CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

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ORDER NO. R4-2017-XXXX
NPDES NO. CA0000337

WASTE DISCHARGE REQUIREMENTS FOR THE CHEVRON PRODUCTS COMPANY, EL SEGUNDO REFINERY

The following Discharger is subject to waste discharge requirements (WDRs) set forth in this Order:

Table 1. Discharger Information

Discharger	**Chevron Products Company**
Name of Facility	**El Segundo Refinery**
Facility Address	**324 El Segundo Boulevard**
	El Segundo, California 90245
	Los Angeles

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	**Treated process wastewater and treated storm water**	**33.908056º**	**-118.438056º**	Pacific Ocean

Table 3. Administrative Information

This Order was adopted on:	**October 5, 2017**
This Order shall become effective on:	**December 1, 2017**
This Order shall expire on:	**November 30, 2022**
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	**180 days prior to the Order expiration date**
The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, Los Angeles Region have classified this discharge as follows:	**Major discharge**

I, Samuel Unger, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on October 5, 2017.

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Samuel Unger, P.E., Executive Officer

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I. FACILITY INFORMATION

Information describing the Chevron Products Company (hereinafter "Discharger" or "Chevron") El Segundo Refinery (hereinafter "Facility" or "Refinery") is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

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

A. Legal Authorities. This Order serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.

B. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through H are also incorporated into this Order.

C. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, and V.B are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

E. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED, that this Order supersedes Order No. R4-2013-0025 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger is authorized to discharge from the identified Facility and outfalls into waters of the United States and shall comply with the requirements in this Order. This action in no way prevents the Regional Water Board from taking enforcement action for violations of the previous Order.

III. DISCHARGE PROHIBITIONS

A. Wastes discharged at Discharge Point 001 shall be limited to 27 million gallons per day (MGD) of commingled wastewater (consisting of treated process wastewater and treated storm water) from Discharge Point 001. The discharge of wastes from accidental spills or other sources is prohibited.

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B. Discharges of water, materials, thermal wastes, elevated temperature wastes, toxic wastes, deleterious substances, or wastes other than those authorized by this Order, to a storm drain system, the Pacific Ocean, or other waters of the state, are prohibited.

C. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or create a nuisance as defined by section 13050 of the Water Code.

D. Wastes discharged shall not contain any substances in concentrations toxic to human, animal, plant, or aquatic life.

E. The discharge shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Water Board or the State Water Resources Control Board (State Water Board) as required by the federal CWA and regulations adopted thereunder.

F. The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited under Water Code section 13375.

G. Any discharge of wastes at any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of this Order.

H. The discharge of trash to surface waters of the State or the deposition of trash where it may be discharged into surface waters of the State is prohibited.

I. The discharge of oil or any residuary product of petroleum to waters of the State, except in accordance with the waste discharge requirements or other provisions of Division 7 of the Water Code, is prohibited.

J. The discharge of any waste resulting from the combustion of toxic or hazardous wastes to any waste stream that ultimately discharges to waters of the United States is prohibited, unless specifically authorized elsewhere in this permit.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program, Attachment E:

Table 4. Effluent Limitations for Discharge Point 001

Parameter	Units	Effluent Limitations			
		6-Month Median[1,2]	Average Monthly[2]	Daily Maximum[3]	Inst. Maximum[4]
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	--	36	66	--
Dry Weather[5]	lbs/day[7]	--	2,673	4,812	--
Wet Weather[6]	lbs/day[8]	--	6,249	11,313	--
Total Suspended Solids (TSS)	mg/L	--	29	45	--
Dry Weather[5]	lbs/day[7]	--	2,139	3,354	--
Wet Weather[6]	lbs/day[8]	--	5,064	7,905	--
Chemical Oxygen Demand (COD)	mg/L	--	254	490	--
Dry Weather[5]	lbs/day[7]	--	18,666	35,971	--
Wet Weather[6]	lbs/day[8]	--	43,045	84,729	--

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Parameter	Units	Effluent Limitations			
		6-Month Median[1,2]	Average Monthly[2]	Daily Maximum[3]	Inst. Maximum[4]
Oil and Grease	mg/L	--	11	20	--
Dry Weather[5]	lbs/day[7]	--	778	1,458	--
Wet Weather[6]	lbs/day[8]	--	1,867	3,571	--
Phenolic Compounds[9]	mg/L	--	0.19	0.49	--
Dry Weather[5]	lbs/day[7]	--	15.8	65.1	--
Wet Weather[6]	lbs/day[8]	--	38.6	112.2	--
Ammonia (as N)	mg/L	--	20	44	--
Dry Weather[5]	lbs/day[7]	--	1,458	3,208	--
Wet Weather[6]	lbs/day[8]	--	1,458	3,208	--
Sulfide	mg/L	--	0.19	0.49	--
Dry Weather[5]	lbs/day[7]	--	14	32	--
Wet Weather[6]	lbs/day[8]	--	14	32	--
Total Chromium	mg/L	--	0.23	0.65	--
Dry Weather[5]	lbs/day[7]	--	18.4	53.1	--
Wet Weather[6]	lbs/day[8]	--	47.7	134.1	--
Hexavalent Chromium	mg/L	--	0.02	0.04	--
Dry Weather[5]	lbs/day[7]	--	1.4	3.4	--
Wet Weather[6]	lbs/day[8]	--	5.1	11.9	--
pH	s.u.	--	--	--	6.0-9.0[10]
Temperature	°F	--	--	--	104
Acute Toxicity	TU_a	--	--	--	2.7 [23]
Chronic Toxicity (TST)[20,21]	Pass or Fail	--	--	Pass	--
Phenolics, chlorinated[13]	µg/L	81	--	324	810
Dry Weather[6]	lbs/day[11]	5.9	--	23.8	--
Wet Weather[7]	lbs/day[12]	18.2	--	72.9	--
Endosulfan	µg/L	0.729	--	1.458	2.187
Dry Weather[6]	lbs/day[11]	0.05	--	0.1	--
Wet Weather[7]	lbs/day[12]	0.16	--	0.33	--
Endrin	µg/L	0.162	--	0.324	0.486
Dry Weather[6]	lbs/day[11]	0.012	--	0.02	--
Wet Weather[7]	lbs/day[12]	0.04	--	0.07	--
HCH[14]	µg/L	0.320	--	0.640	0.972
Dry Weather[6]	lbs/day[11]	0.02	--	0.05	--
Wet Weather[7]	lbs/day[12]	0.07	--	0.14	--
Thallium	µg/L	--	162	--	--
Dry Weather[6]	lbs/day[11]	--	11.9	--	--
Wet Weather[7]	lbs/day[12]	--	36.5	--	--
Tributyltin	µg/L	--	0.11	--	--
Dry Weather[6]	lbs/day[11]	--	0.01	--	--
Wet Weather[7]	lbs/day[12]	--	0.02	--	--

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Parameter	Units	Effluent Limitations			
		6-Month Median[1,2]	Average Monthly[2]	Daily Maximum[3]	Inst. Maximum[4]
Acrylonitrile	µg/L	--	8.1	--	--
Dry Weather[6]	lbs/day[11]	--	0.6	--	--
Wet Weather[7]	lbs/day[12]	--	1.8	--	--
Aldrin	µg/L	--	0.00176	--	--
Dry Weather[6]	lbs/day[11]	--	0.00013	--	--
Wet Weather[7]	lbs/day[12]	--	0.0004	--	--
Benzidine	µg/L	--	0.0056	--	--
Dry Weather[6]	lbs/day[11]	--	0.0004	--	--
Wet Weather[7]	lbs/day[12]	--	0.0013	--	--
Beryllium	µg/L	--	2.7	--	--
Dry Weather[6]	lbs/day[11]	--	0.2	--	--
Wet Weather[7]	lbs/day[12]	--	0.6	--	--
Bis(2-chloroethyl) ether	µg/L	--	3.6	--	--
Dry Weather[6]	lbs/day[11]	--	0.26	--	--
Wet Weather[7]	lbs/day[12]	--	0.81	--	--
Carbon tetrachloride	µg/L	--	73	--	--
Dry Weather[6]	lbs/day[11]	--	5.4	--	--
Wet Weather[7]	lbs/day[12]	--	16.4	--	--
Chlordane	µg/L	--	0.00186	--	--
Dry Weather[6]	lbs/day[11]	--	0.00014	--	--
Wet Weather[7]	lbs/day[12]	--	0.0004	--	--
DDT[15]	µg/L	--	0.0096	--	--
Dry Weather[6]	lbs/day[11]	--	0.0007	--	--
Wet Weather[7]	lbs/day[12]	--	0.0022	--	--
Yearly WLA[18]	TMDL establishes a yearly WLA of 358 g/year for DDT at the Facility				
3,3'-dichlorobenzidine	µg/L	--	0.66	--	--
Dry Weather[6]	lbs/day[11]	--	0.05	--	--
Wet Weather[7]	lbs/day[12]	--	0.15	--	--
Dieldrin	µg/L	--	0.0032	--	--
Dry Weather[6]	lbs/day[11]	--	0.0002	--	--
Wet Weather[7]	lbs/day[12]	--	0.0007	--	--
1,2-diphenylhydrazine	µg/L	--	13	--	--
Dry Weather[6]	lbs/day[11]	--	0.95	--	--
Wet Weather[7]	lbs/day[12]	--	2.9	--	--
Heptachlor	µg/L	--	0.0041	--	--
Dry Weather[6]	lbs/day[11]	--	0.0003	--	--
Wet Weather[7]	lbs/day[12]	--	0.0009	--	--
Heptachlor Epoxide	µg/L	--	0.00162	--	
Dry Weather[6]	lbs/day[11]	--	0.0001	--	--
Wet Weather[7]	lbs/day[12]	--	0.0004	--	--

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Parameter	Units	Effluent Limitations			
		6-Month Median[1,2]	Average Monthly[2]	Daily Maximum[3]	Inst. Maximum[4]
Hexachlorobenzene	µg/L	--	0.017	--	--
Dry Weather[6]	lbs/day[11]	--	0.0012	--	--
Wet Weather[7]	lbs/day[12]	--	0.004	--	--
N-nitro-N-propylamine	µg/L	--	30.8	--	--
Dry Weather[6]	lbs/day[11]	--	2.26	--	--
Wet Weather[7]	lbs/day[12]	--	6.93	--	--
PAHs[16]	µg/L	--	0.71	--	--
Dry Weather[6]	lbs/day[11]	--	0.052	--	--
Wet Weather[7]	lbs/day[12]	--	0.160	--	--
PCBs[17]	µg/L	--	0.000259	--	
Dry Weather[6]	lbs/day[11]	--	0.00002	--	--
Wet Weather[7]	lbs/day[12]	--	0.00006	--	--
Yearly WLA[18]	TMDL establishes a yearly WLA of 10 g/year for PCBs at the Facility				
TCDD Equivalents[24]	µg/L	--	0.00000032	--	--
Dry Weather[6]	lbs/day[11]	--	0.00000002	--	--
Wet Weather[7]	lbs/day[12]	--	0.00000007	--	--
Toxaphene	µg/L	--	0.017	--	--
Dry Weather[6]	lbs/day[11]	--	0.0012	--	--
Wet Weather[7]	lbs/day[12]	--	0.004	--	--
2,4,6-trichlorophenol	µg/L	--	23	--	--
Dry Weather[6]	lbs/day[11]	--	1.69	--	--
Wet Weather[7]	lbs/day[12]	--	5.18	--	--
Total coliform[22]	MPN/ 100 ml	--	1,000[19]	--	10,000
Fecal coliform[22]	MPN/ 100 ml	--	200[19]	--	400
Enterococcus[22]	MPN/ 100 ml	--	35[19]	--	104

1 The 6-month median shall apply to all samples taken in the current compliance month and all samples taken in the previous 5 monthly monitoring periods.

2 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.

3 The daily maximum effluent concentration limitation shall apply to flow-weighted 24-hour composite samples.

4 The instantaneous maximum shall apply to grab sample determinations.

5 Dry weather limitations apply when wet weather conditions are not met.

6 Wet weather limitations apply during a rainfall event of 0.1-inch or more in a 24-hour period and for the 72 hours following the end of the associated rainfall event.

7 Dry weather specified mass limit based on refinery throughput, size factor, process factor and effluent limit specified in 40 C.F.R. Part 419 Subpart B. They are calculated based on a maximum expected discharge flow rate during dry weather of 8.8 MGD. See Section IV.B of the Fact Sheet for details.

8 Wet weather specified mass limit based on the sum of the dry weather mass limit and the mass of the pollutant contained in contaminated runoff. They are calculated based on a contaminated runoff flow of 16.252 MGD. See Section IV.B of the Fact Sheet for details.

9 The pH of the wastes discharged shall within the range of 6.0 to 9.0 pH units. Excursions from the range are permitted by 40 C.F.R. 401.17 for (a) the total time during which the pH values are outside the required range of

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pH values shall not exceed 7 hours and 26 minutes; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

[10] Non-chlorinated phenolic compounds represent the sum of 2-nitrophenol; phenol; 2,4-dimethylphenol; 2,4-dinitrophenol; 2-methyl-4,6-dinitrophenol; and 4-nitrophenol.

[11] These mass-based effluent limitations for dry weather discharges are calculated using the following formula:
Mass-based effluent limitation = C * Q * 0.00834
Where: C = concentration-based effluent limitation (Mg/L)
Q = 8.8 MGD (the maximum expected flow rate during dry weather)

[12] These mass-based effluent limitations for wet weather discharges are calculated using the following formula:
Mass-based effluent limitation = C * Q * 0.00834
Where: C = concentration-based effluent limitation (Mg/L)
Q = 27 MGD (the maximum expected flow rate during wet weather)

[13] Chlorinated phenolic compounds represent the sum of 2-chlorophenol; 2,4-dichlorophenol; 2,4,6-trichlorophenol; 4-chloro-3-methylphenol; and pentachlorophenol.

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

[15] DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, and 2,4'-DDD.

[16] PAHs shall mean the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo(k)fluoranthene; 1,12-benzoperylene; benzo(a)pyrene; chrysene; dibenzo(a,h)anthracene; fluorine; indeno(1,2,3-cd)pyrene; phenanthrene; and pyrene.

[17] PCBs shall mean the 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.

[18] The Yearly WLA assumes the maximum daily flow of 27 MGD for the entire year. Compliance with the Yearly WLAs is therefore demonstrated through compliance with the concentration-based WLAs and the maximum daily flow.

[19] Limitation is a 30-day geometric mean based on 5 samples in a 30-day period.

[20] The Chronic Toxicity final effluent limitation is protective of both the numeric acute and chronic toxicity 2015 Ocean Plan water quality objectives. The final effluent limitation will be implemented using *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995), current USEPA guidance in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010) (http://www3.epa.gov/npdes/pubs/wet_final_tst_implementation2010.pdf) and *EPA Regions 8, 9, and 10, Toxicity Training Tool* (January 2010).

[21] The Maximum Daily Effluent Limitation (MDEL) shall be reported as "Pass" or "Fail". See section V.B. of Attachment E.

[22] The Discharger shall monitor for total coliform, fecal coliform and *Enterococcus* at Monitoring Location T-710.

[23] A Time Schedule Order (R4-2017-YYYY) has been issued to Chevron for acute toxicity. It includes an interim limit of 8.7 TU_a which expires on September 30, 2018.

[24] TCDD Equivalents shall mean the 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. USEPA method 1613 may be used to analyze dioxin and furan congeners.
Dioxin-TEQ (TCDD Equivalents) = Σ (C_x x TEF_x)
Where:
C_x = concentration of dioxin or furan congener x
TEF_x = TEF for congener x

Toxicity Equivalency Factors

Isomer Group	Toxicity Equivalency Factor (TEF)
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

2. Interim Effluent Limitations—Not Applicable

B. Land Discharge Specifications—Not Applicable

C. Recycling Specifications—Not Applicable

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V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitation

Unless specifically excepted by this Order, the discharge, by itself or jointly with any other discharge(s), shall not cause a violation of the following water quality objectives. Compliance with these objectives shall be determined by samples collected at stations representative of the area within the waste field where initial dilution is completed (i.e., outside the zone of initial dilution (ZID)).

1. **State Water Board and CDPH Standards** Both the State Water Board and the California Department of Public Health (CDPH) have established standards to protect water contact recreation in coastal waters from bacterial contamination. Subsection a of this section identifies bacterial water quality objectives adopted by the State Water Board for ocean waters used for water contact recreation. Subsection b identifies the bacteriological standards adopted by CDPH for coastal waters adjacent to public beaches and public water contact sports areas in ocean waters.

   a. **State Water Board Standards.** Within a zone bounded by the shoreline, and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports as determined by the Regional Water Board (i.e, waters designated as REC-1), but including all kelp beds, the discharge shall not cause the following bacterial objectives throughout the water column to be exceeded:

      30-day Geometric Mean –the following standards are based on the geometric mean of the five most recent samples from each site:

      i. Total coliform density shall not exceed 1,000 per 100 ml;

      ii. Fecal coliform density shall not exceed 200 per 100 ml; and

      iii. *Enterococcus* density shall not exceed 35 per 100 ml.

      Single Sample Maximum:

      i. Total coliform density shall not exceed 10,000 per 100 ml;

      ii. Fecal coliform density shall not exceed 400 per 100 ml;

      iii. *Enterococcus* density shall not exceed 104 per 100 ml; and

      iv. Total coliform density shall not exceed 1,000 per 100 m l when the fecal coliform/total coliform ratio exceeds 0.1.

      The Initial Dilution Zone for any wastewater outfall shall be excluded from designation as kelp beds for purposes of bacterial standards. Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds for purposes of bacterial standards.

   b. **CDPH Standards.** CDPH has established minimum protective bacteriological standards for coastal water adjacent to public beaches and for public water-contact sports areas in ocean waters. These standards are found in the California Code of Regulations, title 17, section 7958, and they are identical to the objectives contained in subsection a. above. When a public beach or public water-contact sports area fails to meet these standards, CDPH or the local public health officer may post with warning signs or otherwise restrict use of the public beach or public water-contact sports area until the standards are met. The CDPH regulations impose more frequent

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monitoring and more stringent posting and closure requirements on certain high-use public beaches that are located adjacent to a storm drain that flows in the summer.

For beaches not covered under AB 411 regulations, CDPH imposes the same standards as contained in Title 17 and requires weekly sampling but allows the county health officer more discretion in making posting and closure decisions.

2. **Shellfish Harvesting Standards.** At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70 per 100 ml throughout the water column, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

3. **Physical Characteristics**

   a. Floating particulates and grease and oil shall not be visible as a result of wastes discharged.

   b. The discharge of waste shall not alter the color of the receiving waters; create a visual contrast with the natural appearance of the water; nor cause aesthetically undesirable discoloration of the ocean surface.

   c. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.

   d. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.

   e. Trash shall not be present along shorelines, or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance.

4. **Chemical Characteristics**

   a. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials; excluding effects of naturally induced upwelling.

   b. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

   c. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.

   d. The concentration of substances set forth in Chapter II, Table 1 of the Ocean Plan, shall not be increased in marine sediments to levels that would degrade indigenous biota.

   e. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.

   f. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

   g. Numerical water quality objectives established in Chapter II, Table 1 of the California Ocean Plan shall not be exceeded outside of the zone of initial dilution as a result of discharges from the Facility.

5. **Biological Characteristics**

   a. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.

b. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

c. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

6. Radioactivity

Discharge of radioactive waste shall not degrade marine life.

B. Groundwater Limitations—Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions. The Discharger shall comply with all Standard Provisions included in Attachment D.

2. Regional Water Board Standard Provisions. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

a. This Order may be modified, revoked, reissued, or terminated in accordance with the provisions of 40 C.F.R. sections 122.44, 122.62, 122.63, 122.64, 125.62 and 125.64. Causes for taking such actions include, but are not limited to: failure to comply with any condition of this Order; endangerment to human health or the environment resulting from the permitted activity; or acquisition of newly-obtained information which would have justified the application of different conditions if known at the time of Order adoption. The filing of a request by the Discharger for an Order modification, revocation, and issuance or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

b. The Discharger must comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding discharges of waste water to storm drain systems or other water courses under their jurisdiction; including applicable requirements in the municipal storm water management program developed to comply with NPDES permits issued by the Regional Water Board to local agencies.

c. The Discharger shall comply with all applicable effluent limitations, national standards of performance, toxic effluent standards, and all federal regulations established pursuant to sections 301, 302, 303(d), 304, 306, 307, 316, 318, 405, and 423 of the federal CWA and amendments thereto.

d. These requirements do not exempt the operator of the facility from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize this facility, and they leave unaffected any further restraints on the disposal of wastes at this site which may be contained in other statutes or required by other agencies.

e. Oil or oily material, chemicals, refuse, or other wastes that constitute a condition of pollution or nuisance shall not be stored or deposited in areas where they may be picked up by rainfall and carried off of the property and/or discharged to surface waters. Any such spill of such materials shall be contained and removed immediately.

f. A copy of these waste discharge specifications shall be maintained at the discharge facility so as to be available at all times to operating personnel.

g. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

i. Violation of any term or condition contained in this Order;

ii. Obtaining this Order by misrepresentation, or failure to disclose all relevant facts;

iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

h. If there is any storage of hazardous or toxic materials or hydrocarbons at this facility and if the facility is not staffed at all times, a 24-hour emergency response telephone number shall be prominently posted where it can easily be read from the outside.

i. The Discharger shall file with the Regional Water Board a report of waste discharge (ROWD) at least 180 days before making any material change or proposed change in the character, location, or volume of the discharge.

j. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Regional Water Board as soon as they know or have reason to believe that they have begun or expect to begin to use or manufacture an intermediate or final product or byproduct of any toxic pollutant that was not reported on their application.

k. In the event of any change in name, ownership, or control of these waste disposal facilities, the discharger shall notify this Regional Water Board of such change and shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to the Regional Water Board.

l. The Water Code provides that any person who violates a waste discharge requirement or a provision of the Water Code is subject to civil penalties of up to $5,000 per day, $10,000 per day, or $25,000 per day of violation, or when the violation involves the discharge of pollutants, is subject to civil penalties of up to $10 per gallon per day or $25 per gallon per day of violation; or some combination thereof, depending on the violation, or upon the combination of violations.

m. Violation of any of the provisions of this Order may subject the violator to any of the penalties described herein, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalty may be applied for each kind of violation.

n. The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act to any waste stream which may ultimately be released to waters of the United States, is prohibited unless specifically authorized elsewhere in this permit or another NPDES permit. This requirement is not applicable to products used for lawn and agricultural purposes.

o. The Discharger shall notify the Executive Officer in writing no later than 6 months prior to the planned discharge of any chemical, other than the products previously reported to the Executive Officer, which may be toxic to aquatic life. Such notification shall include:

i. Name and general composition of the chemical,

ii. Frequency of use,

iii. Quantities to be used,

iv. Proposed discharge concentrations, and

v. USEPA registration number, if applicable.

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p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

q. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, Average Monthly Effluent Limitation (AMEL), Maximum Daily Effluent Limitation (MDEL), instantaneous maximum effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Regional Water Board by telephone (213) 576-6600 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

r. Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211).

s. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

B. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E.

C. Special Provisions

1. Reopener Provisions

a. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the federal CWA, and amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

b. This Order may be reopened to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as part of this Order and based on the results of the RPA.

c. This Order may be reopened and modified in accordance with the provisions set forth in 40 C.F.R. parts 122 and 124, to include requirements for the implementation of the watershed management approach or to include new Minimum Levels (MLs).

d. This Order may be reopened and modified to revise effluent limitations as a result of future Basin Plan Amendments, such as an update of an objective or the adoption of a TMDL for the Santa Monica Bay.

e. This Order may be reopened upon submission by the Discharger of adequate information, as determined by the Regional Water Board, to provide for dilution credits or a mixing zone, as may be appropriate.

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f. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Toxicity Reduction Requirements. The Discharger shall prepare and submit a copy of the Discharger's initial investigation Toxicity Reduction Evaluation (TRE) workplan in accordance with Monitoring and Reporting Program section V.C.

b. Mixing Zone Study Workplan. The dilution ratio of 80:1 (receiving water to effluent) established in Order No. R4-2013-0025 is retained in this Order for discharges to the Pacific Ocean via Discharge Point 001. The Discharger must provide to the Regional Water Board a work plan to conduct an updated mixing zone study. The study shall identify the boundary of the zone of initial dilution (ZID) based on modeling results, and include monitoring upstream of the discharge point, directly above the discharge location, at the boundary of the ZID and outside the ZID for the list of constituents included in Table 1 of the Ocean Plan, to confirm the assumptions made by the model.

