	10218	18868
Total Suspended Solids	mg/L	<23	38
	lbs/day	<1437	2829
Ammonia as N	mg/L	6.8	11.1
	lbs/day	390	644
pH	Std. units	8.0	8.8
Total Chlorine Residual	mg/L	ND	ND
Temperature		38	37
Oil and Grease*	mg/L	<7.6	13

Parameter	Units	Monthly Average	Daily Maximum
	lbs/day	<735	1397
Sulfides as S	mg/L	---	0.053
	lbs/day	---	3.0
Arsenic	µg/L	36	36
	lbs/day	2.18	2.18
Cadmium	µg/L	<1.29	<1.29
	lbs/day	<0.07	<0.07
Total Chromium	µg/L	<5.79	<5.79
	lbs/day	<0.48	<0.48
Copper	µg/L	23	23
	lbs/day	<1.94	<1.94
Lead	µg/L	<11.92	<11.92
	lbs/day	<0.99	<0.99
Mercury	µg/L	ND	ND
Nickel	µg/L	23	23
	lbs/day	1.52	1.52
Selenium	µg/L	178	178
	lbs/day	9.15	9.15
Silver	µg/L	<1.43	<1.43
	lbs/day	<0.08	<0.08
Zinc	µg/L	221	221
	lbs/day	17.81	17.81
Cyanide	µg/L	<78	<78
	lbs/day	<5.0	<5.0
Total Phenols	µg/L	72	--
	lbs/day	6	--
Benzene	µg/L	<6.97	--
	lbs/day	<0.4	
Bromoform	µg/L	4.4	--
	lbs/day	0.3	
Chlorodibromomethane	µg/L	6.9	--
	lbs/day	0.4	
Chloroform	µg/L	8.3	--
	lbs/day	0.5	
Dichlorobromomethane	µg/L	8.0	--
	lbs/day	0.5	
Toluene	µg/L	<5.38	--
	lbs/day	<0.3	
All others pollutants	µg/L	ND	--

F. Use of Recycled Water and Water Conservation

1. The El Segundo Refinery currently uses recycled water from the West Basin Municipal Water District (WBMWD) for both irrigation and cooling towers. WBMWD applies tertiary treatment to the secondary treated effluent from the City of Los Angeles' Hyperion Treatment Plant, which would have otherwise been discharged to Santa Monica Bay (in the same general location where Chevron discharges). The refinery's daily consumption of recycled water for irrigation purposes is approximately 200,000 gallons per day (gpd). Additionally, the cooling towers use approximately 3,000,000 gpd of nitrified recycled water: The low and high pressure boiler feeds consume approximately 1,230,000 gpd and 2,570,000 gpd of recycled water, respectively.

2. Depending on the quality of the recycled water received from the WBMWD, the refinery may incur significant additional contaminant loading to its effluent treatment system. Due to the evaporation in the cooling towers, contaminants from the recycled make-up water are concentrated in the cooling tower blowdown, which is normally discharged to the unsegregated drain system for treatment. California Senate Bill (SB) 1196, (which amended Water Code section 13142.5) allows dischargers to adjust their discharge requirements to reflect the additional contaminants in recycled water not normally present in potable water, provided that certain provisions have been met. No credits are granted because the discharge effluent limitations are based on higher dilution credit approved by the State Board.

IV. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the Order are based on the requirements and authorities contained in the following:

A. The federal Clean Water Act (CWA). The federal Clean Water Act requires that any point source discharges of pollutants to a water of the United States must be done in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality.

B. Code of Regulations, Title 40 (40 CFR) – Protection of Environment, Chapter I, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-125, Part 133, Secondary Treatment Regulations, and Part 419, Subpart B, Effluent Guidelines for cracking subcategory. These CWA regulations provide effluent limits for certain dischargers and establish procedures for NPDES permitting, including how to establish effluent limits for certain pollutants discharged by Chevron.

C. The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21. 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. In

order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

D. On June 13, 1994, the Regional Board adopted a revised Basin Plan. The Basin Plan contains water quality objectives and beneficial uses for inland surface waters and for the Pacific Ocean. The Santa Monica Bay watershed includes the Santa Monica Bay and the land area that drains naturally into the Bay. It is located in the Los Angeles Coastal Plains and has nine sub-watershed areas that are grouped from 28 catchment basins based on their distinctive geographical (topographical and land use) characteristics.