3. Storm Water Pollution Prevention Plan (SWPPP), Best Management Practices Plan (BMPP), and Spill Contingency Plan (SCP)

The Discharger shall submit to the Regional Water Board, **within 90 days** of the effective date of this Order:

a. An updated SWPPP that describes site-specific management practices for minimizing contamination of storm water runoff and for preventing contaminated storm water runoff from being discharged directly to waters of the state. The SWPPP shall be developed in accordance with the requirements in Attachment G.

b. A BMPP that will be implemented to reduce the discharge of pollutants and/or trash to the receiving water. The BMPP may be included within the SWPPP as a description of best management practices (BMPs). Attachment G provides information regarding the description of BMPs. The BMPP shall include site-specific plans and procedures implemented and/or to be implemented to prevent hazardous waste/material from being discharged to waters of the state. Further, the Discharger shall assure that the storm water discharges from the Facility would neither cause, nor contribute to the exceedance of water quality standards and objectives, nor create conditions of nuisance in the receiving water, and that any potential unauthorized discharges (i.e., spills) to the receiving water have been effectively prohibited. In particular, a risk assessment of each area identified by the Discharger shall be performed to determine the potential for hazardous or toxic waste/material discharge to surface waters.

c. An SCP that includes a technical report on the preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events at the site.

Plans shall cover all areas of the Facility and shall include an updated drainage map for the Facility. The Discharger shall identify on a map of appropriate scale the areas that contribute runoff to the permitted discharge points. The Discharger shall describe the activities in each area and the potential for contamination of storm water runoff and the discharge of hazardous waste/material and/or trash.

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The Discharger shall implement the SWPPP, BMPP, and SCP within 10 days of the approval by the Executive Officer or no later than 90 days after submission to the Regional Water Board, whichever comes first. The SWPPP and the BMPP shall be reviewed annually and at the same time; and the SCP shall also be reviewed annually. Updated information shall be submitted to the Regional Water Board within 30 days of revision.

4. Construction, Operation and Maintenance Specifications

a. The Discharger shall at all times properly operate and maintain all facilities and systems installed or used to achieve compliance with this order.

b. The Discharger shall develop and maintain a record of all spills from the facility. A spill shall be defined as any release of waste not allowed under Section III.A of this Order that causes, or probably will cause, a discharge to any waters of the state. (Health and Safety Code section 5411.5). This record shall be made available to the Regional Water Board and USEPA upon request. The Discharger shall submit to the Regional Water Board and USEPA a report listing all spills, overflows or bypasses occurring during the previous quarter in the quarterly monitoring reports. The reports shall provide the date and time of each spill, the location of each spill, the estimated volume of each spill, including gross volume, amount recovered and amount not recovered; the cause of each spill, whether each spill, entered a receiving water and, if so, the name of the water body and whether it entered via storm drains or other man-made conveyances; mitigation measures implemented; corrective measures implemented or proposed to be implemented to prevent/minimize future occurrences; and beneficial uses impacted.

5. Special Provisions for Municipal Facilities—Not Applicable

6. Other Special Provisions—Not Applicable

7. Compliance Schedules—Not Applicable

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV of this Order will be determined as specified below:

A. Single Constituent Effluent Limitation

If the concentration of the pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (see Reporting Requirement I.H. of the MRP), then the Discharger is out of compliance.

B. Effluent Limitations Expressed as a Sum of Several Constituents

If the sum of the individual pollutant concentrations is greater than the effluent limitation, then the Discharger is out of compliance. In calculating the sum of the concentrations of a group of pollutants, consider constituents reported as ND or DNQ to have concentrations equal to zero, provided that the applicable ML is used.

C. Effluent Limitations Expressed as a Median

In determining compliance with a median limitation, the analytical results in a set of data will be arranged in order of magnitude (either increasing or decreasing order); and

1. If the number of measurements (n) is odd, then the median will be calculated as $= X_{(n+1)/2}$, or

2. If the number of measurements (n) is even, then the median will be calculated as $= [X_{n/2} + X_{(n/2)+1}]/2$, i.e., the midpoint between the n/2 and n/2+1 data points.

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D. Multiple Sample Data

When determining compliance with an AMEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

E. Average Monthly Effluent Limitation (AMEL)

If the average (or when applicable, the median determined by subsection E above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

In determining compliance with the AMEL, the following provisions shall also apply to all constituents:

1. If the analytical result of a single sample, monitored monthly, quarterly, semiannually, or annually, does not exceed the AMEL for that constituent, the Discharger has demonstrated compliance with the AMEL for that month.

2. If the analytical result of a single sample, monitored monthly, quarterly, semiannually, or annually, exceeds the AMEL for any constituent, the Discharger shall collect four additional samples at approximately equal intervals during the month. All five analytical results shall be reported in the monitoring report for that month, or 45 days after results for the additional samples were received, whichever is later.

When all sample results are greater than or equal to the reported ML (see Reporting Requirement I.G. of the MRP), the numerical average of the analytical results of these five samples will be used for compliance determination.

When one or more sample results are reported as "not-detected", or "detected, but not quantified (DNQ)" (see section I.G of the MRP), the median value of these samples shall be used for compliance determination. If one or both of the middle values is ND or DNQ, the median shall be the lower of the two middle values.

3. In the event of noncompliance with an AMEL, the sampling frequency for that constituent shall be increased to weekly and shall continue at this level until compliance with the AMEL has been demonstrated.

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F. Maximum Daily Effluent Limitations (MDEL)

If a daily discharge on a calendar day exceeds the MDEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for that day for that parameter. If no sample (daily discharge) is taken over a calendar day, no compliance determination can be made for that day with respect to an effluent violation determination, but compliance determination can be made for that day with respect to reporting violation determination.

G. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

H. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

I. Mass and Concentration Limitations

Compliance with mass effluent limitations and concentration effluent limitations for the same parameter shall be determined separately. When the concentration for a parameter in a sampe is reported as ND or DNQ, the corresponding mass emission rate determined using that sample concentration shall also be reported as ND or DNQ.

J. Bacterial Standards and Analyses

The geometric mean used for determining compliance with bacterial standards is calculated using the following equation:

Where n is the number of days samples were collected during the period and C is the concentration of bacteria (MPN/100mL or CFU/100mL) found on each day of sampling. For bacterial analyses, sample dilutions should be performed so the expected range of values is bracketed (for example, with multiple tube fermentation method or membrane filtration method, 2 to 16,000 per 100 mL for total and fecal coliform, at a minimum, and 1 to 1,000 per 100 mL for *Enterococcus*). The detection method used for each analysis shall be reported with the results of the analysis.

Detection methods used for coliforms (total, fecal, and *E. coli*) and *Enterococcus* shall be those presentated in Table 1A of 40 C.F.R. part 136 (revised May 18, 2012), unless alternate methods have been approved by USEPA pursuant to 40 C.F.R. part 136 or improved methods have been determined by the Executive Officer and/or USEPA.

K. Chronic Toxicity

The discharge is subject to determination of “Pass” or “Fail” from a chronic toxicity test using the TST statistical t-test approach described in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (USEPA 833-R-10-003, 2010), Appendix A, Figure A-1, Table A-1, and Appendix B, Table B-1. The null hypothesis (Ho) for

the TST statistical approach is: Mean discharge In-stream Waste Concentration (IWC) response ≤0.75 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail." This is a t-test (formally Student's t-test), a statistical analysis comparing two sets of replicate observations – in the case of a Whole Effluent Toxicity (WET) test, only two test concentrations (i.e. a control and IWC). The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e. if the IWC or receiving water concentration differs from the control (the test result is "Pass" or "Fail")). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances.

The Maximum Daily Effluent Limitation (MDEL) for chronic toxicity is exceeded and a violation will be flagged when a chronic toxicity test, analyzed using the TST statistical approach, results in "Fail".

The chronic toxicity MDEL is set at the IWC for the discharge (1.23% effluent for Discharge Point 001) and expressed in units of the TST statistical approach ("Pass" or "Fail"). All NPDES effluent compliance monitoring for the chronic toxicity MDEL shall be reported using only the IWC effluent concentration and negative control, expressed in units of the TST. The TST hypothesis (Ho) (see above) is statistically analyzed using the IWC and a negative control. Effluent toxicity tests shall be run using *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). The Regional Water Board's review of reported toxicity test results will include review of concentration-response patterns as appropriate (see Fact Sheet discussion at V.C.6). As described in the laboratory audit directives to the San Jose Creek Water Quality Laboratory from the State Water Resources Control Board dated August 07, 2014, and from USEPA dated December 24, 2013, the Percent Minimum Significant Difference (PMSD) criteria only apply to compliance reporting for the No Observed Effect Concentration (NOEC) and the sublethal statistical endpoints of the NOEC, and therefore are not used to interpret TST results. Standard Operating Procedures used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent (and receiving water) toxicity test measurement results from the TST statistical approach, including those that incorporate a consideration of concentration-response patterns, must be submitted to the Regional Water Board (40 CFR § 122.41(h)). The Regional Water Board will make a final determination as to whether a toxicity test result is valid, and may consult with the Discharger, USEPA, the State Water Board's Quality Assurance Officer, or the State Water Board's Environmental Laboratory Accreditation Program as needed.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)
Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Best Management Practices (BMPs)
BMPs are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and non-structural controls, and operation maintenance procedures, which can be applied before, during, and/or after pollution-producing activities.

Bioaccumulative
Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic
Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)
CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit
Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Dry Weather
Dry weather limitations apply when wet weather conditions are not met. Wet weather conditions apply during a rainfall event of 0.1-inch or more in a 24-hour period and for the 72 hours following the end of the associated rainfall event.

EC25
EC25 is a point estimate of the toxicant concentration that would cause an observable adverse effect (e.g., death, immobilization, or serious incapacitation) in 25 percent of the test organisms.

Effluent Concentration Allowance (ECA)
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the appropriate areas of the Ventura River, Santa Clara River, Calleguas Creek, Ballona Creek, Dominguez Channel, Los Angeles River and San Gabriel River. Estuaries do not include inland surface waters or ocean waters.

Existing Discharger
Any discharger that is not a new discharger. An existing discharger includes an "increasing discharger" (i.e., any existing facility with treatment systems in place for its current discharge that is or will be expanding, upgrading, or modifying its permitted discharge after the effective date of this Order).

Four-Day Average of Daily Maximum Flows
The average of daily maxima taken from the data set in four-day intervals.

Inland Surface Waters
All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the n/2 and n/2+1).

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone
Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

Persistent Pollutants
Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of

the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention
Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Resources Control Board (State Water Board) or the Regional Water Board.

Reporting Level (RL)
The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Significant Storm Event
A continuous discharge of storm water for a minimum of one hour, or the intermittent discharge of storm for a minimum of three hours in a 12-hour period.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests).

Wet Weather
Wet weather conditions apply during a rainfall event of 0.1-inch or more in a 24-hour period and for the 72 hours following the end of the associated rainfall event.

ACRONYMS AND ABBREVIATIONS

AMEL	Average Monthly Effluent Limitation
B	Background Concentration
BAT	Best Available Technology Economically Achievable
Basin Plan	*Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practices
BMPP	Best Management Practices Plan
BPJ	Best Professional Judgment
BOD	Biochemical Oxygen Demand 5-day @ 20 °C
BPT	Best Practicable Treatment Control Technology
C	Water Quality Objective
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
C.F.R.	Code of Federal Regulations
CTR	California Toxics Rule
CV	Coefficient of Variation
CWA	Clean Water Act
CWC	Water Code
Discharger	Chevron Products Company
DMR	Discharge Monitoring Report
DNQ	Detected But Not Quantified
ELAP	California Department of Public Health Environmental Laboratory Accreditation Program
ELG	Effluent Limitations, Guidelines and Standards
Facility	El Segundo Refinery
Gpd	gallons per day
IC	Inhibition Coefficient
IC_{15}	Concentration at which the organism is 15% inhibited
IC_{25}	Concentration at which the organism is 25% inhibited
IC_{40}	Concentration at which the organism is 40% inhibited
IC_{50}	Concentration at which the organism is 50% inhibited
IWC	In-stream Waste Concentration
LA	Load Allocations
LOEC	Lowest Observed Effect Concentration
µg/L	micrograms per Liter
mg/L	milligrams per Liter
MDEL	Maximum Daily Effluent Limitation
MEC	Maximum Effluent Concentration
MGD	Million Gallons Per Day
ML	Minimum Level
MRP	Monitoring and Reporting Program
ND	Not Detected
NOEC	No Observable Effect Concentration
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
NTR	National Toxics Rule
OAL	Office of Administrative Law
PMEL	Proposed Maximum Daily Effluent Limitation

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PMP	Pollutant Minimization Plan
POTW	Publicly Owned Treatment Works
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
Ocean Plan	*Water Quality Control Plan for Ocean Waters of California*
Regional Water Board	California Regional Water Quality Control Board, Los Angeles Region
RPA	Reasonable Potential Analysis
SCP	Spill Contingency Plan
Sediment Quality Plan	*Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality*
SIP	State Implementation Policy (*Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*)
SMR	Self-Monitoring Reports
State Water Board	California State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TAC	Test Acceptability Criteria
Thermal Plan	*Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California*
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document
TSS	Total Suspended Solid
TST	Test of Significant Toxicity
TU_c	Chronic Toxicity Unit
USEPA	United States Environmental Protection Agency
WDR	Waste Discharge Requirements
WET	Whole Effluent Toxicity
WLA	Waste Load Allocations
WQBELs	Water Quality-Based Effluent Limitations
WQS	Water Quality Standards
%	Percent

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ATTACHMENT B – MAPS

Map B-1: Facility Location

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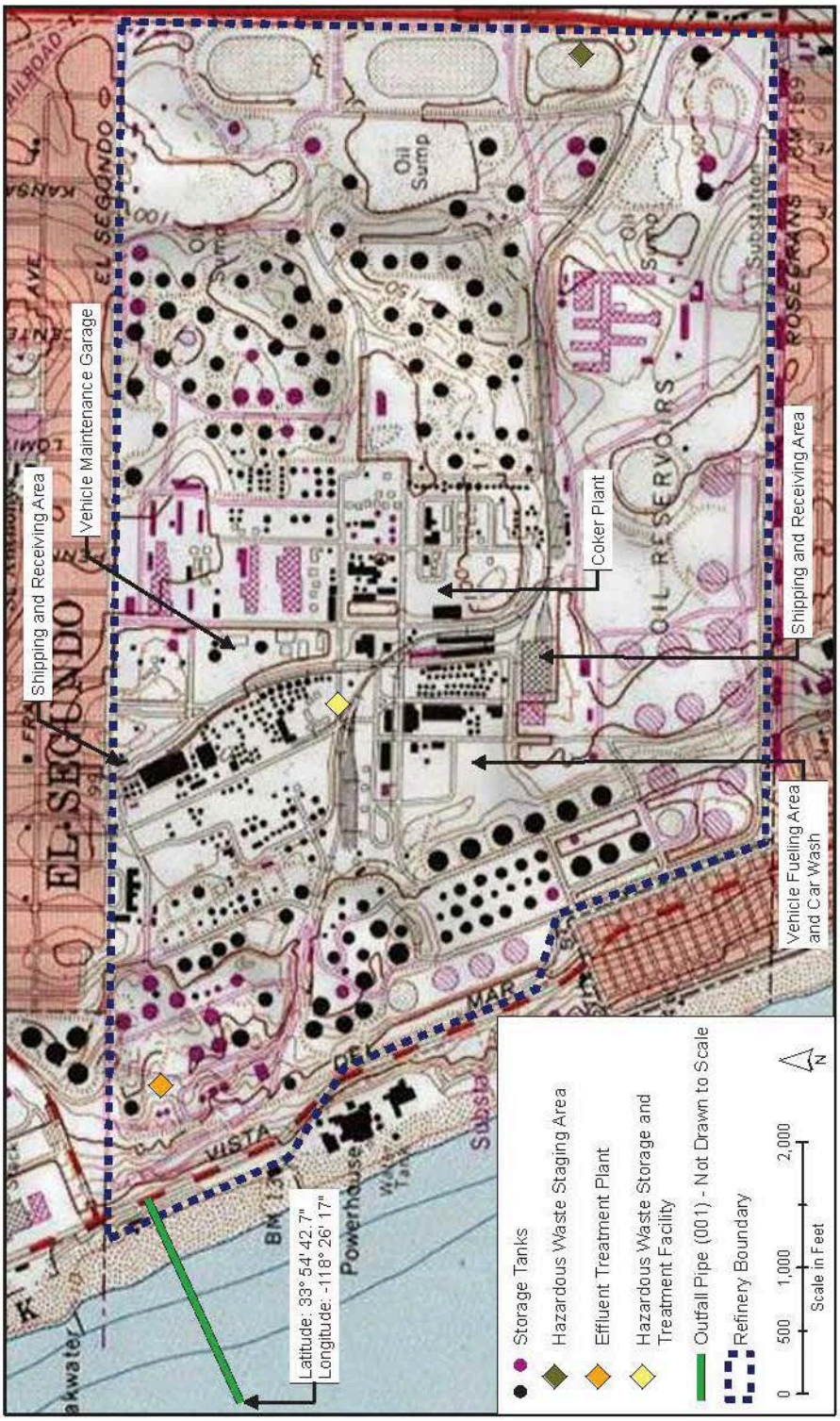
Map B-2: Site Plan



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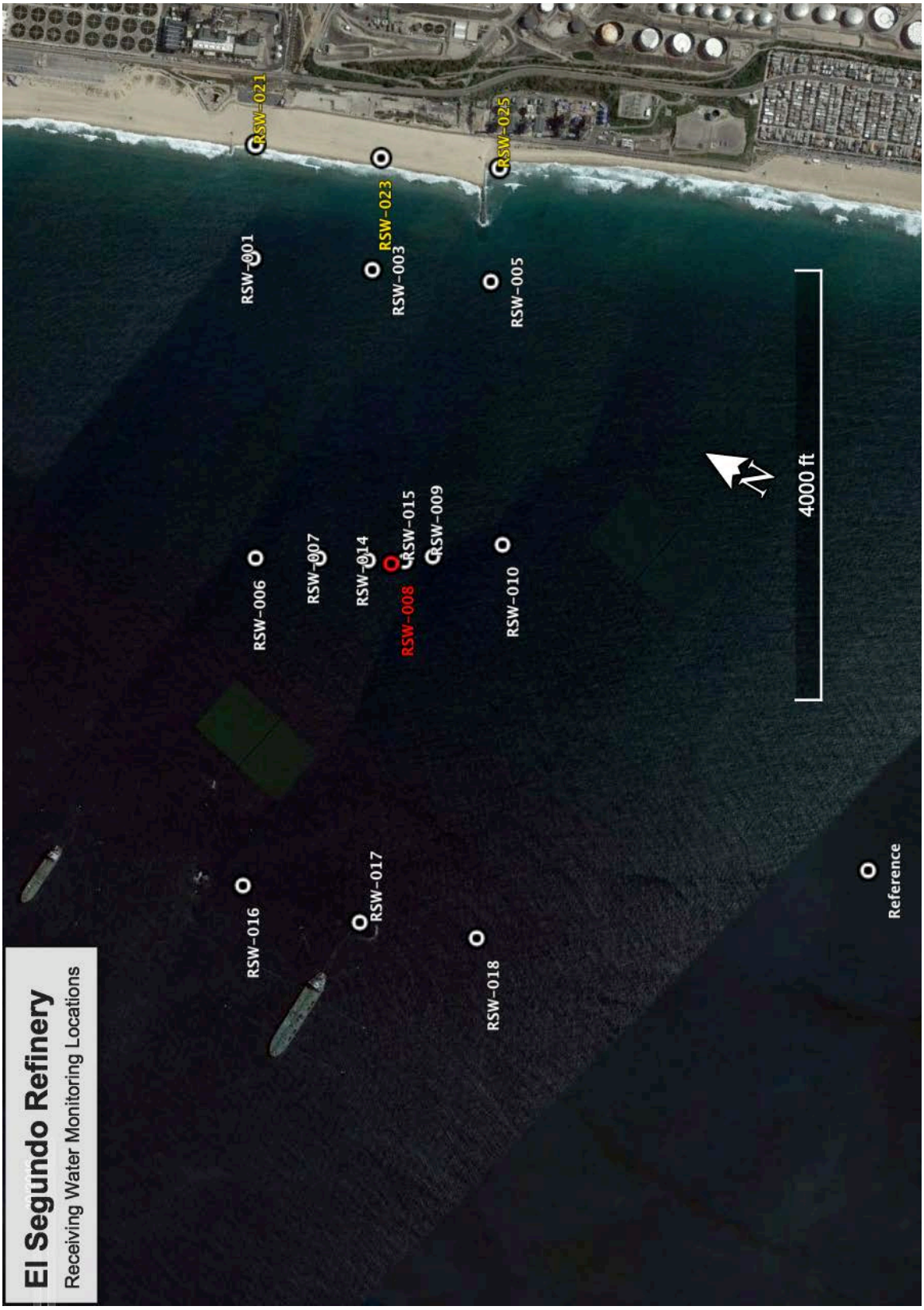
Map B-3: Receiving Water Monitoring Locations



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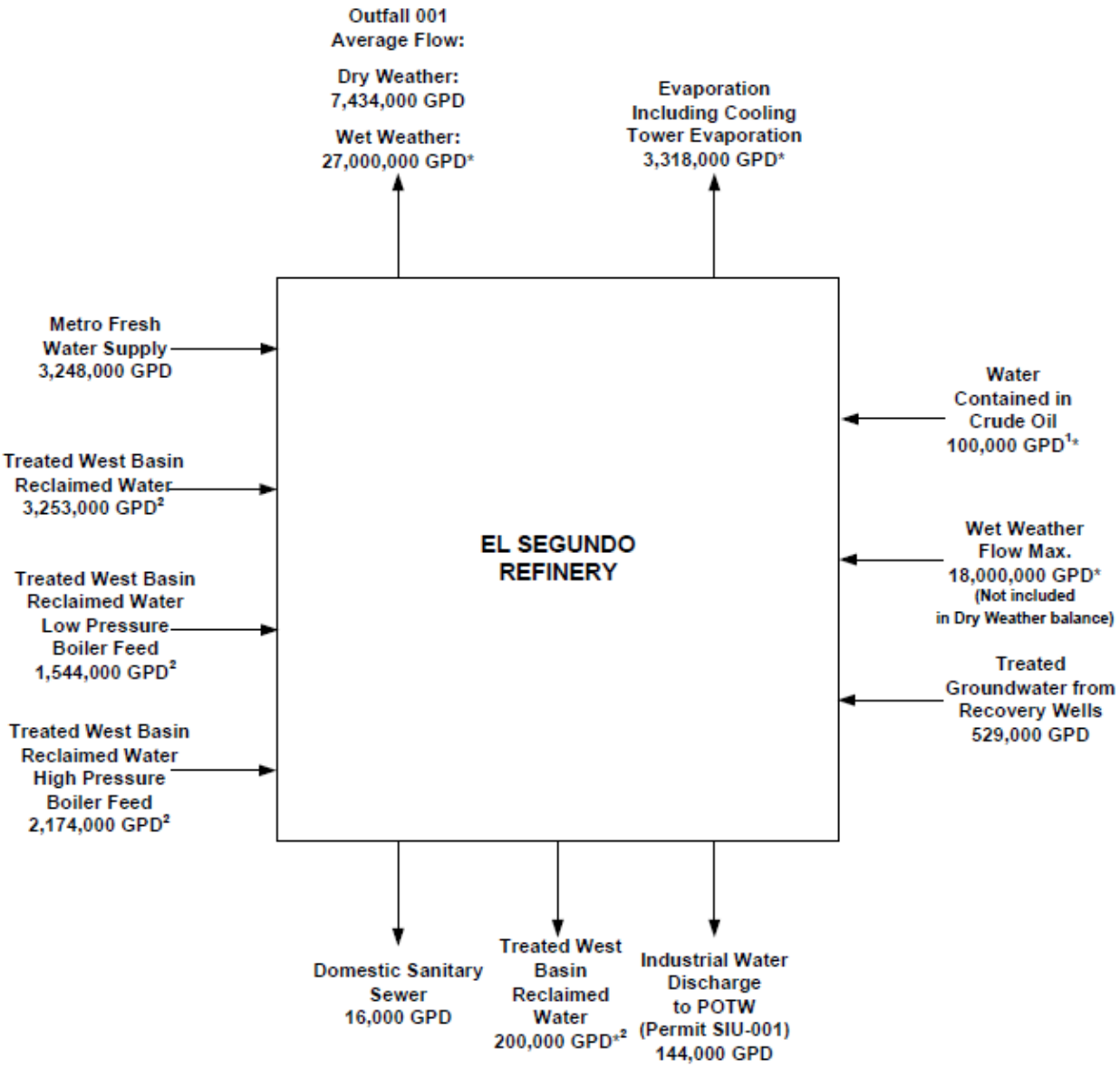
ATTACHMENT C – FLOW SCHEMATIC

Figure C-1: Overall Facility Water Balance



[1] Dependent on Quality of Crude
[2] Tertiary Treated Reclaimed Water from West Basin
* Flow based on Best Available Engineering Estimates

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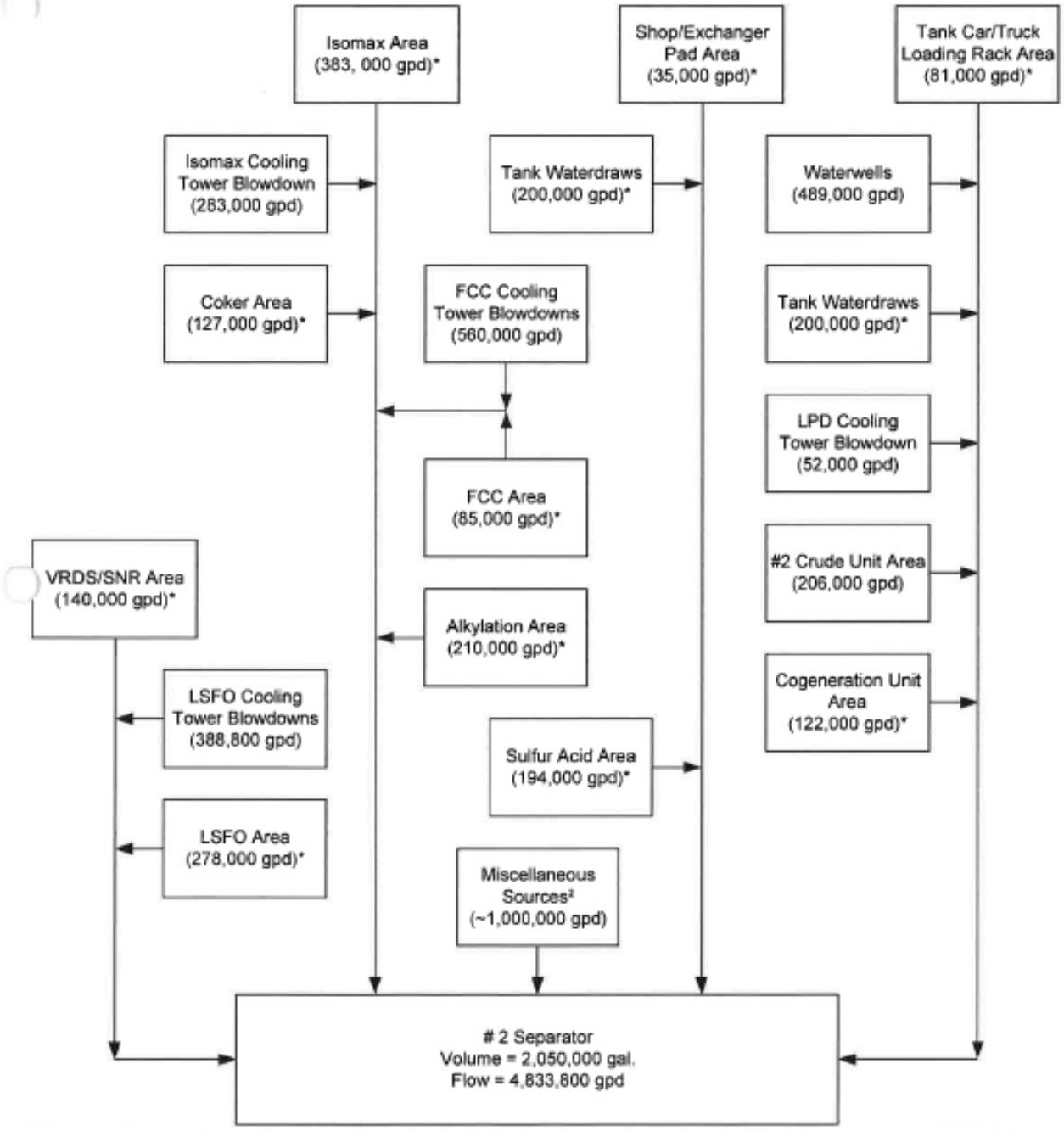
Figure C-2: #2 Separator (Unsegregated System) Flow Contributors[1]



[1] All flows could change significantly because of rainfall and variability in refinery systems. Overall facility design flow is up to 27 MGD during dry and wet weather. The wastewater is comprised of refinery wastewater, petroleum hydrocarbon, contaminated shallow well groundwater, intermittent sources and rainfall runoff

[2] Miscellaneous Sources include wastewater and storm water from off-site Chevron facilities, plant washdowns, drain temperature control, equipment cleaning and hydrotesting, lab waste water, fire systems testing and training, storm water from construction sites including those one acre or more, etc.

* Flow based on Best Available Engineering Estimates

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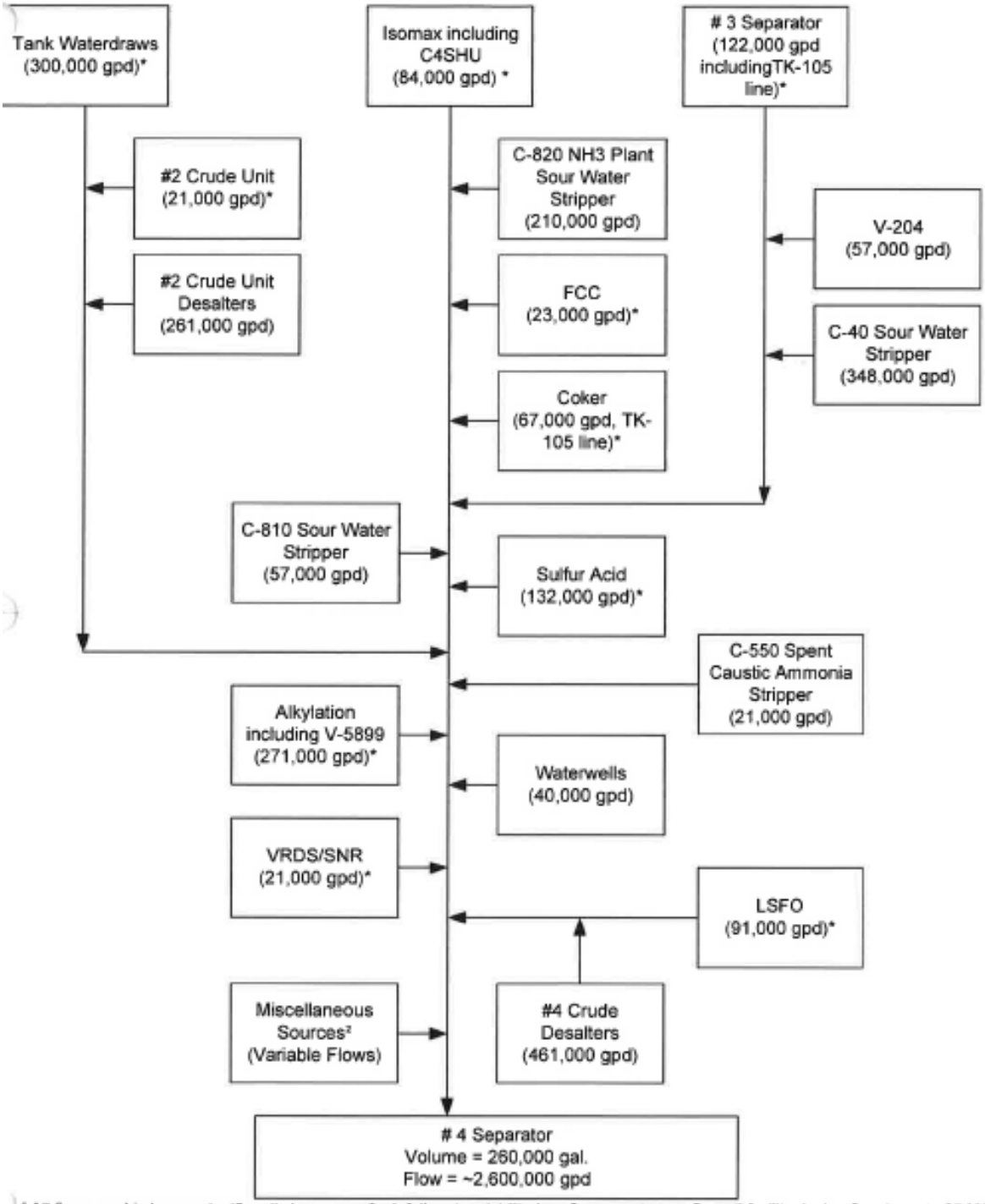
Figure C-3: #4 Separator (Unsegregated System) Flow Contributors[1]



[1] All flows could change significantly because of rainfall and variability in refinery systems. Overall facility design flow is up to 27 MGD during dry and wet weather. The wastewater is comprised of refinery wastewater, petroleum hydrocarbon, contaminated shallow well groundwater, intermittent sources and rainfall runoff

[2] Miscellaneous Sources include wastewater and storm water from off-site Chevron facilities, storm water, off-spec unseg. water, drain temperature control, cooling tower blowdowns, centrifuges, collection basins, equipment cleanings, etc.

* Flow based on Best Available Engineering Estimates

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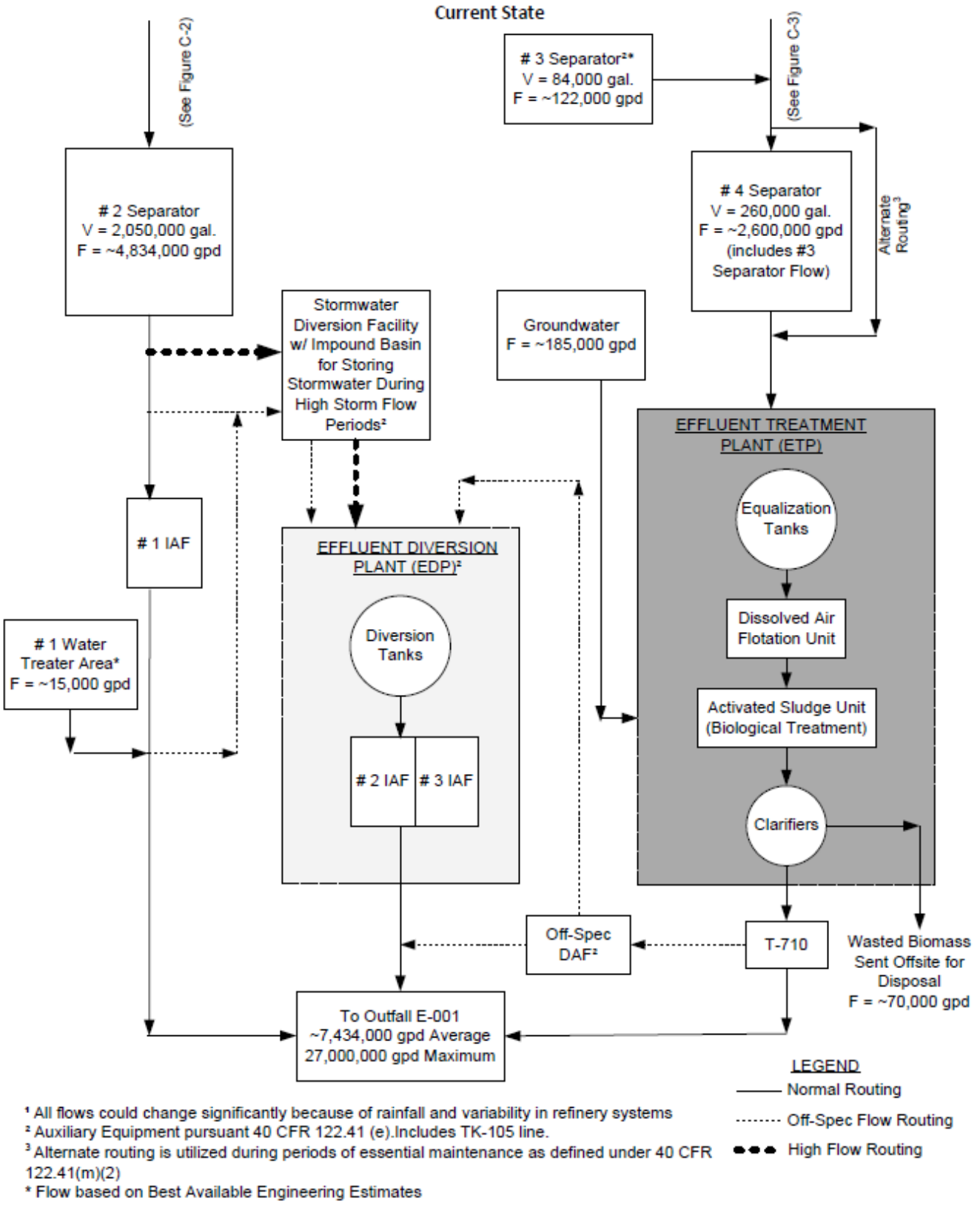
Figure C-4: Current Outfall 001 Flow Contributors[1]



[1] All flows could change significantly because of rainfall and variability in refinery systems
[2] Auxiliary Equipment pursuant 40 CFR 122.41 (e).Includes TK-105 line.
[3] Alternate routing is utilized during periods of essential maintenance as defined under 40 CFR 122.41(m)(2)
* Flow based on Best Available Engineering Estimates

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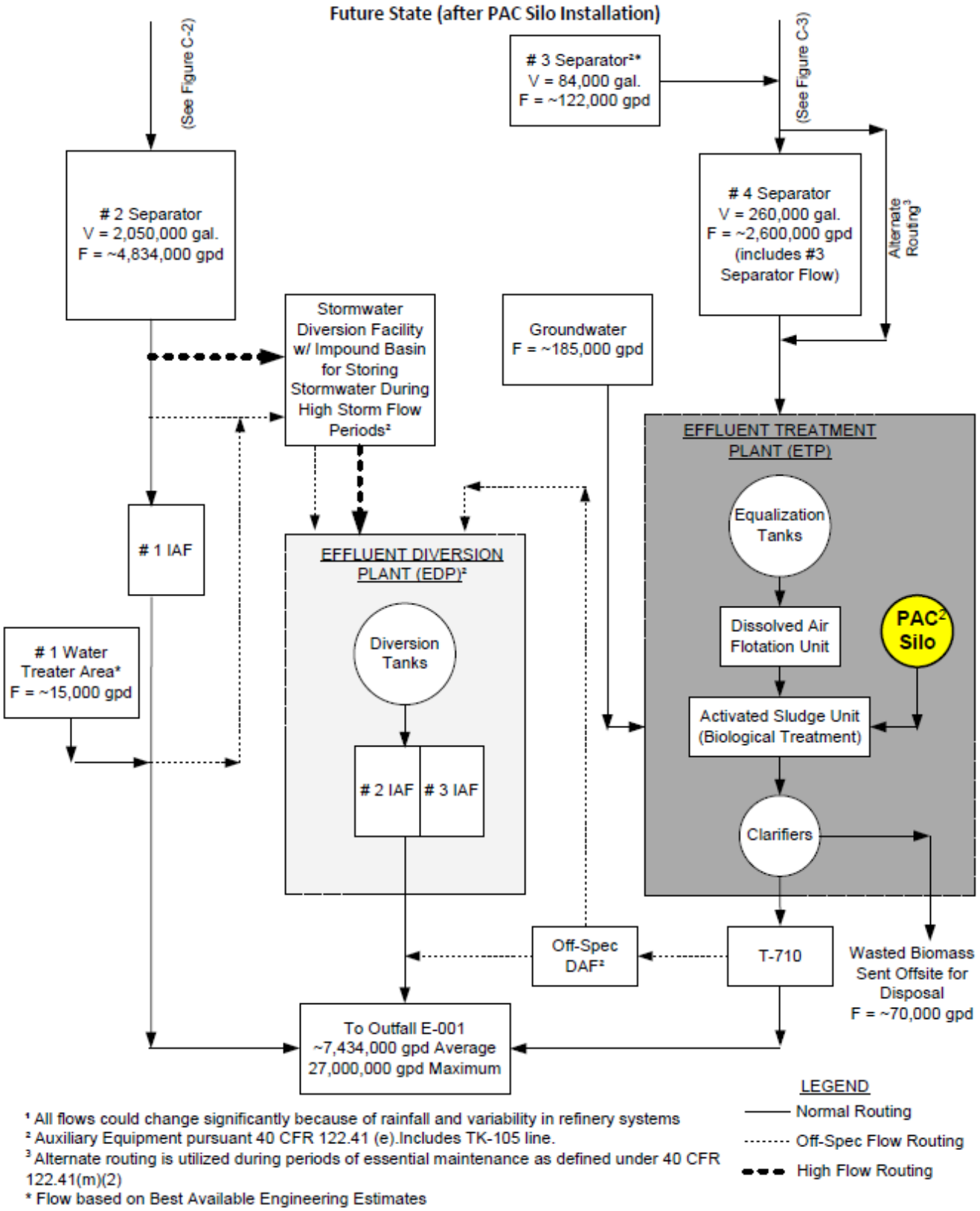
Figure C-5: Future Outfall 001 Flow Contributors[1]



[1] All flows could change significantly because of rainfall and variability in refinery systems
[2] Auxiliary Equipment pursuant 40 CFR 122.41 (e).Includes TK-105 line.
[3] Alternate routing is utilized during periods of essential maintenance as defined under 40 CFR 122.41(m)(2)
* Flow based on Best Available Engineering Estimates

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ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)

b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

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5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. As of December 21, 2020, all notices must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). As of December 21, 2020, all notices must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a

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notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant constituents or as required under 40 C.F.R. chapter 1, subchapter N. For the purposes of this paragraph, a method is sufficiently sensitive when:

1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant constituent, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant constituent or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant constituent in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant constituent in the discharge; or

2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N for the measured pollutant or pollutant constituent.

In the case of pollutants or pollutant constituents for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant constituents. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)

2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent

responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. chapter 1, subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR reporting form specified by the Regional Water Board or State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather.

2. As of December 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the Regional Water Board and must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Regional Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

3. The following shall be included as information that must be reported within 24 hours:

a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

a. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

4. The Regional Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Boardmay also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the appropriate initial recipient defined in 40 C.F.R. section 127.2(b). USEPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. USEPA will update and maintain this listing. (40 C.F.R. § 122.41(l)(9).)

VI. STANDARD PROVISIONS – ENFORCEMENT

The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):

a. 100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));

c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

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d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP) NO. 1603

CONTENTS

TABLES

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP) NO. 1603

Section 308 of the federal Clean Water Act (CWA) and sections 122.41(h), (j)-(*l*), 122.44(i), and 122.48 of title 40 of the Code of Federal Regulations (40 C.F.R.) require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring, reporting, and recordkeeping requirements that implement the federal and California laws and/or regulations.

I. GENERAL MONITORING PROVISIONS

A. An effluent sampling station shall be established for the point of discharge (Discharge Point 001, Latitude 33.908056º North, Longitude -118.438056º West) and shall be located where representative samples of that effluent can be obtained.

B. Effluent samples shall be taken downstream of any addition to treatment works and prior to mixing with the receiving waters.

C. The Regional Water Board shall be notified in writing of any change in the sampling stations once established or in the methods for determining the quantities of pollutants in the individual waste streams.

D. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 (revised May 18, 2012); or, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Resources Control Board (State Water Board).

E. Laboratory Certification. Laboratories analyzing effluent samples and receiving water samples shall be certified by the State Water Board, Drinking Water Division, Environmental Laboratory Accreditation Program (ELAP), in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports. A copy of the laboratory certification shall be provided each time a new certification and/or renewal of the certification is obtained from ELAP.

F. The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

G. For any analyses performed for which no procedure is specified in the USEPA guidelines or in the MRP, the constituent or parameter analyzed and the method or procedure used must be specified in the monitoring report.

H. Each monitoring report must affirm in writing that "all analyses were conducted at a laboratory certified for such analyses by the State Water Board or approved by the Executive Officer and in accordance with current USEPA guideline procedures or as specified in this MRP".

I. The monitoring reports shall specify the 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, performance goals, and receiving water limitations, analytical data shall be reported by one of the following methods, as appropriate:

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

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2. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML; or,

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

Analytical data reported as "less than" for the purpose of reporting compliance with permit limitations shall be the same or lower than the permit limit(s) established for the given parameter.

Current ML's (Attachment H) are those listed in Appendix II of the California Ocean Plan (Ocean Plan). In addition, samples for metals analyses, waste seawater discharge, storm water effluent samples, reference station samples, and receiving water samples must be analyzed by the approved analytical method with the lowest MDL (currently Inductively Coupled Plasma/Mass Spectrometry) described in the Ocean Plan.

J. The MLs employed for effluent analyses to determine compliance with effluent limitations shall be lower than the effluent limitations established in this Order for a given parameter. If the ML value is not below the effluent limitation, then the lowest ML value and its associated analytical method shall be selected for compliance purposes. At least once a year, the Discharger shall submit a list of the analytical methods employed for each test and associated laboratory QA/QC procedures.

K. The MLs employed for effluent analyses not associated with determining compliance with effluent limitations in this order shall be lower than the lowest applicable water quality objective, for a given parameter. Water quality objectives for parameters may be found in Table 1 of the Ocean Plan. If the ML value is not below the water quality objective, then the lowest ML value and its associated analytical method shall be selected for compliance purposes. At least once a year, the Discharger shall submit a list of the analytical methods employed for each test, the associated laboratory QA/QC procedures, reporting levels (RLs), and method detection limits (MDLs).

The Regional Water Board, in consultation with the State Water Board Quality Assurance Program, shall establish a ML that is not contained in Attachment H to be included in the Discharger's permit in any of the following situations:

1. When the pollutant under consideration is not included in Attachment H;

2. When the Discharger and Regional Water Board agree to include in the permit a test method that is more sensitive than that specified in 40 C.F.R. part 136 (revised May 18, 2012);

3. When the Discharger agrees to use an ML that is lower than that listed in Attachment H;

4. When the Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Attachment H, and proposes an appropriate ML for their matrix, or;

5. When the Discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the USEPA-approved method 1613 for dioxins and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the Discharger, the Regional Water Board, and the State Water Board shall agree on a lowest quantifiable limit and that limit will substitute for the ML for reporting and compliance determination purposes.

L. Water/wastewater samples must be analyzed within allowable holding time limits as specified in section 136.3. All QA/QC items must be run on the same dates the samples were actually analyzed, and the results shall be reported in the Regional Water Board format, when it

becomes available, and submitted with the laboratory reports. Proper chain of custody procedures must be followed, and a copy of the chain of custody shall be submitted with the report.

M. All analyses shall be accompanied by the chain of custody, including but not limited to data and time of sampling, sample identification, and name of person who performed sampling, date of analysis, name of person who performed analysis, QA/QC data, method detection limits, analytical methods, copy of laboratory certification, and a statement, under penalty of perjury, executed by the person responsible for the laboratory.

N. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments to insure accuracy of measurements, or shall insure that both equipment activities will be conducted.

O. Field analyses for parameters that require short sample holding times such as pH, total residual chlorine and temperature may be performed on-site by properly-trained personnel acting on behalf of the Discharger. These analyses shall be performed using properly-calibrated and maintained portable instruments in accordance with the methods found at 40 C.F.R. part 136. Records of these analyses shall be maintained at the discharge facility so as to be available at all times to operating personnel and Regional Water Board staff. These records shall include the standard operating and quality-control procedures for all field analyses, records of personnel proficiency training and records of instrument calibration and maintenance. Results of these analyses shall be submitted to the Regional Water Board as part of the corresponding periodic monitoring report. Documentation of the results shall include measurement values, data and time of sample collection, name of analyst and instrument calculation information.

P. For parameters that both average monthly and daily maximum limits are specified and the monitoring frequency is less than four times a month, the following shall apply. If an analytical result is greater than the average monthly limit, the Discharger shall collect four additional samples at approximately equal intervals during the month, until compliance with the average monthly limit has been demonstrated. All five analytical results shall be reported in the monitoring report for that month, or 45 days after results for the additional samples were received, whichever is later. In the event of noncompliance with an average monthly effluent limitation, the sampling frequency for that constituent shall be increased to weekly and shall continue at this level until compliance with the average monthly effluent limitation has been demonstrated. The Discharger shall provide for the approval of the Executive Officer a program to ensure future compliance with the average monthly limit.

Q. Each monitoring report shall state whether or not there was any change in the discharge as described in the Order during the reporting period.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	Effluent samples for Discharge Point 001 shall be collected from a concrete "forebay" structure following the combination of the treated "segregated" and "unsegregated" waste streams and prior to the effluent pipe to Santa Monica Bay. (Latitude 33.908056º North, Longitude -118.438056º West)
--	EFF-T-710	T-710 represents the combined effluent flow from the segregated system downstream of the Activated Sludge Clarifier Units (T-601 and T-701) which are the final treatment units on the segregated side. T-710 is a sampling location and is not actually a treatment unit. Only bacteria indicators (total coliform, fecal coliform and *enterococcus*) will be sampled at T-710.
---	RSW-001	Directly inshore of Station RSW-006, at a depth of 20 feet.
---	RSW-003	Same as above, at a depth of 20 feet.
---	RSW-005	Directly inshore of RSW-010, at a depth of 20 feet.
---	RSW-006	1000 feet upcoast of the discharge, at a depth of 40 feet.
---	RSW-007	500 feet upcoast of the discharge, at a depth of 40 feet.
---	RSW-008	At the discharge point, at a depth of 40 feet.
---	RSW-009	500 feet downcoast of the discharge point, at a depth of 40 feet.
---	RSW-010	1000 feet downcoast of the discharge point, at a depth of 40 feet.
---	RSW-014	100 feet upcoast of the discharge point; at a depth of 40 feet.
---	RSW-015	100 feet downcoast of the discharge point, at a depth of 40 feet.
---	RSW-016	Directly offshore of RSW-006, at a depth of 60 feet.
---	RSW-017	Directly offshore of RSW-008, at a depth of 60 feet.
---	RSW-018	Directly offshore of RSW-010, at a depth of 60 feet.
---	RSW-021	Directly inshore of RSW-001, in the surf zone.
---	RSW-023	Directly inshore of RSW-003, in the surf zone.
---	RSW-025	Directly inshore of RSW-005, in the surf zone.
---	B1	Benthic monitoring location at same location as RSW-001.
---	B5	Benthic monitoring location at same location as RSW-005.
---	B6	Benthic monitoring location at same location as RSW-006.
---	B7	Benthic monitoring location at same location as RSW-007.
---	B8	Benthic monitoring location at same location as RSW-008.
---	B9	Benthic monitoring location at same location as RSW-009.
---	B10	Benthic monitoring location at same location as RSW-010.
---	B16	Benthic monitoring location at same location as RSW-016.
---	B18	Benthic monitoring location at same location as RSW-018.