E. Chevron is located in the EL Segundo/Los Angeles International Airport (LAX) area sub-watershed. The El Segundo/LAX area sub-watershed extends from Playa del Rey to the north, Westchester, the LAX area of the City of Los Angeles, the City of El Segundo, the area adjacent to Chevron refinery and adjacent area, and a small portion of the City of Manhattan Beach to the south.

F. The Regional Board has designated several beneficial uses for water bodies in the Santa Monica Bay watershed and sub-watersheds. The major beneficial uses identified for the El Segundo/LAX sub-watershed area are use of seawater as industrial cooling water for power generation, use of the Bay to transport crude and refined petroleum, and use of seawater for swimming, boating, and sport fishing.

G. The beneficial uses designated for water bodies in the El Segundo/LAX sub-watershed are:

(Dockweiler Beaches – Hydrologic Unit 405.12)

- Potential Uses: spawning, reproduction, and/or early development.

- Existing Uses: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, and wild habitat.

(Nearshore Zone)

- Existing Uses: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, wild habitat, preservation of biological habitats, rare, threatened, or endangered species, and migration of aquatic organisms.

(Offshore Zone)

- Existing Uses: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, wild habitat, migration of aquatic organisms, and spawning, reproduction, and/or early development.

H. 40 CFR section 122.44(d)(vi)(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial uses. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that water quality-based effluent limits (WQBELs) may be set based on USEPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

I. State and Federal antibacksliding and antidegradation policies require that Regional Board actions to protect the water quality of a water body and to ensure that the waterbody will not be further degraded. The antibacksliding provisions are specified in section 402(o) of the CWA and in the Title 40 of the Code of Federal Regulations (40 CFR), section 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions where effluent limitations may be relaxed.

J. Effluent limitations are established in accordance with sections 301, 304, 306, and 307 of the federal CWA, and amendments thereto. These requirements, as they are met, will maintain and protect the beneficial uses of the Santa Monica Bay.

K. Existing waste discharge requirements contained in Board Order No. 97-112, adopted by the Regional Board on August 15, 1997. In some cases, permit conditions (effluent limits and other special conditions) established in the existing waste discharge requirements have been carried over to this permit.

V. REGULATORY BASIS FOR EFFLUENT LIMITATIONS

A. Clean Water Act Requirements

1. The CWA requires point source discharges to control the amount of conventional, nonconventional, and toxic pollutants that are discharged into the waters of the United States. The control of the discharge of pollutants is established through NPDES permits that contain effluent limitations and standards. The CWA establishes two principal bases for effluent limitations. First, dischargers are required to meet technology-based effluent limitations that reflect the best controls available considering costs and economic impact. Second, they are required to meet water quality based effluent limitations (WQBELs) that are developed to protect applicable designated uses of the receiving water.

2. The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) is based on the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and nonconventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and nonconventional pollutants.

c. Best conventional pollutant control technology (BCT) is a standard for the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the "cost reasonableness" of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.

d. New source performance standards (NSPS) that represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

3. The CWA requires EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BCT, BAT, and NSPS. Section 402(a)(1) of the CWA and 40 CFR 125.3 of the NPDES regulations authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern.

4. The Chevron El Segundo Refinery is classified under the cracking subcategory of the Petroleum Refining Point Sources Category. Therefore, the USEPA Effluent Guidelines and Standards for Petroleum Refining Point Sources (40 CFR §419 Subpart B) based on BAT, BPT, and BCT, whichever is more stringent, are applicable to the refinery's discharges.

5. If a reasonable potential exists for pollutants in a discharge to exceed water quality standards, WQBELs are also required under 40 CFR 122.44(d)(1)(i). WQBELs are established after determining that technology-based limitations are not stringent enough to ensure that state water quality standards are met for the receiving water. WQBELs are based on the designated use of the receiving water, water quality criteria necessary to support the designated uses, and the state's antidegradation policy. For discharges to the oceans, the Ocean Plan establishes the effluent limitations and water quality objectives, and general provisions for implementing the Plan.

B. Impaired Water Bodies in 303 (d) List

1. Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303(d)-listed water bodies and pollutants, the Regional Board plans to develop and adopt TMDLs that will specify WLAs for point sources and load allocations (Las) for

non-point sources, as appropriate.