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes. The locations of receiving water stations RSW-001 to RSW-018 are depicted in Map B-3 of Attachment B.

III. INFLUENT MONITORING REQUIREMENTS—NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

The Discharger shall monitor the discharge of treated wastewater comprised of refinery wastewater, petroleum hydrocarbon contaminated shallow well groundwater, and intermittent sources and rainfall runoff through Discharge Point 001 at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-2. Effluent Monitoring at Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	gpd	Estimate	Continuous[1]	--
Temperature[3]	°F	--	Continuous[1]	-
pH	pH unit	--	Continuous[1]	-
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L[4]	24-Hour Composite	1/Week	[2]
Total Suspended Solids (TSS)	mg/L[4]	24-Hour Composite	1/Week	[2]
Chemical Oxygen Demand (COD)	mg/L[4]	24-Hour Composite	1/Week	[2]
Oil and Grease	mg/L[4]	Grab	1/Week	[2]
Phenolic Compounds	mg/L[4]	24-Hour Composite	1/Month	[2]
Ammonia as Nitrogen	mg/L[4]	24-Hour Composite	1/Week	[2]
Sulfide	mg/L[4]	24-Hour Composite	1/Month	[2]
Total Chromium	mg/L[4]	24-Hour Composite	1/Month	[2]
Hexavalent Chromium (VI)	µg/L[4]	Grab	1/Month	[2]
Settleable Solids	ml/L	Grab	1/Month	[2]
Turbidity	NTU	24-Hour Composite	1/Month	[2]
Acute Toxicity	TU_a	24-Hour Composite	1/Month	[2]
Chronic Toxicity[15]	Pass or Fail, % Effect (TST)	24-Hour Composite	1/Month	[2]
DDT[5]	µg/L[4]	24-Hour Composite	1/Month	[2]
PCBs (as arochlors)[6]	µg/L[4]	24-Hour Composite	1/Month	[2]
PCBs (as individual congeners)	µg/L[4]	24-Hour Composite	1/Month	[2,7]
Total coliform[8]	MPN/100ml	Grab	5/Quarter	[2]
Fecal coliform[8]	MPN/100ml	Grab	5/Quarter	[2]
Enterococcus[8]	MPN/100ml	Grab	5/Quarter	[2]
Arsenic, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]
Cadmium, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]
Copper, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]
Lead, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]
Mercury, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]
Nickel, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]
Selenium, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]
Silver, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]
Zinc, Total Recoverable	µg/L[4]	24-Hour Composite	1/Month	[2]

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
TCDD Equivalents[9]	µg/L[4]	24-Hour Composite	1/Month	[2]
Cyanide	µg/L[4]	Grab	1/Quarter	[2]
Total chlorine residual	mg/L[4]	Grab	1/Quarter	[2]
Chlorinated phenolics[10]	µg/L[4]	24-Hour Composite	1/Quarter	[2]
Methyl Tertiary Butyl Ether (MTBE)	µg/L[4]	Grab	1/Quarter	[2]
Endosulfan	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Endrin	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
HCH[12]	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Radioactivity	pCi/ml	24-Hour Composite	2/Year[11]	[13]
Thallium	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Tributyltin	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Acrylonitrile	µg/L[4]	Grab	2/Year[11]	[2]
Aldrin	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Benzidine	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Beryllium	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Bis(2-chloroethyl)ether	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Carbon tetrachloride	µg/L[4]	Grab	2/Year[11]	[2]
Chlordane	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
3,3-Dichlorobenzidine	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Dieldrin	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
1,2-Diphenylhydrazine	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Heptachlor	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Heptachlor epoxide	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Hexachlorobenzene	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
N-nitrosodi-n-propylamine	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
PAHs[14]	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Toxaphene	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
2,4,6-Trichlorophenol	µg/L[4]	24-Hour Composite	2/Year[11]	[2]
Remaining Ocean Plan Table 1 Pollutants	µg/L[4]	Grab/ 24-Hour Composite	2/Year[11]	[2]
Chloroethane	µg/L	Grab	1/Year	[2]
Methylene chloride	µg/L	Grab	1/Year	[2]
1,1,2,2-Tetrachloroethane	µg/L	Grab	1/Year	[2]
1,2-Trans-dichloroethylene	µg/L	Grab	1/Year	[2]
1,2,4-Trichlorobenzene	µg/L	24-Hour Composite	1/Year	[2]
1,1,2-Trichloroethane	µg/L	Grab	1/Year	[2]
Xylenes	µg/L	Grab	1/Year	[2]

1. When continuous monitoring is required, the total daily flow (24-hour basis) shall be reported.
2. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136. For priority pollutants, the methods must meet the lowest minimum levels (MLs) specified in Appendix II of the Ocean Plan (2015) that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods must be approved by the Regional Water Board or State Water Board.
3. Only the maximum temperature for each calendar day shall be reported, except when temperature exceeds 100°F, in which case the reason(s), duration, and time of day of the events of elevated temperature shall be reported.

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4. The mass emission (lbs/day) shall be calculated and reported using the actual concentration and the actual flow rate measured at the time of discharge using the following formula:

   M (lbs/day) = C x Q x 0.00834

   Where:

   M = mass discharge for a pollutant (lbs/day)

   C = actual concentration for a pollutant (µg/L)

   Q = actual discharge flow rate (MGD)

5. Sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, 4,4'-DDD. The Discharger shall comply with the DDT limit of 358 grams/year as specified in the Santa Monica Bay TMDL for DDT and PCBs.

6. The results of PCB analyses using Method 608 shall be reported in Discharge Monitoring Reports and used for assessing compliance with effluent limitations. Using USEPA Method 608, PCBs (as Aroclors) shall mean the sum of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260. Non-detected and/or estimated values shall be treated as zeros in the summation of PCBs as Aroclor.

7. In addition to monitoring PCBs as Aroclors, PCBs shall be analyzed using USEPA proposed Method 1668c and individually quantified and reported. Using proposed Method 1668c, PCBs (as 41 individual congeners) means the sum of 41 congeners: PCB-18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105,110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206. Until the proposed method 1668c for PCBs is incorporated into 40 C.F.R. part 136, the results of PCB analyses using proposed Method 1668c shall be used for informational purposes for the Santa Monica Bay TMDL and shall not be used to assess compliance with effluent limitations.

8. The Discharger shall monitor total coliform, fecal coliform and *enterococcus* at Monitoring Location T-710. For each quarterly monitoring event, at least five (5) weekly samplings and analyses shall be conducted until a geometric mean can be obtained for each parameter (using the five most recent sample results).

9. TCDD Equivalents shall mean the 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. USEPA method 1613 may be used to analyze dioxin and furan congeners.

   Dioxin-TEQ (TCDD Equivalents) = Σ (C_x x TEF_x)

   Where:

   C_x = concentration of dioxin or furan congener x

   TEF_x = TEF for congener x

Toxicity Equivalency Factors

Isomer Group	Toxicity Equivalency Factor (TEF)
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

10. Chlorinated phenolic compounds represent the sum of 2-chlorophenol; 2,4-dichlorophenol; 2,4,6-trichlorophenol; 4-chloro-3-methylphenol; and pentachlorophenol.

11. Monitoring once per semiannual period (January – June, July – December).

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

13. Analyze these radiochemicals by the following USEPA methods: Method 900.0 for gross alpha and gross beta; Method 903.0 or 903.1 for radium-226; Method 904.0 for radium-228; Method 906.0 for tritium; Method 905.0 for strontium-90; Method 908.0 for uranium. Analysis for uranium shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L, or beta greater than 50 pCi/L. If the uranium result is greater than 20 pCi/L, analysis for radium-226 & 228 shall be conducted. If the combined radium-226 & 228 exceeds 5 pCi/L, analyze for tritium and strontium 90.

    A statement certifying that radioactive pollutants were not added to the discharge may be submitted in lieu of monitoring.

14. PAHs shall mean the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo(k)fluoranthene; 1,12-benzoperylene; benzo(a)pyrene; chrysene; dibenzo(a,h)anthracene; fluorine; indeno(1,2,3-cd)pyrene; phenanthrene; and pyrene.

15. Refer to section V, Whole Effluent Toxicity Testing Requirements. "Pass" or "Fail" and "% Effect" for Maximum Daily Effluent Limitation (MDEL).

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V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity

1. Discharge In-stream Waste Concentration (IWC) for Acute Toxicity

The acute IWC is the concentration of a pollutant or the parameter toxicity in the receiving water after mixing. The acute toxicity IWC for Discharge Point 001 is 1.23 percent effluent.

2. Sample Volume and Holding Time

The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. For the receiving water, sufficient sample volume shall also be collected during accelerated monitoring for subsequent TIE studies, if necessary, at each sampling event. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation.

3. Acute Marine Species and Test Methods

If effluent samples are collected from outfalls discharging to receiving waters with salinity $\geq$ 1 ppt, the Discharger shall conduct the following acute toxicity tests on effluent samples at the in-stream waste concentration for the discharge in accordance with species and test methods in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA/821/R-02/012, 2002; Table IA, 40 C.F.R. Part 136). Artificial sea salts or hypersaline brine shall be used to increase sample salinity if needed. In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.

a. A static renewal toxicity test with the silverside, *Menidia beryllina* (Acute Test Method 2006.0). Alternatively, the Discharger may use the acute endpoint in the chronic toxicity test for topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01).

b. A static renewal toxicity test with the mysid, *Americamysis bahia* (Acute Test Method 2007.0).

4. Species Sensitivity Screening

Species sensitivity screening shall be conducted during this permit's first required sample collection. The Discharger shall collect a single effluent sample to initiate and concurrently conduct three toxicity tests using the fish and the invertebrate previously referenced. This sample shall also be analyzed for the parameters required on a monthly frequency for the discharge, during that given month. As allowed under the test method, a second and third sample may be collected for use as test solution renewal water as the multi-day toxicity test progresses. However, that same sample shall be used to renew both the fish and invertebrate tests. The species that exhibits the highest TUa = 100/LC50 during species sensitivity screening shall be used for routine monitoring during the permit cycle, until such time as a rescreening is required (24 months later).

Species sensitivity rescreening is required every 24 months if there has been discharge during dry weather conditions. If the discharge is intermittent and occurs only during wet weather, rescreening is not required. If rescreening is necessary, the Discharger shall rescreen with the fish and the invertebrate species previously referenced and continue to monitor with the most sensitive species. If the first suite of rescreening tests demonstrates that the same species is the most sensitive, then the rescreening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is

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ambiguity, then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

During the calendar month, toxicity tests used to determine the most sensitive test species shall be reported as effluent compliance monitoring results for the acute toxicity MDEL.

5. Quality Assurance and Additional Requirements

Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

a. The discharge is subject to a determination of TUa = 100/LC50 from an acute toxicity test using the point estimate approach in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA/821/R-02/012, 2002).

b. If the effluent toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA/821/R-02/012, 2002) (see Table E-3, below), then the Discharger must re-sample and re-test within 14 days.

c. Dilution water and control water, including brine controls, shall be 1-um-filtered uncontaminated natural seawater, hypersaline brine prepared using uncontaminated natural seawater, or laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

d. Monthly reference toxicant testing is sufficient. All reference toxicant test results should be reviewed and reported using the LC50.

e. The Discharger shall perform toxicity tests on final effluent samples. Chlorine and ammonia shall not be removed from the effluent sample prior to toxicity testing, unless explicitly authorized under this section of the Monitoring and Reporting Program and the rational is explained in the Fact Sheet (Attachment F).

Table E-3. USEPA Test Methods and Test Acceptability Criteria

Species & USEPA Test Method Number	Test Acceptability Criteria (TAC)
Silverside, *Menidia beryllina* (Acute Test Method 2006.0).	90% or greater survival in controls. (required)
Mysid, *Americamysis bahia* (Acute Test Method 2007.0).	90% or greater survival in controls. (required)

6. Accelerated Monitoring Schedule for Maximum Daily Single Result: “monitored and reported TUa > 2.7 TUa”.

The Maximum Daily single result shall be used to determine if accelerated testing needs to be conducted.

Once the Discharger becomes aware of this result, the Discharger shall implement an accelerated monitoring schedule within 5 calendar days of the receipt of the result. However, if the sample is contracted out to a commercial laboratory, the Discharger shall ensure that the first of four accelerated monitoring tests is initiated within seven calendar days of the Discharger becoming aware of the result. The accelerated monitoring schedule

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shall consist of four toxicity tests (including the discharge IWC), conducted at approximately two week intervals, over an eight week period. If each of the accelerated toxicity tests results in "≤ 2.7 TUa", the Discharger shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests results in "> 2.7 TUa", the Discharger shall immediately implement the TRE Process conditions set forth below. During accelerated monitoring schedules, TUa results for acute toxicity tests shall be reported as effluent compliance monitoring results for the acute toxicity MDEL.

B. Chronic Toxicity

1. Chronic Toxicity Testing

a. Discharge In-stream Waste Concentration (IWC) for Chronic Toxicity

The chronic IWC is the concentration of a pollutant or the parameter toxicity in the receiving water after mixing. The chronic toxicity IWC for Discharge Point 001 is 1.23 percent effluent.

b. Sample Volume and Holding Time

The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. For the receiving water, sufficient sample volume shall also be collected during accelerated monitoring for subsequent TIE studies, if necessary, at each sampling event. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation**.**

c. Chronic Marine and Estuarine Species and Test Methods

If effluent samples are collected from outfalls discharging to receiving waters with salinity >1 ppt, the Discharger shall conduct the following chronic toxicity tests on effluent samples, at the in-stream waste concentration for the discharge, in accordance with species and test methods in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). Artificial sea salts or hypersaline brine shall be used to increase sample salinity if needed. In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.

i. A static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.0).

ii. A static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*, and the sand dollar, *Dendraster excentricus* (Fertilization Test Method 1008.0), or a static non-renewal toxicity test with the red abalone, *Haliotis rufescens* (Larval Shell Development Test Method).

iii. A static non-renewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0).

d. Species Sensitivity Screening

Species sensitivity screening shall be conducted during this permit's first required sample collection. The Discharger shall collect a single effluent sample to initiate and concurrently conduct three toxicity tests using the fish, an invertebrate, and the alga species previously referenced. This sample shall also be analyzed for the parameters required on a monthly frequency for the discharge, during that given month. As

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allowed under the test method for the *Atherinops affinis*, a second and third sample may be collected for use as test solution renewal water as the seven-day toxicity test progresses. If the result of all three species is "Pass", then the species that exhibits the highest "Percent Effect" at the discharge IWC during species sensitivity screening shall be used for routine monitoring during the permit cycle. If only one species fails, then that species shall be used for routine monitoring during the permit cycle. Likewise, if two or more species result in "Fail", then the species that exhibits the highest "Percent Effect" at the discharge IWC during the suite of species sensitivity screening shall be used for routine monitoring during the permit cycle, until such time as a rescreening is required.

Species sensitivity rescreening is required every 24 months if there has been discharge during dry weather conditions. If the discharge is intermittent and occurs only during wet weather, rescreening is not required. If rescreening is necessary, the Discharger shall rescreen with the marine vertebrate species, a marine invertebrate species, and the alga species previously referenced, and continue to monitor with the most sensitive species. If the first suite of rescreening tests demonstrates that the same species is the most sensitive then the rescreening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity, then the Discharger may proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

During the calendar month, toxicity tests used to determine the most sensitive test species shall be reported as effluent compliance monitoring results for the chronic toxicity MDEL.

e. Quality Assurance and Additional Requirements

Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

i. The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity statistical t-test approach described in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1, and Appendix B, Table B-1. The null hypothesis (H_o) for the TST statistical approach is: Mean discharge IWC response ≤0.75 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail." The relative "Percent Effect" at the discharge IWC is defined and reported as: ((Mean control response - Mean discharge IWC response) ÷ Mean control response)) × 100. This is a t-test (formally Student's t-Test), a statistical analysis comparing two sets of replicate observations – in the case of a WET test, only two test concentrations (i.e. a control and IWC). The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e. if the IWC or receiving water concentration differs from the control (the test result is "Pass" or "Fail")). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances.

ii. If the effluent toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and

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Estuarine Organisms (EPA/600/R-95/136, 1995) (see Table E-8, below), then the Discharger must re-sample and re-test within 14 days.

Table E-4. USEPA Test Methods and Test Acceptability Criteria

Species & USEPA Test Method Number	Test Acceptability Criteria (TAC)
Topsmelt, *Atherinops affinis*, Larval Survival and Growth Test Method 1006.01. (Table 3 of Test Method)	80% or greater survival in controls; average dry weight per surviving organism in control chambers equals or exceeds 0.85 mg. LC50 with copper must be ≤ 205 µg/L, <25% MSD for survival and <50% MSD for growth. If the test starts with 9 day old larvae, the mean weight per larva must exceed 0.85 milligrams in the reference and brine controls; the mean weight of preserved larvae must exceed 0.72 milligrams. (required)
Purple Sea Urchin, *Strongylocentrotus purpuratus*, and the Sand Dollar, *Dendraster excentricus,* Fertilization Test Method 1008.0 (Table 7 of Test Method)	70% or greater egg fertilization in controls, must achieve a MSD of <25%, and appropriate sperm counts. (required)
Red Abalone, *Haliotis rufescens*, Larval Shell Development Test Method (Table 3 of Test Method)	80% or greater normal shell development in the controls; must have statistical significant effect at 56 µg/L zinc and achieve a MSD of <20%. (required)
Giant Kelp, *Macrocystis pyrifera*, Germination and Growth Test Method 1009.0 (Table 3 of Test Method)	70% or greater germination in controls, ≥ 10 µm germ-tube length in controls, No Observed Effect Concentration (NOEC) must be below 35 µg/L in the reference toxicant test, and must achieve a MSD of <20% for both germination and germ-tube length in the reference toxicant. (required)

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iii. Dilution water and control water, including brine controls, shall be 1-µm-filtered uncontaminated natural seawater, hypersaline brine prepared using uncontaminated natural seawater, or laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.

iv. Monthly reference toxicant testing is sufficient. All reference toxicant test results should be reviewed and reported using the EC25.

v. The Discharger shall perform toxicity tests on final effluent samples. Chlorine and ammonia shall not be removed from the effluent sample prior to toxicity

testing, unless explicitly authorized under this section of the Monitoring and Reporting Program and the rationale is explained in the Fact Sheet (Attachment F).

f. Accelerated Monitoring Schedule for Maximum Daily Single Result: "Fail."

The Maximum Daily single result shall be used to determine if accelerated testing needs to be conducted.

Once the Discharger becomes aware of this result, the Discharger shall implement an accelerated monitoring schedule within 5 calendar days of the receipt of the result. However, if the sample is contracted out to a commercial laboratory, the Discharger shall ensure that the first of four accelerated monitoring tests is initiated within seven calendar days of the Discharger becoming aware of the result. The accelerated monitoring schedule shall consist of four toxicity tests (including the discharge IWC), conducted at approximately two week intervals, over an eight week period; in preparation for the TRE process and associated reporting, these results shall also be reported using the EC25. If each of the accelerated toxicity tests results in "Pass," the Discharger shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests results in "Fail," the Discharger shall immediately implement the TRE Process conditions set forth below. During accelerated monitoring schedules, only TST results ("Pass" or "Fail") for chronic toxicity tests shall be reported as effluent compliance monitoring results for the chronic toxicity MDEL.

C. **Preparation of an Initial Investigation Toxicity Reduction Evaluation (TRE) Workplan**

The Discharger shall prepare and submit a copy of the Discharger's initial investigation TRE work plan to the Executive Officer of the Regional Water Board and USEPA for approval within 90 days of the effective date of this permit. If the Executive Officer does not disapprove the work plan within 60 days, the work plan shall become effective. The Discharger shall use the Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (EPA/600/2-88/070, 1989), or the most current version, as guidance. This work plan shall describe the steps that the Discharger intends to follow if toxicity is detected. At a minimum, the TRE Work Plan must contain the provisions in Attachment G. This work plan shall describe the steps that the Discharger intends to follow if toxicity is detected. At a minimum the work plan shall include:

1. A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

2. A description of the Facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the Facility; and,

3. If a TIE is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

D. **Toxicity Reduction Evaluation (TRE) Process**

During the TRE Process, monthly effluent monitoring shall resume and results ("TUa" = 100/LC50 for acute toxicity tests; TST "Pass" or "Fail" for chronic toxicity tests) shall be reported as effluent compliance monitoring results for the acute and chronic toxicity MDELs.

1. Preparation and Implementation of Detailed TRE Work Plan. The Discharger shall immediately initiate a TRE using, according to the type of treatment facility, the Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations

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(EPA/600/2-88/070, 1989), or the most current version and, within 15 days, submit to the Executive Officer a Detailed TRE Work Plan, which shall follow the generic Initial Investigation TRE Work Plan revised as appropriate for this toxicity event. It shall include the following information, and comply with additional conditions set by the Executive Officer:

a. Further actions by the Discharger to investigate, identify, and correct the causes of toxicity.

b. Actions the Discharger will take to mitigate the effects of the discharge and prevent the recurrence of toxicity.

c. A schedule for these actions, progress reports, and the final report.

2. TIE Implementation. The Discharger may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, USEPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996). The TIE should be conducted on the species demonstrating the most sensitive toxicity response.

3. Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with toxicity evaluation parameters.

4. The Discharger shall continue to conduct routine effluent monitoring for compliance determination purposes while the TIE and/or TRE is taking place. Additional accelerated monitoring and TRE work plans are not required once a TRE has begun.

5. The Regional Water Board and USEPA recognize that toxicity may be episodic and identification of causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage if monitoring finds there is no longer toxicity.

E. **Reporting**

The Self-Monitoring Report (SMR) shall include a full laboratory report for each toxicity test. This report shall be prepared using the format and content of the test methods manual chapter called Report Preparation, and shall include:

1. The valid toxicity test results for the LC50 point estimate approach, reported as “TUa” and “LC50” using the acute toxicity IWC for the discharge. All toxicity results (whether identified as valid or otherwise) conducted during the calendar month shall be reported on the SMR due date specified in Table E-7.

2. The valid toxicity test results for the TST statistical approach, reported as “Pass” or “Fail” and “Percent Effect” at the chronic toxicity IWC for the discharge. All toxicity test results (whether identified as valid or otherwise) conducted during the calendar month shall be reported on the SMR due date specified in Table E-16.

3. Summary water quality measurements for each toxicity test (e.g. pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).

4. The statistical analysis used in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1.

5. TRE/TIE results. The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses. Prior to completion of the final TIE/TRE report, the Discharger shall provide status updates in the monthly monitoring reports, indicating which TIE/TRE steps are underway and which steps have been completed.

6. Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.

7. Graphical plots clearly showing the laboratory's performance of the reference toxicant for the previous 20 tests and the laboratory's performance of the control mean, control standard deviation, and control coefficient of variation for the previous 12-month period.

8. Any additional QA/QC documentation or any additional chronic toxicity-related information, upon written request of the Regional Water Board Chief Deputy Executive Officer or Executive Officer.

F. Ammonia Removal

1. Except with prior approval from the Executive Officer of the Regional Water Board, ammonia shall not be removed from bioassay samples. The Discharger must demonstrate the effluent toxicity is caused by ammonia because of increasing test pH when conducting the toxicity test. It is important to distinguish the potential toxic effects of ammonia from other pH sensitive chemicals, such as certain heavy metals, sulfide, and cyanide. The following may be steps to demonstrate that the toxicity is caused by ammonia and no other toxicants before the Executive Officer would allow for control of pH in the test.

   a. There is consistent toxicity in the effluent and the maximum pH in the toxicity test is in the range to cause toxicity due to increased pH.

   b. Chronic ammonia concentrations in the effluent are greater than 4 mg/L total ammonia.

   c. Conduct graduated pH tests as specified in the toxicity identification evaluation methods. For example, mortality should be higher at pH 8 and lower at pH 6.

   d. Treat the effluent with a zeolite column to remove ammonia. Mortality in the zeolite treated effluent should be lower than the non-zeolite treated effluent. Then add ammonia back to the zeolite-treated samples to confirm toxicity due to ammonia.

2. When it has been demonstrated that toxicity is due to ammonia because of increasing test pH, pH may be controlled using appropriate procedures which do not significantly alter the nature of the effluent, after submitting a written request to the Regional Water Board, and receiving written permission expressing approval from the Executive Officer of the Regional Water Board.

G. Chlorine Removal

Except with prior approval from the Executive Officer of the Regional Water Board, chlorine shall not be removed from bioassay samples.

VI. LAND DISCHARGE MONITORING REQUIREMENTS—NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS—NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Locations RSW-001, RSW-003, RSW-005 through RSW-010, and RSW-014 through RSW-018

The Discharger shall monitor the Pacific Ocean at Monitoring Locations RSW-001, RSW-003, RSW-005 through RSW-010, and RSW-014 through RSW-018 as follows:

Table E-5. Receiving Water Monitoring Requirements – RSW-001, RSW-003, RSW-005 through RSW-010, and RSW-014 through RSW-018

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Temperature [2]	°F	Grab	1/Quarter	[1]
Dissolved oxygen [3]	mg/L	Grab	1/Quarter	[1]
pH [3]	s.u.	Grab	1/Quarter	[1]
Conductivity [3]	S/m	Grab	1/Quarter	[1]

1. Pollutants shall be analyzed using the analytical methods described in Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.
2. Temperature profiles shall be measured at each station from surface to bottom at a minimum of one-meter intervals. All stations shall be sampled on both a flooding tide and an ebbing tide during each survey.
3. Dissolved oxygen levels, conductivity, and pH shall be measured at the surface, mid-depth and bottom, at a minimum. All stations shall be sampled on both a flooding tide and an ebbing tide during each survey.

B. Monitoring Locations RSW-001, RSW-003, RSW-005 through RSW-010, RSW-014 through RSW-018, RSW-021, RSW-023 and RSW-025

The Discharger shall monitor the Pacific Ocean at RSW-001, RSW-003, RSW-005 through RSW-010, RSW-014 through RSW-018, RSW-021, RSW-023 and RSW-025 as follows:

Table E-6. Receiving Water Monitoring Requirements – RSW-001, RSW-003, RSW-005 through RSW-010, RSW-014 through RSW-018, RSW-021, RSW-023 and RSW-025

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Oil and Grease	mg/L	Grab	2/Year	[1]
Benzene	µg/L	Grab	2/Year	[1]
Toluene	µg/L	Grab	2/Year	[1]
Xylene	µg/L	Grab	2/Year	[1]
Ethylbenzene	µg/L	Grab	2/Year	[1]
Arsenic	µg/L	Grab	2/Year	[1]
Cadmium	µg/L	Grab	2/Year	[1]
Copper	µg/L	Grab	2/Year	[1]
Chromium	µg/L	Grab	2/Year	[1]
Lead	µg/L	Grab	2/Year	[1]
Mercury	µg/L	Grab	2/Year	[1]
Nickel	µg/L	Grab	2/Year	[1]
Silver	µg/L	Grab	2/Year	[1]
Zinc	µg/L	Grab	2/Year	[1]
Selenium	µg/L	Grab	2/Year	[1]
PAHs[2]	µg/L	Grab	2/Year	[1]

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total coliform [3]	MPN/100 ml	Grab	2/Year	[1]
Fecal coliform [3]	MPN/100 ml	Grab	2/Year	[1]
Enterococcus [3]	MPN/100 ml	Grab	2/Year	[1]
Priority Pollutants [4]	µg/L	Grab	1/Year	[1]

1. Pollutants shall be analyzed using the analytical methods described in Part 136; for priority pollutants the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.
2. 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.
3. Monitoring shall be conducted only at monitoring station RSW-001. Minimum of five samples for any 30-day period shall be collected at RSW-001 once every six months.
4. 2015 Ocean Plan Table 1 Pollutants.

C. Benthic Infaunal Sampling at Monitoring Locations B1, B5 through B10, B16 and B18.

1. Benthic infaunal sampling shall be conducted at Stations B1, B5 through B10, B16, and B18. Benthic infaunal sampling stations are identical to Receiving Water monitoring stations (B1 is located at RSW-001 and B5 is located at RSW-005).

2. Benthic infaunal samples shall be collected annually (during August) at each station using a 0.1 square meter Van Veen sediment grab, or equivalent device approved by the Executive Officer.

3. The entire contents of each sample shall be passed through a 1.0 mm standard mesh screen to retrieve the benthic organisms. All organisms recovered shall be enumerated and identified to the lowest taxon possible. Infaunal organisms shall be reported as concentrations per liter for each replicate and each station. Total abundance, number of species and Shannon-Wiener diversity indices shall be calculated (using natural logs) for each replicate and each station.

4. Biomass shall be determined as the wet weight in grams or milligrams retained on a 1.0 millimeter screen per unit volume (e.g., 1 liter) of sediment. Biomass shall be reported for each major taxonomic group (i.e. polychaetes, crustaceans, mollusks, echinoderms, all other macroinvertebrates) for each sample.

5. A separate grab sample shall be collected at each benthic station for sediment chemistry analysis. Sediment grain size analyses shall be performed on each sediment sample (sufficiently detailed to calculate percent weight in relation to phi size). Sub-samples (upper two centimeters) shall be taken from each sediment sample and analyzed for dissolved sulfides (pore water), total organic carbon, organic nitrogen, trace metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, and selenium), total DDT and derivatives, total PCB and derivatives, total PAH and derivatives, and any priority pollutants detected in the effluent monitoring.

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IX. REGIONAL MONITORING REQUIREMENTS

A. Basis for Regional Monitoring

1. The Regional Water Board and 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 waters of the Southern California Bight. This effort has culminated in the publication by the Southern California Coastal Water Research Project (SCCWRP) of the Model Monitoring Program guidance document (Schiff, K.C., J.S. Brown and S.B. Weisberg. 2001. *Model Monitoring Program for Large Ocean Dischargers in Southern California*. SCCWRP Tech. Rep. #357. SCCWRP, Westminster, CA. 101 pp.). This guidance provides the principles, framework and recommended design for effluent and receiving water monitoring elements that have guided development of the monitoring program described below.

2. In July 2000, the Santa Monica Bay Restoration Project (SMBRP) published "An Assessment of the Compliance Monitoring System in Santa Monica Bay" to set forth recommendations and priorities for compliance monitoring in Santa Monica Bay. This report reasoned that a reduced level of receiving water monitoring is justified for large POTWs discharging to Santa Monica Bay due to improvements in effluent quality and associated decreases in receiving water impacts. Like the Model Monitoring Plan developed by SCCWRP, SMBRP recommendations are focused on providing answers to management questions and allowing a reduction in POTW receiving water monitoring where discharge effects are well understood. The monitoring plan set forth here has been guided by SMBRP recommendations.

B. Specific Requirements

1. Regional monitoring is focused on questions that are best answered by a region-wide approach that incorporates coordinated survey design and sampling techniques. The major objective of regional monitoring is to collect information required to assess how safe it is to swim in the ocean, how safe it is to eat seafood from the ocean, and whether the marine ecosystem is being protected. Key components of regional monitoring include elements to address pollutant mass emission estimations, public health concerns, monitoring of trends in natural resources, assessment of regional impacts from all contaminant sources, and protection of beneficial uses. The final design of regional monitoring programs is developed by means of steering committees and technical committees comprised of participating agencies and organizations, and is not specified in this Order/Permit. Instead, for each regional component, the degree and nature of participation of the Discharger is specified. For this Order/Permit, these levels of effort are based upon past participation by Chevron Products Company, El Segundo Refinery, in regional monitoring programs. The Discharger shall participate in regional monitoring activities coordinated by the SCCWRP or any other appropriate agency approved by the Regional Water Board and USEPA.

2. The Discharger shall complete collection and analysis of samples in accordance with the schedule established by the Steering Committee directing the regional monitoring surveys. The level of participation shall be similar to that provided by the Discharger in previous regional surveys.

3. The regional programs where the Discharger is required to participate include:

a. Bight 2018 Regional Survey and future regional surveys, including benthic infauna, sediment chemistry, fish communities, and fish predator risk.

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b. Central Region Kelp Monitoring Program – coordinated by the Los Angeles Regional Board.

C. BIGHT 2018 REGIONAL SURVEY

Bight Regional Monitoring. Regular regional monitoring for the Southern California Bight has been established, occurring at five-year intervals, and is coordinated through SCCWRP with discharger agencies and numerous other entities. The fifth regional monitoring program (Bight '13) occurred primarily during summer 2013. The next (sixth) regional monitoring program (Bight '18) is expected to take place during 2018. While participation in regional monitoring programs is required under this Order, revisions to the Discharger's monitoring program at the direction of the Regional Water Board and USEPA may be necessary to accomplish the goals of regional monitoring or to allow the performance of special studies to investigate regional or site-specific water issues of concern. These revisions may include a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples to be collected. Such changes may be authorized by the Regional Water Board Executive Officer and USEPA Director upon written notification to the Discharger.

D. REGIONAL KELP SURVEY

1. The Regional Board has helped to establish the Central Region Kelp Survey Consortium to conduct regional kelp bed monitoring. This program is designed to require ocean dischargers in the Regional Water Board's jurisdiction to undertake a collaborative program (which may include participation by Orange County ocean dischargers) to monitor kelp beds in the Southern California Bight, patterned after the successful program implemented by the San Diego Regional Board since 1985.

2. Data collected in this regional survey will be used to assess status and trends in kelp bed health and spatial extent. The regional nature of the survey will allow the status of beds local to specific dischargers to be compared to regional trends. Additionally, this survey provides data to the Santa Monica Bay Restoration Commission's Kelp Beds program. The regional kelp monitoring survey was initiated during 2003.

3. The regional survey will consist primarily of quarterly aerial overflights to assess the size and health of existing kelp beds. The Discharger shall participate in the management and technical committees responsible for the final survey design and shall provide appropriate financial support to help fund the survey (share based strictly on the number of participants in the study, but not to exceed a maximum of $10,000 per year).

E. BAY COMPREHENSIVE MONITORING PROGRAM

The Santa Monica Bay Restoration Commission adopted a new comprehensive monitoring program for Santa Monica Bay in April 2007. This new monitoring program, developed by the Commission's Technical Advisory Committee, culminates efforts that began in the mid-1990s with the identification of key management questions and monitoring priorities. It lays out new monitoring designs for five major habitats within the Bay:

Design for each habitat includes a core motivating question, a number of related objectives, specific monitoring approaches, indicators, data products, and sampling designs detailing number and locations of stations, sampling frequency, and measurements to be collected. The Bay Monitoring Program also includes an implementation plan that includes a detailed schedule, cost estimates for individual Program elements, and recommendations on the Program's management structure, including data management and assessment strategies.

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The Bay Monitoring Program is 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, Bight '03, and Bight '08) and kelp bed monitoring. However, other elements of the program have yet to be implemented.

SMBRC, USEPA, the Regional Water Board, the Discharger, affected NPDES permit holders, and other interested agencies and stakeholders will develop plans to collaboratively fund these elements of the program and determine each party's level of participation. Redirection of existing monitoring requirements and/or the imposition of additional monitoring efforts conducted under the terms of this Order are subject to a public hearing before the Regional Water Board and public notice by USEPA. This Order may be reopened and modified by the Regional Water Board and USEPA to incorporate conforming monitoring requirements and schedule dates for implementation of the Comprehensive Monitoring Program for Santa Monica Bay (Santa Monica Bay Restoration Commission, January 2007). Each year, at a Spring Regional Water Board meeting, the Discharger shall provide an informational report summarizing to date its contributing activities towards coordinated implementation of the Comprehensive Monitoring Program for Santa Monica Bay (SMBRC, January 2007).

X. OTHER MONITORING REQUIREMENTS

A. Monitoring of 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 do 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.

B. Sediment Toxicity Testing

1. Sediment toxicity testing shall be conducted at Stations RSW-006, RSW-008, RSW-010, RSW-016 and RSW-018.

2. Sediment grab samples shall be collected annually (during August) at each station using a 0.1 square meter Van Veen sediment grab, or equivalent device approved by the Executive Officer. Three replicate samples shall be collected for testing at each station. Sub-samples (upper two centimeters) shall be taken from each sediment sample and tested with any of the three test species; *Eohaustorius estuarius*, *Leptocheirus plumulosus*, or *Rhepoxynius abronius*. Alternative species may be used subject to approval by the Executive Officer.

C. Outfall Inspection Requirements

1. The Chevron ocean outfall shall be externally inspected a minimum of once a year.

2. Inspections shall include general observations and photographic and videographic records of the outfall pipe and adjacent ocean bottom.

3. The pipes shall be visually inspected by a diver, manned submarine, or remotely operated vehicle.

4. A summary report of the inspection findings shall be provided to the Regional Water Board. This written report, augmented with videographic and/or photographic images, will provide a description of the observed condition of the discharge pipes from shallow water to their respective termini.

5. The summary report is due on February 1 of each year.

D. Hauling Reports

1. In the event that liquid wastes, solid wastes or sludge are transported offsite during the reporting period, the following shall be reported annually:

a. Types of wastes and quantity of each type.

b. Location of the final point(s) of disposal for each type of waste.

2. If no wastes are transported offsite during the reporting period, a statement to that effect shall be submitted.

This requirement may be met through providing the Regional Water Board with a copy of hauling reports the Discharger is required to prepare under the Resource Conservation and Recovery Act (RCRA).

E. Special Monitoring and Reporting Provisions

1. In the event that continuous temperature and/or pH recorders are temporarily out of service, informal backup data is to be obtained from 6 daily grab samples conducted by plant operators at approximately 4-hour intervals. Should the continuous pH recorder be out of service for more than one week, daily grab samples shall commence being obtained and analyzed by a certified laboratory in accordance with current USEPA guideline procedures until the recorder is placed back into service.

2. In the event that the continuous flow recorder is temporarily out of service, backup data on total daily flow and peak flow shall be obtained by summing readings from the individual flow recorders which together monitor the total effluent stream.

3. Whenever backup procedures are used for daily monitoring of pH, temperature or flow, the report shall so state, together with the dates thereof and the reason(s) the recorder(s) could not be utilized.

XI. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. If there is no discharge during any reporting period, the report shall so state.
3. If the Discharger monitors (other than for process/operational control, startup, research, or equipment testing) any influent, effluent, or receiving water constituent more frequently than required by this Order using approved analytical methods, the results of those analyses shall be included in the monitoring report. These results shall be reflected in the calculation of the average (or median) used in demonstrating compliance with this Order/Permit.
4. Each monitoring report shall contain a separate section titled “Summary of Non-Compliance” which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with waste discharge requirements, as well as all excursions of effluent limitations.

5. The Discharger shall inform the Los Angeles Water Board well in advance of any proposed construction activity that could potentially affect compliance with applicable requirements.

6. The Discharger shall report the results of chronic toxicity testing, TRE and TIE as required in the Attachment E, Monitoring and Reporting, section V.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website at:

   http://www.waterboards.ca.gov/water_issues/programs/ciwqs/

   The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit quarterly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period	Start Date	Duration	SMR Due Date
Continuous	All	Permit effective date	Ongoing	Submit with quarterly SMR
1/week	Weekly	Permit effective date	Monday through Sunday	Submit with quarterly SMR
1/month	Monthly	First day of each calendar month	First day of calendar month through last day of calendar month	Submit with quarterly SMR
1/quarter	1st Quarter	January 1, 2018	January 1 through March 31	May 1
	2nd Quarter	April 1, 2018	April 1 through June 30	August 1
	3rd Quarter	July 1, 2018	July 1 through September 30	November 1
	4th Quarter	October 1, 2018	October 1 through December 31	February 1
2/year	1st Semiannual	January 1, 2018	January 1 through June 30	August 1
	2nd Semiannual	July 1, 2018	July 1 through December 31	February 1
1/year	Annual	January 1, 2018	January 1 through December 31	February 1

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4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable reported Minimum Level (reported ML, also known as the Reporting Level, or RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

   c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   d. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

   e. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Compliance Determination.** Compliance with effluent limitations for reportable pollutants shall be determined using sample reporting protocols defined above and Attachment A. For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (ML).

6. **Multiple Sample Data.** When determining compliance with a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses and the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND), the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

7. The Discharger shall submit SMRs in accordance with the following requirements:

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

C. Discharge Monitoring Reports (DMRs)

DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at:

<http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring>.

D. Other Reports

1. The Discharger shall report the results of the TRE/TIE, SWPP, BMP Plan, and SCP required by Special Provisions – VI.C of this Order. The Discharger shall submit reports with the first quarterly SMR scheduled to be submitted on or immediately following the report due date.

2. Within 90 days of the effective date of this permit, the Discharger is required to submit the following to the Regional Water Board:

a. Initial Investigation TRE Workplan

b. Updated SWPPP

c. Updated BMPP

d. Updated SCP

3. The receiving water monitoring report containing the results of bimonthly, semiannual and annual monitoring shall be received at the Regional Water Board by **March 1** of each year following the calendar year of data collection.

4. Within 90 days of the effective date of this permit, the Discharger is required to submit to the Regional Water Board a work plan to conduct an updated mixing zone study. The study shall identify the boundary of the zone of initial dilution (ZID) based on modeling results, and include monitoring upstream of the discharge point, directly above the discharge location, at the boundary of the ZID and outside the ZID for the list of constituents included in Table 1 of the Ocean Plan, to confirm the assumptions made by the model.

ATTACHMENT F – FACT SHEET

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TABLES

ATTACHMENT F – FACT SHEET

As described in section II.B of this Order, the Regional Water Board incorporates this Fact Sheet as findings of the Regional Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

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I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	**4B192113001**
Discharger	**Chevron Product Company**
Name of Facility	**El Segundo Refinery**
Facility Address	**324 El Segundo Boulevard**
	El Segundo, California 90245
	Los Angeles County
Facility Contact, Title and Phone	**Gabriela Cepeda-Rizo, NPDES Specialist, (310) 615-3311**
Authorized Person to Sign and Submit Reports	**Henry Kusch, General Manager, (310) 615-5000**
Mailing Address	**SAME**
Billing Address	**SAME**
Type of Facility	**Petroleum Refinery (SIC 2911)**
Major or Minor Facility	**Major**
Threat to Water Quality	**1**
Complexity	**A**
Pretreatment Program	**No**
Recycling Requirements	**No**
Facility Permitted Flow	**27 million gallons per day (MGD)**
Facility Design Flow	**Up to 27 MGD**
Watershed	**Santa Monica Bay (El Segundo/LAX sub-watershed)**
Receiving Water	**Pacific Ocean**
Receiving Water Type	**Ocean waters**

A. Chevron Products Company (hereinafter "Discharger" or "Chevron") is the owner and operator of the El Segundo Refinery (hereinafter "Facility" or "Refinery"), a petroleum refinery.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Facility discharges treated wastewater and treated storm water to the Pacific Ocean, a water of the United States. The Discharger was previously regulated by Order No. R4-2013-0025, which was adopted by the Regional Water Board on February 7, 2013 and it expires on

January 10, 2018. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. The Discharger filed a report of waste discharge and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit on March 1, 2017. Supplemental information was requested during a meeting with Facility representatives on March 9, 2017 and received on March 16, 2017. The application was deemed complete on March 17, 2017. A site visit was conducted on April 27, 2017, to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

D. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. However, pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The El Segundo Refinery is a petroleum refinery located at 324 West El Segundo Boulevard in El Segundo, CA. Chevron has operated the Refinery since 1911. The Facility converts crude oil and other intermediates into refined petroleum products including: motor gasoline, jet fuel, diesel fuel, fuel oils, gas oils, liquefied petroleum gases, fuel blending components, coke, ammonia, and molten sulfur. The Facility also maintains the ability to import and export motor gasoline, jet fuel, diesel fuel, fuel oils, gas oils, and fuel blending components through its marine terminal and to import and export liquefied petroleum products through its rail and truck loading racks.

Crude oil and intermediates are delivered by ship to the marine terminal, pumped to the Facility by existing underwater pipelines, and/or received via pipeline directly to the Facility. The Facility utilizes a variety of technologies to turn the crude oil and intermediates into refined products including: atmospheric and vacuum distillation, catalytic cracking, alkylation, isomerization, coking, catalytic reforming, hydrogenation, sulfur recovery, chemical treating, and product blending. Auxiliary systems are maintained to support refinery operations including hydrogen plants to produce hydrogen needed for certain technologies, boilers to produce steam, cogeneration plants to produce electricity and steam, product storage facilities, and water treatment systems.

A. Description of Wastewater and Biosolids Treatment and Controls

Wastewater discharged from the Facility includes the following:

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

2. Groundwater generated from a groundwater remediation project required by Cleanup and Abatement Order No. 88-055 directing Chevron to extract and treat hydrocarbon-impacted groundwater from the Old Dune Sand Aquifer underlying the Facility.

3. Storm water runoff at the Refinery.

4. Other intermittent 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 Refinery. In addition, the refinery may occasionally receive ship ballast water or tank rinsates from its marine terminal.

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

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Unsegregated System

The unsegregated system is 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 unit. The IAF unit removes additional oil and solids by a combination of chemical flocculation and induced air flotation. The chemical additive, a 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 water's surface and is removed by skimmers. If the treated unsegregated water meets Refinery specifications after the separator and IAF treatment, it is ready for discharge. If it is off-specification, it is sent to one of two auxiliary effluent diversion tanks for additional IAF treatment. Units defined as auxiliary are done so pursuant to 40 C.F.R. section 122.43(e). The auxiliary effluent diversion tanks are available for handling off-specification process wastewater from both the unsegregated and segregated systems, as well as storm water runoff.

Segregated System

The segregated system is used to treat petroleum process wastewater containing emulsified oils and a portion of the Refinery's recovery well groundwater. Treatment is comprised of primary treatment, involving gravity separators and a Dissolved Air Flotation (DAF) unit for mechanical removal of oils and solids; and secondary treatment involving the Activated Sludge Unit (ASU) for biological treatment. A different separator than the one used by the unsegregated system is the initial step in the treatment of process wastewater. After the separator, the wastewater flows to one of two tanks. The wastewater is fed from these tanks to a DAF unit. A DAF unit works on the same premise as an IAF unit. Oil and solids attach to tiny bubbles which rise to the surface and are then skimmed off. Whereas the IAF unit introduces air into the unit to create the bubbles, a DAF unit uses an air-saturated water stream that recycles from the unit to create the same effect.

The wastewater from the DAF unit then flows directly to the ASU for secondary treatment. Biological treatment in the ASU involves mixing the wastewater with oxygen, nutrients, and microorganisms. The result is treated wastewater, along with microorganism growth and reproduction. The microorganisms floc together and are removed in a clarifier and sent back to the ASU. A portion is also sent to the Hyperion Wastewater Treatment Plant per an industrial waste discharge permit issued by the City of El Segundo. This keeps the microorganism population at an optimum state. If the treated segregated water meets Refinery specifications after primary and secondary treatment, it is ready for discharge. If it is off-specification, it will receive further primary or secondary treatment.

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

Changes Resulting from Time Schedule Order

On April 16, 2012, the Discharger requested the Regional Water Board to issue a Time Schedule Order (TSO) with an interim effluent limitation for acute toxicity for Discharge Point No. 001. The Discharger indicated that changes in Facility operation, additional treatment, or a combination of both would likely be required in order to comply with the new acute toxicity

effluent limitation of 2.7 TU_a established in Order No. R4-2013-0025. The Discharger requested a time schedule of four years and two months after the effective date of Order No. R4-2013-0025 to make the required changes to meet the final acute toxicity effluent limitation. The Discharger also submitted a Work Plan outlining the phases of work needed to identify and implement these changes. The Regional Water Board found that the Discharger justified its request and adopted TSO No. R4-2013-0026 on February 7, 2013 to provide the Discharger with a time period of four years and two months to make required changes to meet the acute toxicity effluent limitation. TSO No. R4-2013-0026 included an interim limitation of 8.7 TU_a for acute toxicity.

On February 1, 2016, the Discharger provided the Regional Water Board with a summary of progress made to address the requirements of TSO No. R4-2013-0026. The summary indicated that the segregated drain was identified as the source of organic toxicants and that a Powdered Activated Carbon (PAC) system was selected as the mitigation measure for addressing the organic toxicants. Construction of the PAC system required a permit from the Air Quality Management District (AQMD) which takes from 12 to 24 months to obtain. In order to account for the additional time necessary to obtain the AQMD permit, the Discharger requested an extension of fifteen months to complete the requirements of TSO No. R4-2013-0026. The Regional Water Board considered the request and on November 12, 2016, the Executive Officer issued Amended TSO No. R4-2013-0026-A1. The Amended TSO includes a limited, eight-month extension and expires on January 10, 2018.

The Refinery received a permit to construct from the AQMD in late January 2017 and has begun construction of the PAC system. Completion of construction and trials of this new system are anticipated in the third quarter of 2018.

PAC can mitigate acute toxicity in two ways:

- Poorly biodegraded compounds are adsorbed to the PAC. PAC stays in the system for 20-30 days, whereas wastewater stays in the system only 1-1½ days. Therefore, the biological process has a much longer time to degrade these compounds.
- The PAC is not discharged to the receiving water, but is appropriately disposed of as part of the waste activated sludge. Compounds adsorbed to it, if not biodegraded, will be removed from the wastewater with the wasted sludge.

Existing data indicates that while the new limit can be met at times without the new equipment, at other times it cannot be consistently achieved. This indicates that PAC may not be required all the time. Thus, pursuant to 40 C.F.R. section 122.41(e), the PAC system is auxiliary treatment, to be used when necessary to achieve consistent compliance, but may not be used when conditions are such that compliance can be achieved without PAC operation.