2. The USEPA approved the State's 303(d) list of impaired water bodies on July 25, 2003. Certain receiving waters in the Los Angeles and Ventura County watersheds do not fully support beneficial uses and therefore have been classified as impaired on the 2002 303(d) list and have been scheduled for TMDL development.

3. The 303(d) list for the Discharger's receiving water includes the following impairments:

   Santa Monica Bay offshore/nearshore:
   - chlordane,
   - DDT (tissue and sediment),
   - PAHs (sediment),
   - PCBs (tissue and sediment),
   - sediment toxicity,
   - fish consumption advisory, and
   - debris.

   Santa Monica Bay beach:
   - high coliform count, and
   - beach closures

C. Santa Monica Bay Beaches Bacteria Total Maximum Daily Loads (TMDLs).

The Regional Board has adopted two TMDLs to reduce bacteria at Santa Monica Bay beaches during dry and wet weather. The Regional Board adopted the Dry Weather and Wet Weather TMDLs on January 24, 2002 and December 12, 2002, respectively (Resolution Nos. 2002-004 and 2002-022). These TMDLs were approved by the State Water Board, State Office of Administrative Law and USEPA Region 9 and became effective on July 15, 2003. In these TMDLs, waste load allocations (WLAs) are expressed as the number of sample days at a shoreline monitoring site that may exceed the single sample targets for total coliform, fecal coliform and enterococcus identified under "Numeric Target" in the TMDLs. Waste load allocations are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection at beaches. Although Chevron was not assigned a WLA in this TMDL, because of the potential to contribute bacteria from its biological treatment system, Chevron must be provided with effluent limits which do not result in any exceedence of the water quality standards.

D. Specific Rationale for Each Numerical Effluent Limitation

1. Effluent Limitation for conventional and nonconventional pollutants in the proposed permit limits are based on the previous permit limits, USEPA Effluent Guidelines and Standards for Petroleum Refining Point Sources under the cracking subcategory (40 CFR Part 419 Subpart B), Best Professional Judgement (BPJ), and Ocean Plan Objectives. Mass limits are based on the actual flow discharged. The permitted maximum discharge is 27 mgd during wet weather.

2. Effluent limitations are imposed on all pollutants in accordance with one or more of the following criteria:

   a. BPJ, or

   b. Pollutant concentration has been detected in the effluent discharge, or

   c. Pollutant concentration has been detected in the receiving water per Table C of the Ocean Plan or the 303(d) list for Santa Monica Bay, or

   d. Pollutant concentration and mass effluent limits were included in the previous permit (anti-backsliding), or

   e. Basin Plan.

3. Effluent Limitations for Toxic Constituents concentrations are based on Ocean Plan water quality objectives (WQOs) listed in Table B, and background concentration listed in Table C, using a dilution ratio, 80:1. These limits reflect the most recent revisions to the Ocean Plan in 2001.

E. Effluent Limitations

1. Effluent Limitations for Conventional and Nonconventional Pollutants:

Constituents	Units	Effluent Limitations [5]	
		Monthly Average[4]	Daily Maximum[2]
BOD_5 20°C[1]	mg/L	30	60
	lbs/day	1,976	3,952
Suspended solids	mg/L	30	60
	lbs/day	1,976	3,952
COD	mg/L	264	528
	lbs/day	17,597	35,194
Oil and grease	mg/L	12	24
	lbs/day	733	1,466
Sulfide	µg/L	195	390
	lbs/day	13	26

2. Effluent Limitations for Toxic Constituents:

a. Effluent Limitations for the Protection of Marine Aquatic Life

Constituents	Units	Effluent Limitations [5]		Performance Goal[6]
		6-Month Median[3][4]	Daily Maximum [2]	6-Month Median
Arsenic	µg/L	408	2352	198
	Lbs/day	23.8	137.3	
Cadmium	µg/L	81	324	39
	Lbs/day	4.7	18.9	
Chromium (hexavalent)	µg/L	162	648	78
	Lbs/day	9.5	37.8	
Copper	µg/L	83	812	41
	Lbs/day	4.8	47.4	
Lead	µg/L	162	648	78
	lbs/day	9.5	37.8	
Mercury	µg/L	3.2	12.9	1.37
	lbs/day	0.187	0.75	--
Nickel	µg/L	405	1620	195
	lbs/day	23.6	94.6	
Silver	µg/L	44	214	21.2
	lbs/day	2.6	12.5	
Cyanide	µg/L	81	324	39
	lbs/day	4.7	18.9	
Total Chlorine Residual	µg/L	162	648	78
	lbs/day	9.5	37.8	
Ammonia as N	mg/l	48.6	194.4	23.4
	lbs/day	2837.3	11349.1	
Chronic Toxicity[7]	TUc		81.0	
Chlorinated Phenolics[8]	µg/L	81	324	39
	lbs/day	4.7	18.9	
Endosulfan	µg/L	0.729	1.458	0.357
	lbs/day	0.043	0.085	
Endrin	µg/L	0.162	0.324	0.078
	lbs/day	0.0095	0.0189	
HCH[9]	µg/L	0.320	0.640	0.156
	lbs/day	0.0187	0.037	--
Radioactivity	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the CFR. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			

b. Effluent Limitations for the Protection of Human Health – NonCarcinogens

Parameter	Units	Monthly Average	
		Effluent Limitations	Performance Goals [6]
Thallium	µg/L	162	78
	lbs/day	9.5	
Tributyltin	µg/L	0.11	0.05
	lbs/day	0.006	

c. Effluent Limitations for the Protection of Human Health - Carcinogens

Pollutants	Unit	Monthly Average	
		Effluent Limitations	Performance Goals [6]
acrylonitrile	µg/L	8.1	3.9
	lbs/day	0.47	
aldrin	µg/L	0.00178	0.0009
	lbs/day	0.00010	
benzene	µg/L	478	230
	lbs/day	27.9	
benzidine	µg/L	0.0056	0.003
	lbs/day	0.00033	
beryllium	µg/L	2.7	1.3
	lbs/day	0.156	
bis (2-chloroethyl) ether	µg/L	3.6	1.75
	lbs/day	0.21	
carbon tetrachloride	µg/L	73	35.1
	lbs/day	4.3	
Chlordane[10]	µg/L	0.00186	0.0009
	lbs/day	0.000109	
DDT[11]	µg/L	0.0138	0.006
	lbs/day	0.00080	
3,3'-dichlorobenzidine	µg/L	0.66	0.32
	lbs/day	0.038	
dieldrin	µg/L	0.0032	0.0015
	lbs/day	0.000189	
1,2-diphenylhydrazine	µg/L	13.0	6.2
	lbs/day	0.76	
heptachlor	µg/L	0.0041	0.002
	lbs/day	0.00024	
heptachlor epoxide	µg/L	0.00162	0.00078
	lbs/day	0.000095	
hexachlorobenzene	µg/L	0.0170	0.0082
	lbs/day	0.00099	

Pollutants	Unit	Monthly Average	
		Effluent Limitations	Performance Goals [6]
N-nitrosodi-N-propylamine	µg/L	30.8	14.8
	lbs/day		
PAHs[12]	µg/L	0.71	0.34
	lbs/day	0.042	
PCBs[13]	µg/L	0.00154	0.00074
	lbs/day	0.000090	
TCDD equivalents[14]	µg/L	0.00000032	0.00000015
	lbs/day	0.0000000184	
toxaphene	µg/L	0.0170	0.0082
	lbs/day	0.00099	
2,4,6-trichlorophenol	µg/L	23	11.3
	lbs/day	1.37	

Footnotes for Tables:

[1]. Analysis using Standard Method 5210 shall be reported as $CBOD_5$. When the nitrification inhibitor is not used, the monitoring report shall so state and the results shall be reported as BOD_5.

[2]. The daily maximum effluent concentration limit shall apply to flow-weighted 24-hour composite samples.

[3]. The 6-month median shall apply as a moving median of daily values for any 180-day period in which daily values represent flow weighted average concentrations within a 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.

[4]. If only one sample is collected during the time period associated with the water quality objective (e.g. monthly average or 6-month median), the single measurement shall be used to determine compliance with the effluent limitation for the entire time period.

[5]. The mass emission rates shall be calculated using the following formula:

Mass emission rate (lbs/day) = 0.00834 x C x Q

where: C = the effluent concentration (µg/L), Q = average flow rate of 7.0 mgd of treated wastewater.