When the Refinery is using PAC, waste activated sludge will contain PAC. In this case, the typical operation will include sludge dewatering onsite and offsite disposal of the dewatered sludge cake, rather than discharge directly to Hyperion. However, the Refinery may at times discharge clear water removed from the sludge to Hyperion under its current industrial discharge permit, and may continue to discharge waste sludge directly to Hyperion when it does not contain any significant amount of PAC.

Use of Recycled Water

The Refinery currently uses recycled water from the West Basin Municipal Water District (WBMWD) for irrigation, cooling towers, and low pressure and high pressure boilers. Reclaimed water supplied to the Refinery by WBMWD is the secondary treated effluent from the City of Los Angeles Hyperion Treatment plant. WBMWD has different treatment systems at their

facilities. The following three separate pipelines supply different grades of treated recycled water to the Refinery:

Line 1: Nitrified recycled water. Approximately 4 MGD of single pass RO water is supplied to the Refinery for cooling tower and irrigation purposes. Line 1 water is first treated by bacteria to remove/convert ammonia to nitrates, then further treated using breakpoint chlorination to reduce the normal ammonia concentration. The maximum ammonia concentration value was 20 mg/L in 2011. WBMWD then began injecting carbon dioxide into the treatment system to lower the pH. The system removes ammonia more effectively at a lower pH. The ammonia concentration of Line 1 water is now less than 1 mg/L. Chevron has provisions to switch to potable water when the concentration of ammonia in the recycled water increases.

Line 2: Single pass reverse osmosis (RO). Approximately 1.5 MGD of single pass RO water is supplied to the Refinery for usage as low pressure boiler feed water. The ammonia concentration of Line 2 water is less than 5 mg/L.

Line 3: Double pass RO water. About 2.6 MGD of the double pass RO water is supplied to the Refinery for high pressure boiler usage. The ammonia concentration of Line 3 water is less than 1 mg/L.

Chevron has requested intake credits for the recycled water. The Ocean Plan does not include provisions for intake credits. Recent monitoring data, however, indicate that the effluent is currently in compliance with effluent limitations for ammonia.

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B. Discharge Points and Receiving Waters

Chevron proposes to discharge up to 27 million gallons per day (MGD) of treated wastewater during wet weather, and up to 8.8 MGD of treated wastewater during dry weather into the Santa Monica Bay, a water of the United States, through Discharge Point 001. Discharge Point 001 is at the end of an outfall line (Latitude 33.908056° North, Longitude -118.438056° West). The outfall line is located adjacent to Dockweiler Beach, approximately 2,000 feet south of Grand Avenue, and extends approximately 3,500 feet offshore to the terminus.

The original 300-foot outfall line was voluntarily extended by Chevron in 1994 by fitting a 3,200-foot high density polyethylene pipe with a nominal 60-inch diameter to the original line. The extended outfall provides a minimum dilution ratio of 80 parts of seawater to one part of effluent (80:1).

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in Order No. R4-2013-0025 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the prior Order (from August 2012 through March 2017) are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations				Monitoring Data
		6-Month Median [1,2]	Average Monthly [2]	Maximum Daily [3]	Instantaneous Maximum	Range of Reported Max. Daily Values
pH[4]	S.U.	--	--	--	6.0 – 9.0	6.3 – 8.5
Biochemical Oxygen Demand 5-day (BOD_5) @ 20°C [5]	mg/L	--	36	66	--	1.9 – 18
Total Suspended Solids (TSS)	mg/L	--	29	45	--	ND – 43
Chemical Oxygen Demand (COD)	mg/L	--	254	490	--	32 – 180

Parameter	Units	Effluent Limitations				Monitoring Data
		6-Month Median [1,2]	Average Monthly [2]	Maximum Daily [3]	Instantaneous Maximum	Range of Reported Max. Daily Values
Oil and Grease	mg/L	--	11	20	--	ND – 10
Phenolic Compounds	mg/L	--	0.19	0.49	--	ND – 0.12
Ammonia (as N)	mg/L	--	20	44	--	ND – 36
Sulfide	mg/L	--	0.19	0.44	--	ND – 0.031
Total Chromium	mg/L	--	0.23	0.65	--	ND – 0.0031
Hexavalent Chromium	mg/L	--	0.02	0.04	--	ND – 0.00081
Temperature	ºF	--	--	--	104	78 – 102
Acute Toxicity	TU_a	--	--	--	2.7	1.0 – 14.5
Chronic Toxicity	TU_c	--	--	--	81	10 – 76.9
Mercury, Total Recoverable	µg/L	3.2	--	12.9	32.3	0.0047 – 0.16
Chlorinated Phenolics [6]	µg/L	81	--	324	810	All ND
Endosulfan	µg/L	0.729	--	1.458	2.187	ND – 0.14
Endrin	µg/L	0.162	--	0.324	0.486	All ND
HCH [7]	µg/L	0.320	--	0.640	0.972	Not Reported
Thallium	µg/L	--	162	--	--	All ND
Tributyltin	µg/L	--	0.01	--	--	All ND
Acrylonitrile	µg/L	--	8.1	--	--	All ND
Aldrin	µg/L	--	0.00178	--	--	All ND
Benzidine	µg/L	--	0.0056	--	--	All ND
Beryllium	µg/L	--	2.7	--	--	All ND
Bis(2-chloroethyl)ether	µg/L	--	3.6	--	--	All ND
Carbon Tetrachloride	µg/L	--	73	--	--	All ND
Chlordane [8]	µg/L	--	0.00186	--	--	All ND
DDT [9]	µg/L	--	0.0138	--	--	ND – 0.014
3,3'-dichlorobenzidine	µg/L	--	0.66	--	--	All ND
Dieldrin	µg/L	--	0.15	--	--	All ND
1,2-diphenylhydrazine	µg/L	--	0.95	--	--	All ND
Heptachlor	µg/L	--	0.0041	--	--	All ND
Heptachlor epoxide	µg/L	--	0.00162	--	--	All ND
Hexachlorobenzene	µg/L	--	0.017	--	--	All ND
N-nitrosodi-N-propylamine	µg/L	--	30.8	--	--	All ND
PAHs [10]	µg/L	--	0.71	--	--	All ND
PCBs [11]	µg/L	--	0.00154	--	--	All ND
TCDD equivalents [12]	µg/L	--	3.2×10^{-7}	--	--	ND – 7.5×10^{-7}
Toxaphene	µg/L	--	0.017	--	--	All ND
2,4,6-trichlorophenol	µg/L	--	23	--	--	All ND
Total coliform [13,14]	MPN/ 100 ml	--	1,000[15]	--	10,000	ND – 1,600
Fecal coliform [14]	MPN/ 100 ml	--	200[15]	--	400	ND – 540
Enterococcus [14]	MPN/ 100 ml	--	35[15]	--	104	ND – 54

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1. 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.
2. 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.
3. The daily maximum effluent concentration limit shall apply to flow-weighted 24-hour composite samples.
4. The pH of the effluent shall remain within the range of 6.0 to 9.0 pH units except during excursions from the range as permitted by 40 C.F.R. 401.17. The total time during which the pH values are outside the required range of pH values (1) shall not exceed 7 hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.
5. 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.
6. Sum of 2-chlorophenol, 4-chloro-3-methylphenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, and pentachlorophenol.
7. HCH means the sum of the alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.
8. Sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma and oxychlordane.
9. Sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.
10. Sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo(k)fluoranthene, 1,12-benzoperylene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene.
11. 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.
12. To determine compliance with effluent limitations or to conduct Reasonable Potential Analysis (RPA), this Order requires the Discharger to calculate and report dioxin-toxicity equivalencies (TEQs) using the following formula, where the toxicity equivalency factors (TEFs) are listed in the table below:

    Dioxin-TEQ = $\sum$ (Cx * TEFx)
    Where:
    TEFx = TEF for congener x

Toxicity Equivalency Factors and Bioaccumulation Equivalency Factors

Dioxin or Furan Congener	Toxicity Equivalency Factor (TEF)
2,3,7,8-tetra CDD	1.0
1,2,3,7,8-penta CDD	1.0
1,2,3,4,7,8-hexa CDD	0.1
1,2,3,6,7,8-hexa CDD	0.1
1,2,3,7,8,9-hexa CDD	0.1
1,2,3,4,6,7,8-hepta CDD	0.01
Octa CDD	0.0001
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
1,2,3,4,7,8-hexa CDF	0.1
1,2,3,6,7,8-hexa CDF	0.1
1,2,3,7,8,9-hexa CDF	0.1
2,3,4,6,7,8-hexa CDF	0.1
1,2,3,4,6,7,8-hepta CDF	0.01
1,2,3,4,7,8,9-hepta CDF	0.01
Octa CDF	0.0001

13. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.
14. The Discharger shall monitor for Total Coliform, Fecal Coliform, and Enterococcus at the Monitoring Location at T-710.
15. Limitation is a 30-day geometric mean based on 5 samples in a 30-day period.

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D. Compliance Summary

Data submitted to the Regional Water Board from the term of Order No. R4-2013-0025 (from August 2012 through March 2017) indicate that the Discharger has experienced violations of numeric effluent limitations for discharges from Discharge Point 001 (Monitoring Location EFF-001) as outlined in the table below:

Table F-3. Effluent Limitation Violations

Date	Type of Limitation	Pollutant	Units	Effluent Limitation	Result
02/03/2015	Instantaneous Maximum	Fecal Coliform	MPN/ 100 ml	400	540
01/05/2016	Monthly Average	TCDD Equivalents	µg/L	3.2×10^{-7}	7.5×10^{-7}
01/06/2016	Instantaneous Maximum	Acute Toxicity	TU_a	8.7 [1]	14.7
12/02/2016	Daily Maximum	Phenols, Total	lb/day	36	36.5

[1] Interim effluent limitation established in TSO No. R4-2013-0026.

The Regional Water Board has identified all of these violations as Class 2 (moderate) violations. In each case the Discharger took action to identify and address the violation. Sampling results for the pollutant subsequent to each violation have been in compliance with the effluent limitations. Therefore, no enforcement action was necessary.

E. Planned Changes

The Refinery has selected a Powdered Activated Carbon (PAC) treatment system as the mitigation measure for addressing organic toxicants. The Refinery received a permit to construct the PAC system from the South Coast Air Quality Management District in late January 2017. Construction of the PAC system is now underway. Completion of construction and testing of the new system are anticipated in the third quarter of 2018.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted a Water Quality Control Plan for the Los Angeles Region (hereinafter Basin Plan) on June 13, 1994 that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean and all waters

addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Requirements in this Order implement the Basin Plan.

Beneficial uses applicable to the Pacific Ocean are as follows:

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	**Santa Monica Bay** El Segundo/LAX sub-watershed Hydrologic Unit 180701040601 (Dockweiler Beach)	Existing: Industrial service supply (IND), navigation (NAV), water contact recreation (REC-1), non-contact water recreation (REC-2), commercial and sport fishing (COMM), marine habitat (MAR), and wildlife habitat (WILD). Potential: Spawning, reproduction, and/or early development (SPWN).
001	**Pacific Ocean** Nearshore Zone (The zone bounded by the shoreline and a line 1000 feet from the shoreline or the 30-foot depth contours, whichever is further from the shoreline)	Existing: Industrial service supply (IND); navigation (NAV); water contact recreation (REC-1), non-contact water recreation (REC-2), commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); preservation of biological habitats (BIOL)[1]; rare, threatened, or endangered species (RARE)[2]; migration of aquatic organisms (MIGR)[3]; spawning, reproduction, and/or early development (SPWN)[3]; and shellfish harvesting (SHELL)[4]
	Pacific Ocean Offshore Zone	Existing: Industrial service supply (IND); navigation (NAV); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); rare, threatened, or endangered species (RARE)[2]; migration of aquatic organisms (MIGR)[3]; spawning, reproduction, and/or early development (SPWN)[3]; and shellfish harvesting (SHELL)[4]

1. Areas of Special Biological Significance (along coast from Latigo Point to Laguna Point) and Big Sycamore Canyon and Abalone Cove Ecological Reserves and Point Fermin Marine Life Refuge.
2. One or more rare species utilizes all ocean, bays, and estuaries, and coastal wetlands for foraging and/or nesting.
3. Aquatic organisms utilize all bays, estuaries, lagoons, and coast wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.
4. Areas exhibiting large shellfish populations include Malibu, Point Dume, Point Fermin, White Point and Zuma Beach.

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Thermal Plan. The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on January 7, 1971, and amended this plan on September 18, 1975. This plan contains temperature objectives for coastal waters. Requirements of this Order implement the Thermal Plan.

2. **California Ocean Plan.** 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, 2005, 2009, 2012, and 2015. The State Water Board adopted the latest amendment on May 6, 2015, and it became effective on January 28, 2016. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the state to be protected as summarized below:

Table F-5. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
Outfall 001	Pacific Ocean	Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish spawning and shellfish harvesting

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.

3. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution 68-16.

5. Anti-Backsliding Requirements. Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. Endangered Species Act Requirements. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state, including protecting rare and endangered species. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

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D. Impaired Water Bodies on the CWA section 303(d) List

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 Water Board plans to develop and adopt Total Maximum Daily Loads (TMDLs) that will specify waste load allocations (WLAs) for point sources and waste load allocations (WLAs) for non-point sources, as appropriate.

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 2012 303(d) list and have been scheduled for TMDL development. On July 30, 2015, USEPA approved California's 2012 Section 303(d) list of impaired waters and disapproved the omission of several water bodies and associated pollutants that meet federal listing requirements. USEPA identified additional water bodies and pollutants for inclusion on the State's 303(d) list. On October 11, 2011, USEPA issued its final decision regarding the waters USEPA added to the State's 303(d) list.

The Facility discharges to Santa Monica Bay. The 2012 State Water Board California 303(d) List includes Santa Monica Bay (Offshore and Nearshore) as impaired waters. The pollutants of concern include DDT (tissue & sediment, centered on Palos Verdes Shelf), PCBs (tissue & sediment), sediment toxicity, debris, and fish consumption advisory.

Santa Monica Bay Beach Bacteria TMDL: The Regional Water Board has adopted two TMDLs to reduce bacteria at Santa Monica Bay beaches (including Dockweiler Beach) during dry and wet weather. The Regional Water Board adopted the Dry Weather and Wet Weather TMDLs on January 24, 2002, and December 12, 2002, respectively (Resolutions 2002-004 and 2002- 022). These TMDLs were approved by the State Water Board, State Office of Administrative Law (OAL) and USEPA Region 9 and became effective on July 15, 2003. Neither TMDL assigns WLAs to the Facility; rather load reductions are addressed through a list of responsible jurisdictions and responsible agencies. The Discharger is not included in this list.

Santa Monica Bay Debris TMDL: On November 4, 2010, the Regional Water Board adopted Resolution R10-010, a TMDL for debris in the nearshore and offshore areas of Santa Monica Bay. The Basin Plan amendment was adopted on May 2, 2011, and became effective on March 20, 2012. Control of debris is addressed through permits issued to the California Department of Transportation, Los Angeles County and the Cities in Los Angeles County (under Los Angeles County storm water MS4 NPDES Permit). This TMDL does not include requirements applicable to the Discharger.

Santa Monica Bay DDTs and PCBs TMDL: Consistent with 40 C.F.R. §§ 130.2 and 130.7, section 303(d) of the CWA and USEPA guidance for developing TMDLs in California (USEPA, 2000a), the USEPA issued the *Santa Monica Bay TMDLs for DDTs and PCBs* on March 26, 2012. The TMDL includes WLAs for DDT and PCBs for point sources, including the Facility, that are given in Table 6-2 of the TMDL. This Order implements the requirements of the Santa Monica Bay TMDL for DDTs and PCBs.

E. Other Plans, Polices and Regulations—Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

A. Discharge Prohibitions

Discharge Prohibitions in this Order are based on the federal Clean Water Act, Basin Plan, Water Code, USEPA guidance and regulations, and provisions in Order No. R4-2013-0025.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 C.F.R. section 125.3.

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

a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional 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 non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents 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 a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

d. New source performance standards (NSPS) 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.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not

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available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Regional Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

USEPA has established standards of performance (technology-based limitations and standards) for the petroleum refining industry at 40 C.F.R. Part 419, *Effluent Limitations Guidelines for the Petroleum Refining Point Source Category*. Subpart B of these regulations for the Cracking Subcategory apply to discharges from the Facility and have been used to develop limitations and requirements of this Order.

2. Projected Production Rate

The refinery is classified as a "cracking refinery" as defined by the USEPA at 40 C.F.R. Section 419.20. Therefore, the USEPA Effluent Guidelines and Standards for Petroleum Refining Point Sources (40 C.F.R. Sections 419.22-419.24) based on Best Available Technology Economically Achievable (BAT), Best Practicable Control Technology (BPT), and/or Best Conventional Pollutant Control Technology (BCT), whichever are more stringent, are applicable to the discharge. Effluent limitations guidelines (ELGs) have been established for the following pollutants: $BOD_{5,}$ TSS, COD, oil and grease, phenolic compounds, ammonia as N, sulfide, total chromium, hexavalent chromium and pH. The application of these ELGs requires that technology-based effluent limitations for Discharge Point 001 be derived based on refinery production (the total crude oil throughput of the facility, also known as feed rate) and the treatment processes used. The projected production rate at the Facility is based on two factors: expected refinery fuel production and crude oil credit for groundwater clean-up.

Expected Refinery Fuel Production:

The Discharger provided refinery crude production information in Appendix 4A of the Report of Waste Discharge (ROWD). Data from the years 2012-2016 indicated a highest monthly average rate of 289,340 barrels per operating day (BPOD) and a highest yearly average rate of 274,590 BPOD. Based upon market forces and processes available the Discharger estimates future production rates of 270,000 BPOD. The Refinery has a rated crude capacity of 275,000 BPOD.

Crude Oil Credit for Groundwater Clean-up:

Cleanup and Abatement Order No. 88-055 directs Chevron to extract and treat hydrocarbon-impacted groundwater from the Old Dune Sand Aquifer underlying the Facility. To factor this activity into the production rate a crude oil credit has been granted for the treatment of contaminated groundwater. Analysis of the contaminated groundwater by the Discharger indicates that it is similar to normal Facility effluent. The estimated contaminated groundwater processed will be similar to the previous five-year average, approximately 640,510 gallons per day (gpd). The crude credit was derived using Table 19 of USEPA's report *Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category*, dated April 1974. Using median flow values obtained from Table 19, the throughput of one barrel of crude generates 32.5 gallons of wastewater. Therefore, the crude oil credit for groundwater clean-up is calculated as follows:

$$640{,}510 \text{ gpd} \times \frac{1 \text{ barrel of crude}}{32.5 \text{ gallons}} = 19{,}708 \text{ BPOD.}$$

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Reasonable Measure of Actual Production:

The USEPA guidelines require the use of "a reasonable measure of actual production of the facility". For the Refinery, the reasonable measure of actual production is calculated by adding the expected refinery fuel production to the crude oil credit for groundwater clean-up as follows:

270,000 BPOD + 19,708 BPOD = 289,708 BPOD

3. Applicable Technology-Based Effluent Limitations

Technology-Based effluent limitations based for petroleum refining point source category, cracking subcategory are found at 40 C.F.R. sections 419.20 – 419.27. These are mass-based limitations and are calculated using applicable size factors and process factors.

Determination of Size Factor:

Table F-6. Size Factor per 40 C.F.R. 419 Subpart B

1,000 bbl of feedstock per stream day	Size Factor
Less than 24.9	0.91
25.0 to 49.9	0.95
50.0 to 74.9	1.04
75.0 to 99.9	1.13
100.0 to 124.9	1.23
125.0 to 149.9	1.35
150.0 or greater	**1.41**

As previously discussed, the production rate at the Refinery is 289,708 BPOD, or 289.7 1,000 bbl of feedstock per stream day. Therefore the applicable size factor is that for 150.0 or greater which is equal to 1.41.

Determination of Process Factor:

The process factor is based on the calculation of the process configuration applicable to the facility. The different types of processes are grouped under the categories of crude, cracking and coking, lube, and asphalt. The feedstock rate for each process is divided by the production rate (refinery feedstock rate) to obtain the "process feedstock rate relative to the refinery feedstock rate". These values are totaled for each category and multiplied by a weighting factor from 40 C.F.R. Part 419 to obtain the process configuration value. The final process configuration value for the refinery is equal to the sum of the process configuration values from each category. Chevron has provided the feedstock rate for each process in Appendix 4A of the ROWD. The process configuration calculation for the Refinery, based on a production rate of 289,708 BPOD, is summarized in the following table:

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Table F-7. Process Configuration Calculation per 40 C.F.R. Part 419

Process	Process Feedstock Rate (x 1,000 bbls/day)	Process Feedstock Rate Relative to Refinery Feedstock Rate	Weighting Factor	Process Configuration
Crude				
Atmospheric Distillation	289.71	1.00	--	--
Vacuum Crude Distillation	155.13	0.54	--	--
Desalting	289.34	1.00	--	--
Total	734.18	2.54	1	2.54
Cracking and Coking				
Fluid Catalytic Cracking	72.83	0.25	--	--
Coking	76.70	0.26	--	--
Hydrocracking	54.53	0.19	--	--
Subtotal	204.06	0.70	6	4.20
Hydrotreating Products[1]	101.78	--	--	--
Total	305.84	--	--	--
Lube				
Total	0	0.00	13	0.00
Asphalt				
Total	0	0.00	12	0.00
Reforming and Alkylation[2]				
Cat Reforming	47.16	--	--	--
H_2SO_4 Alkylation	33.31	--	--	--
Total	80.47	--	--	--
Total Refinery Process Configuration at 289,708 bbls/day				**6.74**

1. The Discharger has provided hydrotreating products values as part of the cracking and coking process feedstock. Hydrotreating products are not included in the process configuration calculation. They are listed here as they will be considered in the BAT calculations in Table F-10 below.
2. The Discharger has provided reforming and alkylation values as another category of process feedstock. These values are not included in the process configuration calculation. They are listed here as they will be considered in BAT calculations in Table F-10 below.

The process configuration result of 6.74 is then applied to the following table:

Table F-8. Process Factor per 40 C.F.R. 419 Subpart B

Process configuration	Process Factor
Less than 2.49	0.58
2.5 to 3.49	0.63
3.5 to 4.49	0.74
4.5 to 5.49	0.88
5.5 to 5.99	1.00
6.0 to 6.49	1.09
6.5 to 6.99	**1.19**
7.0 to 7.49	1.29
7.5 to 7.99	1.41
8.0 to 8.49	1.53

The process configuration of 6.74 falls in the 6.5 to 6.99 range. Therefore the applicable process factor for the Refinery is equal to 1.19.

Calculation of Final Technology-Based Effluent Limitations:

The final technology-based effluent limitations are calculated by taking the ELGs found at 40 C.F.R. sections 419.22-419.24 and applying the following calculation:

Effluent Limitation = Production Rate x Size Factor x Process Factor x ELG

As previously discussed, the values for the Refinery are:

Production Rate = 289,708 BPOD = 289.71 kbbl/day

Size Factor = 1.41

Process Factor = 1.19

Taking BOD_5 as an example a sample calculation may be performed. 40 C.F.R. section 419.22 establishes an ELG for BPT of 9.9 lb/kbbl as a daily maximum. Therefore, the final effluent limitation is calculated as follows:

Effluent Limitation = 289.71 kbbl/day x 1.41 x 1.19 x 9.9 lb/kbbl = 4,812 lb/day

The following table summarizes final technology-based effluent limitation calculations:

Table F-9. Effluent Limitations per 40 C.F.R. sections 419.22-419.24

Parameter	ELG in 40 C.F.R. 419 B						Final Limit [1]		ELG Basis for Final Limit
	BPT 419.22		BAT 419.23		BCT 419.24				
	Daily Max (lb/kbbl)	30-day Avg. (lb/kbbl)	Daily Max (lb/kbbl)	30-day Avg. (lb/kbbl)	Daily Max (lb/kbbl)	30-day Avg. (lb/kbbl)	Daily Max (lb/day)	30-day Avg. (lb/day)	
BOD_5	9.9	5.5	--	--	9.9	5.5	4,812	2,673	BPT/BCT
TSS	6.9	4.4	--	--	6.9	4.4	3,354	2,139	BPT/BCT
COD	74	38.4	74	38.4	--	--	35,971	18,666	BPT/BAT
Oil and Grease	3	1.6	--	--	3	1.6	1,458	778	BPT/BCT
Ammonia (as N)	6.6	3	6.6	3	--	--	3,208	1,458	BPT/BAT
Sulfide	0.065	0.029	0.065	0.029	--	--	32	14	BPT/BAT
pH	The pH of the wastes discharged shall be within the range of 6.0 to 9.0 pH standard units (s.u.).						6.0 – 9.0 s.u.		BPT/BAT/BCT

1. Final Limits = throughput x size factor x process factor x ELG in 40 C.F.R sections 419.22-419.24. The feed rate for the Facility is 289.71; the Size Factor = 1.41; and the Process Factor = 1.19.