The mass emission values shown in the Table are for 7 mgd. The mass limits will be based on the actual flow discharged

[6]. The performance goals are based upon the Ocean Plan Water Quality Objectives for 6-month median or 30-day average values with a dilution credit of 38 and are specified only as an indication of the treatment efficiency of the refinery. They are not considered as limitations or standards for the regulation of the facility. Chevron shall make best efforts to maintain, if not improve, the effluent quality at the level of these performance goals. The Executive Officer may modify any of the performance goals if the Discharger requests and has demonstrated that the change is warranted.

[7]. Expressed as Chronic Toxicity Units (TUc)

TUc = 100 / NOEC

where : NOEC (No Observed Effect Concentration) is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Appendix II of the California Ocean Plan effective December 3, 2001, pages 32-34.

NOEC shall be determined based on toxicity tests having chronic endpoints.

[8]. Sum of 2-chlorophenol, 4-chloro-3-methylphenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, and pentachlorophenol.

[9]. HCH means the sum of the alpha, beta, gamma(lindane), and delta isomers of hexachlorocyclohexane.

[10]. Sum of chlordane-alpha, chlordane-gamma, chlordane-alpha, chlordane-gamma, nonachlor-alpha, nonachlor-gamma and oxychlordane.

[11]. Sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

[12]. Sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

[13]. Sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

[14]. Sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below:

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8-tetra CDF	0.1
1,2,3,7,8-penta CDF	0.05
2,3,4,7,8-penta CDF	0.5
2,3,7,8-hexa CDFs	0.1
2,3,7,8-hepta CDFs	0.01
octa CDF	0.001

3. Effluent limitations for toxic pollutants presented in Tables I.B.2.a, b. and c. of this Order reflect several changes from limitations included in the previous Order.

   a. Chlorodibromomethane, dichlorobromomethane, and chloroform were

detected in the discharge. Therefore, this Order adds effluent limits for these pollutants based on the Ocean Plan WQOs in Table B.

b. The previous permit included an effluent limit for heptachlor which is the sum of heptachlor and heptachlor epoxide. The 2001 Ocean Plan revision includes revised, more stringent WQOs for both of these pollutants. Therefore, the effluent limits in this Order reflect this change.

c. The mass-based effluent limits are calculated using an average flow rate of 7 mgd, which reflects a reduction from 8 mgd in the previous permit.

4. The pH of wastes discharged shall be between 6.0 to 9.0 s.u. This limit is from the Ocean Plan and is unchanged from the previous permit.

5. The temperature of wastes discharged shall not exceed that necessary to assure protection of the beneficial uses of the receiving waters; but in no case shall exceed 104°F in the effluent. This limit is unchanged from the previous permit.

6. Carbonaceous biochemical oxygen demand (CBOD) has been reported by Chevron instead of BOD since 1994. Chevron uses Standard Method 5210 for analysis of effluent for CBOD due to nitrogenous matrix interference in biochemical oxygen demand (BOD_5) analysis. Standard Method 5210 states that nitrogenous demand on secondary treated effluent waste water is a positive interference in BOD_5 determination. Since Chevron's process uses secondary treatment with nitrifiers, nitrification inhibitor is needed to exclude the interference. When nitrification inhibitor is used, the data is to be reported as $CBOD_5$ analysis. In 1994, the State Department of Health Services granted Chevron a certification for performing the CBOD analysis.

7. The Ocean Plan sets forth narrative physical characteristics and chemical characteristics for ocean waters in terms of floating particulates, visibility of oil and grease, discoloration of ocean surface, quality of discharge at the dilution zone, sediments quality for benthic communities, a change in pH and dissolved oxygen, concentration of organic materials in marine sediments, and discharge of other materials that shall degrade aquatic growth or indigenous biota.

F. Performance Goals

Chapter III, Section F.2, of the 2005 Ocean Plan allows the Regional Board and USEPA to establish more restrictive water quality objectives and effluent limitations than those set forth in the Ocean Plan as necessary for the protection of the beneficial uses of ocean waters.