40 C.F.R. section 419.23(c)(1)(i) establishes that BAT limitations for total and hexavalent chromium and phenolic compounds are based on feedstock rates. The section assigns BAT effluent limitation factors for these pollutants. The effluent limitations are then calculated by multiplying the feedstock rates by the assigned factors. Feedstock rates were defined in Table F-7 above. The following table summarizes these calculations:

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Table F-10. BAT Limitations for Chromium and Phenolics per 40 C.F.R. section 419.23(c)(1)(i)

Pollutant	Preliminary Effluent Limitations Factor [1]		Feedstock Rate [2]	Effluent Limitations [3]	
	Maximum Daily	Average Monthly		Maximum Daily	Average Monthly
	(lb/kbbl)	(lb/kbbl)	(kbbl/day)	(lb/day)	(lb/day)
Phenolic Compounds					
Crude	0.013	0.003	734.18	9.5	2.2
Cracking & Coking[4]	0.147	0.036	305.84	45.0	11.0
Asphalt	0.079	0.019	---	---	---
Lube	0.369	0.090	---	---	---
Reforming & Alkylation	0.132	0.032	80.47	10.6	2.6
Limit (sum)	--	--	---	65.1	15.8
Total Chromium					
Crude	0.011	0.004	734.18	8.1	2.9
Cracking & Coking[4]	0.119	0.041	305.84	36.4	12.5
Asphalt	0.064	0.022	---	---	---
Lube	0.299	0.104	---	---	---
Reforming & Alkylation	0.107	0.037	80.47	8.6	3.0
Limit (sum)	---	---	---	53.1	18.4
Hexavalent Chromium					
Crude	0.0007	0.0003	734.18	0.5	0.2
Cracking & Coking[4]	0.0076	0.0034	305.84	2.3	1.0
Asphalt	0.0041	0.0019	---	---	---
Lube	0.0192	0.0087	---	---	---
Reforming & Alkylation	0.0069	0.0031	80.47	0.6	0.2
Limit (sum)	---	---	---	3.4	1.4

1. From 40 C.F.R. section 419.23(c)(1)(i).
2. Provided by Discharger. See Table F-7 above.
3. Calculated by multiplying the preliminary effluent limitations factor by the feedstock rate.
4. Includes hydrotreating products. See Table F-7 above.

Wet Weather Discharges:

During rain events, Chevron will also discharge treated contaminated storm water. The Discharger is provided a higher flow limit during rain events of 0.1-inch or more in a 24-hour period and for the 72 hours following the end of the associated rainfall event. The percentage of daily runoff that is considered "contaminated runoff" can only be changed when a revised percentage has been approved in writing by the Executive Officer. Order No. R4-2013-0025 established 89.3% as the amount of the storm water runoff that is considered contaminated as defined in 40 C.F.R. section 419.11(g).

The volume of storm water runoff is calculated based on the total wet weather flow minus the dry weather process flow. As indicated in Section II.B above, the total wet weather flow is 27 MGD and the dry weather process flow is 8.8 MGD. Therefore, the storm water runoff is calculated as follows:

27 MGD – 8.8 MGD = 18.2 MGD

The contaminated runoff is equal to 89.3% of the storm water as follows:

18.2 MGD x 89.3% = 16.252 MGD = 16,252,000 gpd

ELGs for contaminated runoff are established for BPT at 40 C.F.R. section 419.22(e); for BAT at section 419.23(f); and for BCT at section 419.24(e). Effluent limitations are calculated according to the following equation:

Effluent Limitation = ELG x contaminated runoff

Taking BOD_5 as an example a sample calculation may be performed. 40 C.F.R. section 419.22(e) establishes an ELG for BPT of 0.4 pounds per 1,000 gallons as a daily maximum. The final effluent limitation is calculated as follows:

$$\text{Effluent Limitation} = \frac{0.4 \text{ lb}}{1{,}000 \text{ gal}} \times 16{,}252{,}000 \text{ gal/day} = 6{,}500 \text{ lb/day}$$

The following table summarizes final technology-based effluent limitation calculations:

Table F-11. Summary of Technology-based Effluent Limitations for Contaminated Runoff at Discharge Point 001 During Wet Weather

Parameter	ELG at 40 C.F.R. part 419						Final Limitation [1]		ELG Basis for Final Limit
	BPT 419.22(e)		BAT 419.23(f)		BCT 419.24(e)				
	Daily Max (lb/1,000 gal)	30-day Avg. (lb/1,000 gal)	Daily Max (lb/1,000 gal)	30-day Avg. (lb/1,000 gal)	Daily Max (lb/1,000 gal)	30-day Avg. (lb/1,000 gal)	Daily Max (lb/day)	30-day Avg. (lb/day)	
BOD_5	0.40	0.22	--	--	0.40	0.22	6,501	3,576	BPT/BCT
TSS	0.28	0.18	--	--	0.28	0.18	4,551	2,925	BPT/BCT
COD	3.0	1.5	3.0	1.5	--	--	48,758	24,379	BPT/BAT
Oil and Grease	0.13	0.067	--	--	0.13	0.067	2,113	1,089	BPT/BCT
Phenolic Compounds	0.0029	0.0014	0.0029	0.0014	--	--	47.1	22.8	BPT/BAT
Ammonia	--	--	--	--	--	--	--	--	--
Sulfide	--	--	--	--	--	--	--	--	--
Total Chromium	0.006	0.0035	0.005	0.0018	--	--	81.0	29.3	BPT/BAT
Hexavalent Chromium	0.00052	0.0002	0.0005	0.00023	--	--	8.5	3.7	BPT/BAT
pH	The pH of the wastes discharged shall be within the range of 6.0 to 9.0 pH standard units.						6.0 – 9.0 s.u.		BPT/BCT/BAT

1. Calculated by multiplying the ELG by the contaminated runoff volume (16,252,000 gal/day).

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4. Final Technology-Based Effluent Limitations

Concentration-based:

In addition to the mass-based effluent limitations calculated above based on the ELGs, Order No. R4-2013-0025 also established concentration-based effluent limitations for these pollutants using the units of milligrams per liter (mg/L). Concentration-based effluent limitations are also included in this Order.

Dry Weather:

Final technology-based effluent limitations applicable during dry weather are equal to the process wastewater limitations calculated in Tables F-9 and F-10 above.

Wet Weather:

Final technology-based effluent limitations applicable during wet weather are equal to the process wastewater limitations for dry weather summarized in Table F-12 added to the

effluent limitations for contaminated runoff calculated in Table F-11 above. For example, the average monthly limitation for BOD_5 for dry weather is 2,673 lb/day and the average monthly limitation for BOD_5 for contaminated storm water runoff is 3,576 lb/day. The wet weather limitation is calculated as:

2,673 lb/day + 3,576 lb/day = 6,249 lb/day

The technology-based effluent limitations are summarized in the following table:

Table F-12. Summary of Final Technology-based Effluent Limitations for Discharge Point 001

Parameter	Units	Average Monthly Effluent Limitations	Maximum Daily Effluent Limitations
BOD_5	mg/L	36	66
Dry Weather	lbs/day	2,673	4,812
Wet Weather	lbs/day	6,249	11,313
TSS	mg/L	29	45
Dry Weather	lbs/day	2,139	3,354
Wet Weather	lbs/day	5,064	7,905
COD	mg/L	254	490
Dry Weather	lbs/day	18,666	35,971
Wet Weather	lbs/day	43,045	84,729
Oil and Grease	mg/L	11	20
Dry Weather	lbs/day	778	1,458
Wet Weather	lbs/day	1,867	3,571
Phenolic Compounds	mg/L	0.19	0.49
Dry Weather	lbs/day	15.8	65.1
Wet Weather	lbs/day	38.6	112.2
Ammonia as N	mg/L	20	44
Dry Weather	lbs/day	1,458	3,208
Wet Weather	lbs/day	1,458	3,208
Sulfide	mg/L	0.19	0.49
Dry Weather	lbs/day	14	32
Wet Weather	lbs/day	14	32
Total Chromium	mg/L	0.23	0.65
Dry Weather	lbs/day	18.4	53.1
Wet Weather	lbs/day	47.7	134.1
Hexavalent Chromium	mg/L	0.02	0.04
Dry Weather	lbs/day	1.4	3.4
Wet Weather	lbs/day	5.1	11.9
pH	s.u.	[1]	

[1] The pH of the effluent shall remain within the range of 6.0 to 9.0 pH units except during excursions from the range as permitted by 40 C.F.R. 401.17. The total time during which the pH values are outside the required range of pH values (1) shall not exceed 7 hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

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C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the Ocean Plan.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Basin Plan. The beneficial uses specified in the Basin Plan that are applicable to the Pacific Ocean are summarized in section III.C.1 of this Fact Sheet. The Basin Plan incorporates by reference the requirements of the Ocean Plan and Thermal Plan whereby it states, *"The State Board's 'Water Quality Control Plan for Ocean Waters of California' (Ocean Plan), and the 'Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California' (Thermal Plan), and any revisions thereto shall also apply to all ocean waters of the Region."*

b. Ocean Plan. As noted in section III.C.3 of this Fact Sheet, the State Water Board adopted an Ocean Plan that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Ocean Plan. The beneficial uses applicable to the Pacific Ocean are summarized in section III.C.3 of this Fact Sheet. The Ocean Plan includes both narrative and numeric water quality objectives applicable to the receiving water for discharges through Outfall 001.

Table 1 of the Ocean Plan (2015) (known as Table B in previous editions of the Ocean Plan) includes the following water quality objectives for toxic pollutants and whole effluent toxicity:

i. 6-month median, daily maximum, and instantaneous maximum objectives for 21 chemicals and chemical characteristics, including total residual chlorine and chronic toxicity, for the protection of marine aquatic life.

ii. 30-day average objectives for 20 non-carcinogenic chemicals for the protection of human health.

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iii. 30-day average objectives for 42 carcinogenic chemicals for the protection of human health.

iv. Daily maximum objectives for acute and chronic toxicity.

c. Thermal Plan. The State Water Board adopted the Thermal Plan on January 7, 1971. The Thermal Plan includes narrative water quality objectives for discharges of elevated temperature wastes for existing discharges (those discharges at least under construction prior to the adoption of the Plan) and for new discharges. A revised Thermal Plan was adopted by the State Water Board on September 18, 1975. Definition 10 of the Thermal Plan states that any discharge which was taking place prior to the adoption of the plan is considered an existing discharge. Chevron has operated the Refinery since 1911, and it is therefore considered an existing discharge.

Water Quality Objective 3.A.1 is applicable to existing thermal discharges to the coastal waters of California:

"Elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses and areas of special biological significance."

3. Determining the Need for WQBELs

a. Reasonable Potential Methodology

Discharge Point 001 is located in the Santa Monica Bay and is subject to permitting procedures contained in the Ocean Plan. The need for effluent limitations based on water quality objectives in Table 1 of the Ocean Plan was evaluated in accordance with C.F.R. section 122.44(d) and guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the "California Ocean Plan Reasonable Potential Analysis (RPA) Amendment" that was adopted by the State Water Board on April 21, 2005. The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited amount of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and minimum probable initial dilution), can then be compared to the appropriate objective to determine the potential for an exceedance of that objective and the need for an effluent limitation.

The water quality objectives contained in the Ocean Plan are summarized in the table below. This table includes pollutants which had effluent limitations for Discharge Point 001 in the prior order and/or pollutants which were detected in the effluent. As will be discussed in Section IV.C.3.c below, an RPA was conducted on the pollutants listed in this table.

Table F-13. Ocean Plan Water Quality Objectives[1]

Parameter	6-Month Median (µg/L)	Daily Maximum (µg/L)	Instantaneous Maximum (µg/L)	30-Day Average (µg/L)
Objectives for Protection of Marine Aquatic Life				
Arsenic	8	32	80	--
Chromium VI	2	8	20	--
Copper	3	12	30	--
Lead	2	8	20	--
Mercury	0.04	0.16	0.4	--
Nickel	5	20	50	--
Selenium	15	60	150	--
Silver	0.7	2.8	7	__
Zinc	20	80	200	--
Cyanide	1	4	10	--
Ammonia (as N)	600	2400	6000	--
Acute Toxicity	--	0.3 TU_a	--	
Chronic Toxicity	--	1 TU_c	--	--
Phenolic Compounds	30	120	300	--
Chlorinated Phenolics	1	4	10	--
Endosulfan	0.009	0.018	0.027	--
Endrin	0.002	0.004	0.006	--
HCH	0.004	0.008	0.012	--
Radioactivity	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			
Objectives for Protection of Human Health – Non-Carcinogens				
Antimony	--	--	--	1,200
Chromium III	--	--	--	190,000
Ethylbenzene	--	--	--	4,100
Thallium	--	--	--	2
Toluene	--	--	--	85,000
Tributyltin	--	--	--	0.0014
Objectives for Protection of Human Health – Carcinogens				
Acrylonitrile	--	--	--	0.10
Aldrin	--	--	--	0.000022

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Parameter	6-Month Median (µg/L)	Daily Maximum (µg/L)	Instantaneous Maximum (µg/L)	30-Day Average (µg/L)
Benzene	--	--	--	5.9
Benzidine	--	--	--	0.000069
Beryllium	--	--	--	0.033
Bis(2-chloroethyl) ether	--	--	--	0.045
Carbon tetrachloride	--	--	--	0.90
Chlordane	--	--	--	0.000023
Chlorodibromomethane	--	--	--	8.6
Chloroform	--	--	--	130
DDT	--	--	--	0.00017
3,3'-dichlorobenzidine	--	--	--	0.0081
Dichlorobromomethane	--	--	--	6.2
Dieldrin	--	--	--	0.00004
1,2-diphenylhydrazine	--	--	--	0.16
Halomethanes	--	--	--	130
Heptachlor	--	--	--	0.00005
Heptachlor epoxide	--	--	--	0.00002
Hexachlorobenzene	--	--	--	0.00021
N-nitrosodi-N-propylamine	--	--	--	0.38
PAHs	--	--	--	0.0088
PCBs	--	--	--	0.000019
TCDD equivalents	--	--	--	0.0000000039
Toxaphene	--	--	--	0.00021
2,4.6-trichlorophenol	--	--	--	0.29

1. Water quality objectives for Ocean Plan Table 1 pollutants which had effluent limitations for Discharge Point 001 in the prior order and/or pollutants which were detected in the effluent.

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According to the 2015 Ocean Plan amendment, the RPA can yield three endpoints

Endpoint 1: An effluent limitation is required and monitoring is required;

Endpoint 2: An effluent limitation is not required and the Regional Water Board may require monitoring; and

Endpoint 3: The RPA is inconclusive, monitoring is required, and an existing effluent limitation may be retained or a permit reopener clause may be included to allow inclusion of an effluent limitation if future monitoring warrants the inclusion.

b. **Minimal Initial Dilution**

The implementation provisions for Table 1 in section III.C of the Ocean Plan specify that the minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates are to be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure. Before establishing a dilution credit for a discharge, it must first be determined if, and how much, receiving water is available to dilute the discharge.

As discussed in Section II.B above, Order No. R4-2013-0025 established the minimum initial dilution factor (Dm) for discharges from the Facility at Discharge Point 001 to be 80 to 1. This was established upon the construction of a 3,200-foot outfall line extension which includes a diffuser in 1994. The Discharger has indicated that no additions or modifications to the Facility or the outfall at Discharge Point 001 have been proposed that would alter the previously determined dilution characteristics. Therefore, the dilution ratio established in Order No. R4-2013-0025 is retained in this Order for the discharge to the Pacific Ocean and applied to the RPA and WQBELs established herein.

c. **Background Seawater Concentrations**

Table 3 of the Ocean Plan establishes background concentrations (Cs) for some pollutants to be used when determining reasonable potential. In accordance with Table 1 implementation procedures, Cs equals zero for all pollutants not established in Table 3. The background concentrations provided in Table 3 are summarized below:

Table F-14. Background Seawater Concentrations (Cs)

Parameter	Ocean Plan Table 3 Background Concentration (µg/L)
Arsenic	3
Copper	2
Mercury	0.0005
Silver	0.16
Zinc	8

d. **RPA for Ocean Plan Pollutants**

Effluent data submitted to the Regional Water Board for the period of August 2012 through March 2017 for Discharge Point 001 were considered in the RPA. Pollutants which had effluent limitations in Order No. R4-2013-0025 or were detected in the effluent (see Table F-2 above) were considered in the RPA. The dilution ratio of 80:1 was considered to evaluate reasonable potential in accordance with the procedures contained in the Ocean Plan. Based on the evaluation using the RPcalc 2.2 software tool, which was developed by the State Water Board for the purpose of conducting RPAs of ocean discharges, the discharger demonstrates reasonable potential to cause or contribute to an excursion above an Ocean Plan Table 1 water quality objective (Endpoint 1) for DDT and TCDD equivalents. Effluent limitations are required for these pollutants.

For many of the Ocean Plan Table 1 parameters evaluation using the *RPcalc 2.2* software tool yielded an inconclusive result (Endpoint 3). The Ocean Plan indicates

that when the RPA is inconclusive, monitoring for the pollutant is required and any effluent limitation for a pollutant from the prior order shall be retained in the permit. Order No. R4-2013-0025 included effluent limitations for all of the pollutants with Endpoint 3 results: endosulfan, endrin, thallium, tributyltin, acrylonitrile, aldrin, benzidine, beryllium, bis(2-chloroethyl) ether, carbon tetrachloride, chlordane, 1,2-diphenylhydrazine, heptachlor, heptachlor epoxide, hexachlorobenzene, n-nitrosodi-n-propylamine, PAHs, PCBs and toxaphene. The limitations for these pollutants are retained in this Order.

Order No. R4-2013-0025 included new effluent limitations for acute toxicity. The Discharger demonstrated that it could not immediately comply with these limitations and the Regional Board adopted TSO No. R4-2013-0026 to allow Chevron to make the changes necessary to come into compliance with the acute toxicity limitations. The TSO included an interim limitation for acute toxicity. After identifying the source of acute toxicity and selecting a treatment system, Chevron requested additional time to complete these changes. The toxicity effluent limitations for these pollutants from Order No. R4-2013-0025 are included in this Order, and TSO No. R4-2017-YYYY has been adopted concurrent with this Order to provide additional time to complete construction and testing of the selected technology to treat the discharge.

Radionuclides were analyzed for but not detected above laboratory reporting limits. Therefore, an RPA was not performed for radioactivity based on best professional judgment (BPJ). Monitoring for radionuclides will continue.

As indicated in Table F-2 above, results for HCH were not reported during the effective time period of Order No. R4-2013-0025 therefore an RPA could not be performed. The effluent limitations for HCH in Order No. R4-2013-0025 are included in this Order.

A summary of the RPA results is provided in the table below:

Table F-15. Reasonable Potential Analysis (RPA) Results Summary for Discharge Point 001

Pollutant	Units	n[1]	MEC[2,3]	Most Stringent Criteria[13]	Background	RPA Endpoint[4]
Objectives for Protection of Marine Aquatic Life						
Arsenic, Total Recoverable	µg/L	49	27	8	3	Endpoint 2
Cadmium, Total Recoverable	µg/L	49	0.26	1	0	Endpoint 2
Chromium (Hexavalent), Total Recoverable	µg/L	50	0.81	2	0	Endpoint 2[5]
Copper, Total Recoverable	µg/L	49	13	3	2	Endpoint 2
Lead, Total Recoverable	µg/L	110	13	2	0	Endpoint 2
Mercury	µg/L	49	0.16	0.04	0.0005	Endpoint 2
Nickel, Total Recoverable	µg/L	49	19	5	0	Endpoint 2
Selenium, Total Recoverable	µg/L	49	330	15	0	Endpoint 2
Silver, Total Recoverable	µg/L	49	0.59	0.7	0.16	Endpoint 2

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Pollutant	Units	n[1]	MEC[2,3]	Most Stringent Criteria[13]	Background	RPA Endpoint[4]
Zinc, Total Recoverable	µg/L	49	360	20	8	Endpoint 2
Cyanide	µg/L	19	22	1	0	Endpoint 2
Ammonia	µg/L	212	36	600	0	Endpoint 2[5]
Phenolic Compounds (non-chlorinated)[6]	µg/L	52	540	30	0	Endpoint 2
Chlorinated Phenolics[7]	µg/L	20	ND[8]	1	0	Endpoint 3
Endosulfan	µg/L	4	0.014	0.009	0	Endpoint 3
Endrin	µg/L	4	<0.0019	0.002	0	Endpoint 3
Objectives for Protection of Human Health – Non-Carcinogens						
Antimony	µg/L	4	2.7	1200	0	Endpoint 2
Chromium (III)	µg/L	4	1.8	190,000	0	Endpoint 2
Ethylbenzene	µg/L	15	2.2	4,100	0	Endpoint 2
Thallium	µg/L	4	<0.5	2	0	Endpoint 3
Toluene	µg/L	15	4.8	85,000	0	Endpoint 2
Tributyltin	µg/L	9	<0.25	0.0014	0	Endpoint 3[14]
Objectives for Protection of Human Health – Carcinogens						
Acrylonitrile	µg/L	5	<1	0.10	0	Endpoint 3[14]
Aldrin	µg/L	4	<0.0014	0.000022	0	Endpoint 3[14]
Benzene	µg/L	16	0.83	5.9	0	Endpoint 2
Benzidine	µg/L	7	<5.2	0.000069	0	Endpoint 3[14]
Beryllium	µg/L	4	<0.25	0.033	0	Endpoint 3[14]
Bis(2-chloroethyl) ether	µg/L	7	<0.4	0.045	0	Endpoint 3[14]
Carbon tetrachloride	µg/L	5	<0.25	0.90	0	Endpoint 3
Chlordane	µg/L	4	<0.084	0.000023	0	Endpoint 3[14]
Chlorodibromomethane	µg/L	4	1.7	8.6	0	Endpoint 2
Chloroform	µg/L	5	5.8	130	0	Endpoint 2
DDT[9]	µg/L	53	0.0002	0.00017	0	Endpoint 1
3,3'-dichlorobenzidine	µg/L	7	<4	0.0081	0	Endpoint 3[14]
Dichlorobromomethane	µg/L	4	1.8	6.2	0	Endpoint 2
Dieldrin	µg/L	4	<0.0019	0.00004	0	Endpoint 3[14]
1,2-diphenylhydrazine	µg/L	7	<1	0.16	0	Endpoint 3[14]
Halomethanes[10]	µg/L	5	13.7	130	0	Endpoint 2
Heptachlor	µg/L	4	<0.0029	0.00005	0	Endpoint 3[14]

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Pollutant	Units	n[1]	MEC[2,3]	Most Stringent Criteria[13]	Background	RPA Endpoint[4]
Heptachlor epoxide	µg/L	4	<0.0024	0.00002	0	Endpoint 3[14]
Hexachlorobenzene	µg/L	7	<1	0.00021	0	Endpoint 3[14]
N-nitrosodi-N-propylamine	µg/L	7	<2	0.38	0	Endpoint 3[14]
PAHs[11]	µg/L	11	ND[8]	0.0088	0	Endpoint 3
PCBs[12]	µg/L	49	ND[8]	0.000019	0	Endpoint 3
TCDD equivalents[13]	µg/L	10	$7.5x10^{-7}$	$3.9x10^{-9}$	0	Endpoint 1
Toxaphene	µg/L	5	<0.24	0.00021	0	Endpoint 3[14]
2,4,6-trichlorophenol	µg/L	19	<0.53	0.29	0	Endpoint 3[14]

1. Number of data points available for the RPA.
2. If there is a detected value, the highest reported value is summarized in the table. If there are no detected values, the lowest MDL is summarized in the table.
3. Note that the reported MEC does not account for dilution. The RPA does account for dilution; therefore it is possible for a parameter with an MEC in exceedance of the most stringent criteria not to present an Endpoint 1.
4. Endpoint 1 – Reasonable Potential (RP) determined, limit required, monitoring required.
   Endpoint 2 – Discharger determined not to have RP, monitoring may be established.
   Endpoint 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring.
5. No water quality-based effluent limitation needed but the technology-based effluent limitation applies.
6. Non-chlorinated phenolic compounds represent the sum of 2-nitrophenol; phenol; 2,4-dimethylphenol; 2,4-dinitrophenol; 2-methyl-4,6-dinitrophenol; and 4-nitrophenol.
7. Chlorinated phenolic compounds represent the sum of 2-chlorophenol; 2,4-dichlorophenol; 2,4,6-trichlorophenol; 4-chloro-3-methylphenol; and pentachlorophenol.
8. All results are not-detected (ND) but the MDL was not reported.
9. DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, and 2,4'-DDD.
10. Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).
11. PAHs shall mean the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo(k)fluoranthene; 1,12-benzoperylene; benzo(a)pyrene; chrysene; dibenzo(a,h)anthracene; fluorine; indeno(1,2,3-cd)pyrene; phenanthrene; and pyrene.
12. PCBs shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Arolclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
13. Most stringent criteria from Table 1 of the Ocean Plan.
14. The RPA was inconclusive because the pollutant was not detected but the detection limit was greater than the criteria.
15. TCDD Equivalents shall mean the 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. USEPA method 1613 may be used to analyze dioxin and furan congeners.