Pursuant to this provision and to implement the recommendation of the Water Quality Advisory Task Force (*Working Together for an Affordable Clean Water Environment, A final report presented to the California Water Quality Control Board, Los Angeles Region by Water Quality Advisory Task force, September 30, 1993)* that was adopted by the Regional Board on November 1, 1993, performance goals that are more

stringent than those based on Ocean Plan objectives are prescribed in this Order. This approach is consistent with the antidegradation policy in that it requires the Discharger to maintain its treatment level and effluent quality, recognizing normal variations in treatment efficiency and sampling and analytical techniques. However, this approach does not address substantial changes in treatment plant operations that could significantly affect the quality of the treated effluent.

While performance goals were previously placed in industrial permits in the Region, they have not been continued for discharges that are to inland surface waters. For inland surface waters, the California Toxics Rule (40 CFR §131.38) has resulted in effluent limits as stringent as many performance goals. However, the Ocean Plan allows for significant dilution, and the continued use of performance goals serves to maintain existing treatment levels and effluent quality and supports State and federal antidegradation policies.

The performance goals are based upon the smaller dilution credit of 38:1 that was granted to Chevron before the extension of Ocean Outfall line and issuance of higher dilution credit of 80:1. Performance goals are intended to minimize pollutant loading (primarily for toxics) and while maintaining the incentive for future voluntary improvement of water quality whenever feasible, without the imposition of more stringent limits based on improved performance. They are not considered as limitations or standards for the regulation of the discharge from the facility. The Executive Officer and USEPA may modify any of the performance goals if the Discharger requests and has demonstrated that the change is warranted.

Procedures for the determination of performance goals

1. Performance goals are calculated according to the equation $C_{PG} = Co+Dm(Co-Cs)$ in the Ocean Plan, where

   Co = is the most stringent six month median or 30-day average water quality objective value specified in Table B of the Ocean Plan.
   Dm = Dilution credit of 38
   Cs = Background seawater concentration.

The performance goals for arsenic and lead are calculated as follows:

Arsenic

Co = 8 µg/L; Dm = 38; Cs = 3
C_{PG} = Performance Goal = 8 + 38(8 - 3) = 190 µg/L

Lead

Co = 2 µg/L Dm = 80; Cs = 0
C_{PG} = Performance Goal = 2 + 38(2 - 0) = 78 µg/L

The performance goals are prescribed in this Order. The listed performance goals are

not enforceable effluent limitations or standards. However, the Discharger shall maintain, if not improve, its treatment efficiency. Any exceedance of the performance goals shall trigger an investigation into the cause of the exceedance. If the exceedance persists in two successive monitoring periods, the Discharger shall submit a written report to the Regional Board on the nature of the exceedance, the results of the investigation as to the cause of the exceedance, and the corrective actions taken or proposed corrective measures with a timetable for implementation, if necessary.

No performance goals are established for pollutants that have high calculated values However, these pollutants shall be monitored at an appropriate frequency.

VI. MONITORING PROGRAM

A. Effluent Monitoring

1. To demonstrate compliance with the waste discharge requirements and effluent limitations established in the permit, continuous monitoring of total waste flow, temperature, and pH, weekly monitoring for CBOD, COD, oil and grease, ammonia nitrogen, and suspended solids, monthly monitoring for settable solids, sulfides, phenolic compounds, total chlorine residual, phenolic compounds, turbidity, acute and chronic toxicity, heavy metals, cyanide, and selenium is required. This Order carries over the quarterly or semiannual or annual monitoring requirement for other priority pollutants with effluent limitations. In addition, this Order includes quarterly monitoring requirement for MTBE, which is unchanged from the previous Order.

2. The monitoring requirement is unchanged from the previous permit except for the following:

   a. The previous Order required Chevron to perform a tributyltin (TBT) study, to determine the source/s of TBT and implement measures to reduce TBT in the effluent if necessary, to meet the limit. Chevron was also required to reduce its method detection limit from 20 ug/L to below the effluent limitation of 55 ng/L. Chevron monitors for TBT on a quarterly basis, and the past 4 years of monitoring data (1999-2002) showed that TBT has been non-detect with a Practical Quantitation Limit (PQL) of 40.8 ng/L. Therefore, Tributyltin will be monitored on a reduced frequency from quarterly to semiannually;

   b. Annual monitoring is required for chlorodibromomethane, and dichlorobromomethane;

   c Heptachlor and heptachlor shall be monitored and reported separately to demonstrate compliance with the limits for each pollutant.

   d. Monitoring requirement for 2-nitrophenol, 4-nitrophenol, 2,4-dimthylphenol, acenapthene, butyl benzyl phthalate, di-n-octyl phthalate, napthalene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 2-chloronapthalene, 1,1-

dichloroethane, 4-bromophenyl phenyl ether, 4-chlorophenyl phenyl ether, 2-chloroethylvinyl ether, 1,3-dichloropropylene, 2,6-dinitrotoluene are removed from this Order (Table III.A of the MRP), since the above listed pollutants do not have a WQO in the Ocean Plan, thus no effluent limits are prescribed.

B. Receiving Water Monitoring

The receiving water monitoring program shall consist of periodic surveys of the area surrounding the discharge point and shall include studies of those physical-chemical characteristics of the receiving waters which may be impacted by the discharge. The Chevron will be required to perform the following:

1. General observations of the receiving water when discharges occur and report the observations in the quarterly monitoring report. The Regional Board in assessing potential impacts of future discharges will use data from these observations;

2. Quarterly monitoring of temperature, dissolved oxygen levels, conductivity, and pH;

3. Semi-annual sampling for oil and grease, benzene, toluene, xylene, ethylbenzene, arsenic, cadmium, copper, chromium, lead, mercury, nickel, silver, zinc, selenium, and polynuclear aromatic hydrocarbons;

4. Annual benthic infaunal and sediment chemistry analysis; and

5. Annual sediment toxicity testing.

6. The Regional Board has adopted two TMDLs to reduce bacteria at Santa Monica Bay beaches during dry and wet weather. Chevron is required to monitor total coliform, fecal coliform, and enterococcus at the inshore monitoring stations

These requirements are unchanged from the previous permit, except that bacteria monitoring is required because of adopted TMDLs and selenium is required for both receiving water and sediment chemistry analysis, since selenium has been consistently detected in the effluent.

C. Monitoring for the Microbial Mat

Chevron shall monitor the accumulation of biosolids in the vicinity of the outfall on a quarterly basis through visual observation to insure that the biosolids does not significantly expand or change from the current condition. The frequency of monitoring may revert to annually if the condition disappears. Chevron shall collect at least one benthic infaunal sample annually from an area affected by the accumulation of biosolids. These requirements are unchanged from the previous permit.

A. Regional Monitoring

The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board) and the United States Environmental Protection Agency (USEPA), working with other groups have developed a comprehensive basis for effluent and receiving water monitoring appropriate to large industrial and publicly owned treatment works (POTWs) discharging to the waters of the Southern California Bight. The conceptual framework for the Santa Monica Bay Restoration Project's Comprehensive Monitoring Program was designed to be implemented in part through modifications to existing receiving water monitoring programs for major NPDES dischargers into coastal ocean waters. Some elements of this monitoring program already have been implemented, for example through establishment of periodic bight-wide regional monitoring surveys (Southern California Bight Pilot Project'94, Bight'98 and Bight'03) and annual kelp bed monitoring. However, other elements of the program have yet to be developed, including:

-rocky intertidal monitoring
-resident fish monitoring
-pelagic ecosystem monitoring
-wetlands monitoring
-hard bottom benthos monitoring
-bird and mammal monitoring
-commercial shellfish monitoring
-stormwater mass emission loading and plume tracking monitoring.

The Santa Monica Bay Restoration Commission's Technical Advisory Committee is nearing completion in the development of a detailed workplan outlining the monitoring surveys required to complete implementation of the Comprehensive Monitoring Program framework developed in 1993. This workplan includes the formulation of management goals and objectives, identification of suitable monitoring indicators, detailed sampling designs, and cost estimates for each monitoring component. Upon completion of this workplan, USEPA, the Regional Board, affected NPDES permit holders, and other interested agencies and stakeholders will develop implementation plans to collaboratively fund these programs and determine each party's level of participation. It is anticipated that funding for these programs from the Chevron El Segundo Refinery will be supplied through a combination of modifications to the Chevron El Segundo Refinery's Monitoring and Reporting Program, including redirection of existing effort and new monitoring efforts relevant to the Chevron El Segundo Refinery discharge. Redirection of existing monitoring requirements and/or the imposition of additional monitoring efforts will be notified by the Executive Officer of the Regional Board.