    Dioxin-TEQ (TCDD Equivalents) = Σ (C_x x TEF_x)

    Where: C_x = concentration of dioxin or furan congener x

    TEF_x = TEF for congener x

Toxicity Equivalency Factors

Isomer Group	Toxicity Equivalency Factor (TEF)
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

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4. WQBEL Calculations

From the Table 1 water quality objectives of the Ocean Plan, effluent limitations are calculated according to Equation 1 of the Ocean Plan for all pollutants, except for toxicity and radioactivity:

Ce = Co + Dm(Co - Cs)

Where:

Ce = the effluent limitation (µg/L)

Co = the water quality objective to be met at the completion of initial dilution (µg/L)

Cs = background seawater concentration (µg/L)

Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

As previously discussed, Table F-15 above lists the background concentrations (Cs) established in Table 3 of the Ocean Plan. Cs equals zero for all pollutants not established in Table 3.

As discussed in Sections II.B and IV.C.3 of the Fact Sheet, the Dm, approved by the State Water Board, is 80:1.

The following demonstrates how the WQBELs, taking chlorinated phenolics as an example, are established:

Chlorinated Phenolics

Compute effluent concentration limitations and values at Discharge Point 001:

As previously stated the Ocean Plan equation for effluent limitations (Ce) is:

Ce = Co + Dm (Co - Cs)

As defined above for Discharge Point 001 for chlorinated phenolics:

Co = 1 µg/L (6-Month Median)
4 µg/L (Daily Maximum)
10 µg/L (Instantaneous Maximum)
Cs = 0 (Background Seawater Concentration)
Dm = 80 (minimum probable initial dilution)

Therefore:

C_e = 1 µg/L + 80 (1 µg/L – 0) = **81 µg/L** (6-Month Median)
C_e = 4 µg/L + 80 (4 µg/L – 0) = **324 µg/L** (Daily Maximum)
C_e = 10 µg/L + 80 (10 µg/L – 0) = **810 µg/L** (Instantaneous Maximum)

Section III.C.4.j of the Ocean Plan states that the permit "shall also specify effluent limitations in terms of mass emission rate limits" applicable to the commingled discharge in addition to concentration-based WQBELs. This Order establishes mass emission rate effluent limitations applicable to the commingled discharge at Discharge Point 001 (i.e., instantaneous maximum WQBELs). The mass emission rate limits are calculated utilizing Equation 3 of the Ocean Plan:

L_e = 0.00834 x Ce x Q

Where

L_e = the total mass emission limitation (lbs/day)

Ce = the effluent concentration limit (µg/L)

Q = the flow rate (MGD)

Compute the total mass-based limitations (L_e) of selenium for the combined effluent flow at Discharge Point 001 based on a dry weather flow of 8.8 MGD and a wet weather flow of 27 MGD at Monitoring Location EFF-001.

Dry weather:

L_e = 0.00834 x 81 µg/L x 8.8 MGD = **5.9 lbs/day** (6-Month Median)

L_e = 0.00834 x 324 µg/L x 8.8 MGD = **23.8 lbs/day** (Daily Maximum)

Wet weather:

L_e = 0.00834 x 81 µg/L x 27 MGD = **18.2 lbs/day** (6-Month Median)

L_e = 0.00834 x 324 µg/L x 27 MGD = **72.9 lbs/day** (Daily Maximum)

5. Temperature

On July 24, 1989, the Regional Water Board adopted Order 89-079 increasing the effluent temperature limitation from 100°F to 104°F. This Order continues the effluent limitation established in Order No. R4-2013-0025: the temperature of the wastes discharged shall not exceed that necessary to assure protection of the beneficial uses of the receiving waters; but in no case shall the temperature exceed 104°F in the effluent.

6. Bacteria

The Ocean Plan contains water quality objectives for bacteria that apply to the discharge to the Pacific Ocean from Discharge Point 001 as follows:

Water-Contact Standards

Both the State Water Board and the California Department of Public Health (CDPH) have established standards to protect water contact recreation in coastal waters from bacterial contamination. Subsection a of this section contains bacterial objectives adopted by the State Water Board for ocean waters used for water contact recreation. Subsection b describes the bacteriological standards adopted by CDPH for coastal waters adjacent to public beaches and public water contact sports areas in ocean waters.

a. State Water Board Water-Contact Standards

1) Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the Regional Board (i.e., waters designated as REC-1), but including all kelp beds, the following bacterial objectives shall be maintained throughout the water column:

30-day Geometric Mean – The following standards are based on the geometric mean of the five most recent samples from each site:

i. Total coliform density shall not exceed 1,000 per 100 mL;

ii. Fecal coliform density shall not exceed 200 per 100 mL; and

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iii. Enterococcus density shall not exceed 35 per 100 mL.

Single Sample Maximum

i. Total coliform density shall not exceed 10,000 per 100 mL;

ii. Fecal coliform density shall not exceed 400 per 100 mL;

iii. Enterococcus density shall not exceed 104 per 100 mL; and

iv. Total coliform density shall not exceed 1,000 per 100 mL when the fecal coliform/total coliform ratio exceeds 0.1.

2) The "Initial Dilution Zone" of wastewater outfalls shall be excluded from designation as "kelp beds" for purposes of bacterial standards, and Regional Boards should recommend extension of such exclusion zone where warranted to the State Water Board (for consideration under Chapter III. J.). Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds for purposes of bacterial standards.

b. CDPH Standards

CDPH has established minimum protective bacteriological standards for coastal waters adjacent to public beaches and for public water-contact sports areas in ocean waters. These standards are found in the California Code of Regulations, title 17, section 7958, and they are identical to the objectives contained in subsection a. above. When a public beach or public water-contact sports area fails to meet these standards, CDPH or the local public health officer may post with warning signs or otherwise restrict use of the public beach or public water-contact sports area until the standards are met. The CDPH regulations impose more frequent monitoring and more stringent posting and closure requirements on certain high-use public beaches that are located adjacent to a storm drain that flows in the summer.

For beaches not covered under AB 411 regulations, CDPH imposes the same standards as contained in Title 17 and requires weekly sampling but allows the county health officer more discretion in making posting and closure decisions.

c. Shellfish Harvesting Standards

At all areas where shellfish may be harvested for human consumption, as determined by the Regional Board, the following bacterial objectives shall be maintained throughout the water column:

1) The median total coliform density shall not exceed 70 per 100 mL, and not more than 10 percent of the samples shall exceed 230 per 100 mL.

This Order includes bacterial monitoring in order to confirm that the discharge is not contributing to bacterial impairment in the receiving water. In addition, this Order contains receiving water limitations for bacteria to ensure that the discharge is not contributing to an impairment of the receiving water environment**.**

7. Whole Effluent Toxicity (WET)

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxics amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is

conducted over a short time and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction and growth.

Chronic Toxicity

Order No. R4-2013-0025 established an effluent limitation at Discharge Point 001 of 81 TU_c for chronic toxicity. Monitoring results for the period from August 2012 through March 2017 included 53 data points for chronic toxicity results. The values reported ranged from 10 TU_c to 76.9 TU_c. As these results were all below the effluent limitation of 81 TU_c, the data does not demonstrate reasonable potential.

The Ocean Plan addresses the application of chronic toxicity requirements based on minimum probable dilutions (D_m) for ocean discharges. Following the 2015 Ocean Plan, dischargers are required to conduct chronic toxicity monitoring for ocean discharges with D_m factors ranging from 99 to 349. Dischargers with D_m factors below 99 are required to conduct only chronic toxicity testing. The D_m for Discharge Point 001 is 80 for ammonia and chronic toxicity. Since D_m is less than 99 for Discharge Point 001, a chronic toxicity final effluent limitation has been assigned to Discharge Point 001.

The Ocean Plan establishes a daily maximum chronic toxicity objective of 1.0 TUc = 100/(No Observed Effect Concentration (NOEC)), using a 5-concentration hypothesis test. This Order/Permit includes final effluent limitations for chronic toxicity using the Test of Significant Toxicity (TST) hypothesis testing approach. This statistical approach is consistent with the Ocean Plan in that it provides maximum protection to the environment since it more reliably identifies chronic toxicity than the current NOEC hypothesis-testing approach (See *2015 California Ocean Plan, Section III.F and Appendix I*).

On July 07, 2014, the Chief Deputy of the Water Quality Division announced that the State Water Board would be releasing a revised version of the Chronic Toxicity Plan for public comment within a few weeks. Regional Water Board staff awaits its release. This Order contains numeric chronic toxicity effluent limitations. Compliance with the chronic toxicity requirement contained in this Order shall be determined in accordance to sections VII.K. Nevertheless, this Order contains a reopener to allow the Regional Water Board and USEPA to modify the permit in the future, if necessary, to make it consistent with any new policy, plan, law, or regulation.

For this permit, chronic toxicity in the discharge is evaluated using a maximum daily effluent limitation that utilizes USEPA's 2010 TST hypothesis testing approach. The chronic toxicity effluent limitations are expressed as "Pass" for each maximum daily individual result.

In January 2010, USEPA published a guidance document titled *EPA Regions 8, 9 and 10 Toxicity Training Tool*, which among other things discusses permit limit expression for chronic toxicity. The document acknowledges that NPDES regulations at 40 C.F.R. § 122.45(d) require that all permit limits be expressed, unless impracticable, as an Average Weekly Effluent Limitation (AWEL) and an Average Monthly Effluent Limitation (AMEL) for POTWs. Following Section 5.2.3 of the Technical Support Document (TSD), the use of an AWEL is not appropriate for WET. In lieu of an AWEL for POTWs, USEPA recommends establishing a Maximum Daily Effluent Limitation (MDEL) for toxic pollutants and pollutants in water quality permitting, including WET. For an ocean discharge, this is appropriate because the 2015 Ocean Plan only requires a MDEL and does not include Average Monthly or Average Weekly Effluent Limitations for chronic toxicity (See 2015 California Ocean Plan, section II.D.7.).

The MDEL is the highest allowable value for the discharge measured during a calendar day or 24-hour period representing a calendar day. The AMEL is the highest allowable value for the average of daily discharges obtained over a calendar month. For WET, this is the average of individual WET test results for that calendar month. In June 2010, USEPA published another guidance document titled *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010), in which they recommend the following: "Permitting authorities should consider adding the TST approach to their implementation procedures for analyzing valid WET data for their current NPDES WET Program." The TST approach is another statistical option for analyzing valid WET test data. Use of the TST approach does not result in any changes to EPA's WET test methods. Section 9.4.1.2 of USEPA's *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/0136,1995), recognizes that, "the statistical methods recommended in this manual are not the only possible methods of statistical analysis." The TST approach can be applied to acute (survival) and chronic (sublethal) endpoints and is appropriate to use for both freshwater and marine EPA WET test methods.

The interpretation of the measurement result from USEPA's TST statistical approach (Pass/Fail) for effluent and receiving water samples is, by design, independent from the concentration-response patterns of the toxicity tests for samples when it is required. Therefore, when using the TST statistical approach, application of WPA's 2000 guidance on effluent and receiving waters concentration-response patterns will not improve the appropriate interpretation of TST results as long as all Test Acceptability Criteria and other test review procedures – including those related to Quality Assurance for effluent and receiving water toxicity tests, reference toxicant tests, and control performance (mean, standard deviation, and coefficient of variation) – described by the WET test methods manual and TST guidance, are followed. The 2000 guidance may be used to identify reliable, anomalous, or inconclusive concentration-response patterns and associated statistical results to the extent that the guidance recommends review of test procedures and laboratory performance already recommended in the WET test methods manual. The guidance does not apply to single concentration (IWC) and control statistical t-tests and does not apply to the statistical assumptions on which the TST is based. The Regional Water Board and USEPA will not consider a concentration-response pattern as sufficient basis to determine that a TST t-test result for a toxicity test is anything other than valid, absent other evidence. In a toxicity laboratory, unexpected concentration-response patterns should not occur with any regular frequency and consistent reports of anomalous or inconclusive concentration-response patterns or test results that are not valid will require an investigation of laboratory practices.

Any Data Quality Objectives or Standard Operating Procedure used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent or receiving water toxicity test measurement results from the TST statistical approach which include a consideration of concentration-response patterns and/or percent minimum significant difference (PMSD) must be submitted for review by the Regional Water Board, in consultation with USEPA and the State Water Board's Quality Assurance Officer and Environmental Laboratory Accreditations Program (40 C.F.R. § 122.44(h)). The PMSD criteria only apply to compliance for NOEC and the sublethal endpoints of the NOEC, and therefore are not used to interpret TST results.

The TST's null hypothesis for chronic toxicity is:

H0: Mean response (In-stream Waste Concentration (IWC) in % effluent) ≤ 0.75 mean response (Control).

Results obtained from the chronic toxicity test are analyzed using the TST approach and an acceptable level of chronic toxicity is demonstrated by rejecting the null hypothesis and reporting "Pass" or "P".

The chronic toxicity IWC for Discharge Point 001 is 100/(80+1) = 1.23 percent effluent.

Acute Toxicity

Order No. R4-2013-0025 established an effluent limitation at Discharge Point 001 of 2.7 TU_a for acute toxicity. Monitoring results for the period from August 2012 through March 2017 included 52 data points for acute toxicity results. The values reported ranged from 1.0 TU_a to 14.5 TU_a. The acute toxicity effluent limitation of 2.7 TU_a was exceeded by some of the acute toxicity data reported. Therefore the acute toxicity limit from Order No. R4-2013-0025 is included in this Order. This limitation was calculated using the Ocean Plan objective of 0.3 TU_a for the daily maximum and 10% of the dilution ration (as the acute toxicity mixing zone) as follows:

$$Ce = Ca + (0.1) Dm (Ca)$$

Where:

Ce = the effluent daily maximum for acute toxicity

Ca = the concentration (water quality objective) to be met at the edge of the acute toxicity mixing zone

Dm = minimum probable initial dilution expressed as parts seawater per part wastewater (80:1 for Discharge Point 001) (This equation applies only when Dm > 24)

Therefore:

$$Ce = 0.3 + (0.1) (80) (0.3) = 2.7\ TU_a$$

The Regional Water Board adopted TSO No. R4-2013-0026 on February 7, 2013 to provide the Discharger with a time period of four years and two months to make required changes to meet the acute toxicity effluent limitation. TSO No. R4-2013-0026 included an interim limitation of 8.7 TU_a for acute toxicity. After identifying the source of acute toxicity and selecting a treatment system, Chevron requested additional time to complete the necessary changes. TSO No. R4-2017-YYYY has been adopted concurrent with this Order to allow the extra time needed to complete these changes.

8. Radioactivity

The prior order included an effluent limitation for radioactivity based on Ocean Plan water quality objectives. During the term of Order No. R4-2013-0025, radionuclides were analyzed for but not detected above the laboratory reporting limits. Therefore, based on best professional judgment (BPJ) effluent limitations for radioactivity are not included in this Order. Monitoring for radionuclides will continue in this Order.

9. DDT and PCBs

Consistent with 40 C.F.R. §§ 130.2 and 130.7, section 303(d) of the CWA and USEPA guidance for developing TMDLs in California (USEPA, 2000a), the USEPA issued the *Santa Monica Bay TMDLs for DDTs and PCBs* on March 26, 2012. The TMDL includes

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Wasteload Allocations (WLAs) for DDT and PCBs for point sources, including the Chevron El Segundo Refinery that are given in Table 6-2 of the TMDL. This Order implements the requirements of the Santa Monica Bay TMDL for DDTs and PCBs.

The Los Angeles Water Board developed WQBELs for DDTs and PCBs on the basis of the WLAs. The Los Angeles Water Board developed WQBEL's pursuant to 40 C.F.R. section 122.44(d)(1)(vii), which does not require or contemplate a reasonable potential analysis. Additionally, section 8 of the TMDL, (Implementation Recommendations) stipulates that "all discharges with WLAs identified in Table 6-2 are to be considered by NPDES permit writers to have reasonable potential under 40 C.F.R. 122.44(d) and require WQBELs following this TMDL."

Table 6-2 of the TMDL provides site-specific WLAs for the Refinery for DDT and PCBs equal to 0.0096 µg/L and 0.000259 µg/L, respectively, which are intended to meet the target concentrations within the receiving water. The WLAs are equal to the Ocean Plan objectives for the protection of human health. As described in section 6.2 of the TMDL, the WLAs are to be translated to WQBELs with no further adjustment of dilution credit or background concentrations. In section 8.1, USEPA recommends the concentration-based WLAs be implemented as an average monthly WQBELs in permits. The average monthly effluent limits for DDT and PCBs would be 0.0096 µg/L and 0.000259 µg/L, respectively.

Table 6-2 of the TMDL also establishes site-specific mass-based WLAs for the Refinery of 358 g/year for DDT and 10 g/year for PCBs. These WLAs were calculated assuming a maximum daily flow of 27 MGD for 365 days per year as in the following example:

Yearly WLA = C (µg/L) x (g/10^6 µg) x (L/2.64×10^{-7} MG) x Q (MGD) x 365 days/year

Where: C = concentration-based WLA (µg/L)

Q = maximum daily flow (MGD)

For DDT: C = 0.0096 µg/L

Q = 27 MGD

Therefore the Yearly WLA for DDT =

0.0096 µg/L x (g/10^6 µg) x (L/2.64×10^{-7} MG) x 27 MGD x 365 days/year = 358 g/year

Since the Yearly WLA assumes the maximum daily flow for the entire year, compliance with the Yearly WLAs may be demonstrated through compliance with the concentration-based WLAs and maximum daily flow.

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10. Final WQBELs

Table F-16. Summary of Water Quality-Based Effluent Limitations for Discharge Point 001

Parameter	Units	Effluent Limitations			
		6-Month Median	Average Monthly	Daily Maximum	Instantaneous Maximum
Temperature	°F	--	--	--	104
Acute Toxicity	TU_a	--	--	--	2.7
Chronic Toxicity	Pass or Fail, % Effect	--	--	Pass or %Effect<50	--
Selenium, Total Recoverable	µg/L	1,215	--	4,860	12,150
Phenolics, chlorinated[1]	µg/L	81	--	324	810
Endosulfan	µg/L	0.729	--	1.458	2.187
Endrin	µg/L	0.162	--	0.324	0.486
HCH[2]	µg/L	0.320	--	0.640	0.972
Thallium	µg/L	--	162	--	--
Tributyltin	µg/L	--	0.11	--	--
Acrylonitrile	µg/L	--	8.1	--	--
Aldrin	µg/L	--	1.8	--	--
Benzidine	µg/L	--	0.0056	--	--
Beryllium	µg/L	--	2.7	--	--
Bis(2-chloroethyl) ether	µg/L	--	3.6	--	--
Carbon tetrachloride	µg/L	--	73	--	--
Chlordane	µg/L	--	16.4	--	--
DDT[3]	µg/L	--	0.0096	--	--
3,3'-dichlorobenzidine	µg/L	--	0.66	--	--
Dieldrin	µg/L	--	0.15	--	--
1,2-diphenylhydrazine	µg/L	--	0.0007	--	--
Heptachlor	µg/L	--	0.0041	--	--
Heptachlor Epoxide	µg/L	--	0.00162	--	--
Hexachlorobenzene	µg/L	--	0.017	--	--
N-nitrosodi-N-propylamine	µg/L	--	30.8	--	--
PAHs[4]	µg/L	--	0.71	--	--
PCBs[5]	µg/L	--	0.000259	--	--
TCDD Equivalents[7]	µg/L	--	0.00000032	--	--
Toxaphene	µg/L	--	0.017	--	--
2,4,6-trichlorophenol	µg/L	--	23	--	--
Total coliform	MPN/ 100 ml	--	1,000[6]	--	10,000
Fecal coliform	MPN/ 100 ml	--	200[6]	--	400
Enterococcus	MPN/ 100 ml	--	35[6]	--	104

[1] Chlorinated phenolic compounds represent the sum of 2-chlorophenol; 2,4-dichlorophenol; 2,4,6-trichlorophenol; 4-chloro-3-methylphenol; and pentachlorophenol.
[2] HCH means the sum of the alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.
[3] DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, and 2,4'-DDD.

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[4] PAHs shall mean the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo(k)fluoranthene; 1,12-benzoperylene; benzo(a)pyrene; chrysene; dibenzo(a,h)anthracene; fluorine; indeno(1,2,3-cd)pyrene; phenanthrene; and pyrene.

[5] PCBs shall mean the 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.

[6] Limitation is a 30-day geometric mean based on 5 samples in a 30-day period.

[7] TCDD Equivalents shall mean the 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. USEPA method 1613 may be used to analyze dioxin and furan congeners.

Dioxin-TEQ (TCDD Equivalents) = Σ (C_x x TEF_x)

Where:

C_x = concentration of dioxin or furan congener x

TEF_x = TEF for congener x

Toxicity Equivalency Factors

Isomer Group	Toxicity Equivalency Factor (TEF)
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

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D. Final Effluent Limitation Considerations

1. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of those discussed below.

The technology-based effluent limitations for biochemical oxygen demand (BOD_5), total suspended solids (TSS), chemical oxygen demand (COD), oil and grease, phenolic compounds, ammonia, total chromium, and hexavalent chromium are slightly less stringent than those in Order No. R4-2013-0025. Section 402(o)(B) states that effluent limitations may be less stringent in instances when information is available which was not available at the time of the prior permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance. The technology-based effluent limitations were calculated using the Refinery's production rates. Current information from Chevron indicated a slightly higher production rate than was reported during the issuance of Order No. R4-2013-0025. This resulted in slightly higher mass-based limitations. As such, the technology-based effluent limitations for these constituents are consistent with anti-backsliding requirements. Furthermore, the concentration-based effluent limitations for these pollutants established in Order No. R4-2013-0025 are included in this Order.

2. Antidegradation Policies

The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal

antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

This Order does not provide for an increase in the permitted design flow or allow for a reduction in the level of treatment. The final limitations in this Order meet the requirements of the Ocean Plan at Outfall 001. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. Hence, the permitted discharge is consistent with the antidegradation provision of 40 C.F.R.section 131.12 and State Water Board Resolution No. 68-16.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. Technology-based effluent limitations for biochemical oxygen demand (BOD_5), total suspended solids (TSS), chemical oxygen demand (COD), oil and grease, phenolic compounds, ammonia, sulfide, total chromium, hexavalent chromium, and pH are included at Discharge Point 001. Restrictions on these parameters are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

This Order includes water quality-based effluent limitations (WQBELs) at Discharge Point 001. WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The procedures for calculating the individual water quality-based effluent limitations at Discharge Point 001 are based on the Ocean Plan, recently amended, and effective January 28, 2016. All beneficial uses and water quality objectives contained in the Ocean Plan were approved under state law and submitted to and approved by USEPA and are applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

8. Performance Goals

Order No. R4-2013-0025 included performance goals for new effluent limitations included in that permit. The performance goals were not considered as limitations or standards for the regulation of the Facility, but rather as a trigger to investigate decreased performance of the current treatment system.

Monitoring results for the period of August 2012 through March 2017 for Discharge Point 001 indicate that all results for pollutants with performance goals were either non-detect or well below the performance goals with one exception. The exception was one value for TCDD equivalents that was identified as an effluent limitation violation. This Order includes an effluent limitation for TCDD equivalents. The performance goals for the other pollutants are not continued in this Order.

E. Mass-based Effluent Limitations

Mass-based effluent limitations are established using the following formula:

Mass (lbs/day) = flow rate (MGD) x 0.00834 x effluent limitation (µg/L)

where: Mass = mass limitation for a pollutant (lbs/day)

Effluent limitation = concentration limit for a pollutant (µg/L)

Flow rate = discharge flow rate (MGD)

The flow rate is defined as the permitted flow rate from Discharge Point 001 is as follows:

Dry weather = 8.8 MGD

Wet weather = 27 MGD

F. Summary of Final Effluent Limitations

Table F-17. Summary of Final Effluent Limitations for Discharge Point 001

Parameter	Units	Effluent Limitations				Rationale[5]
		6-Month Median[1,2]	Average Monthly[2]	Daily Maximum[3]	Inst. Maximum[4]	
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	--	36	66	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	2,673	4,812	--	ELG
Wet Weather[7]	lbs/day[9]	--	6,249	11,313	--	ELG
Total Suspended Solids (TSS)	mg/L	--	29	45	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	2,139	3,354	--	ELG
Wet Weather[7]	lbs/day[9]	--	5,064	7,905	--	ELG
Chemical Oxygen Demand (COD)	mg/L	--	254	490	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	18,666	35,971	--	ELG
Wet Weather[7]	lbs/day[9]	--	43,045	84,729	--	ELG
Oil and Grease	mg/L	--	11	20	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	778	1,458	--	ELG
Wet Weather[7]	lbs/day[9]	--	1,867	3,571	--	ELG
Phenolic Compounds[10]	mg/L	--	0.19	0.49	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	15.8	65.1	--	ELG
Wet Weather[7]	lbs/day[9]	--	38.6	112.2	--	ELG
Ammonia (as N)	mg/L	--	20	44	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	1,458	3,208	--	ELG
Wet Weather[7]	lbs/day[9]	--	1,458	3,208	--	ELG
Sulfide	mg/L	--	0.19	0.49	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	14	32	--	ELG
Wet Weather[7]	lbs/day[9]	--	14	32	--	ELG
Total Chromium	mg/L	--	0.23	0.65	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	18.4	53.1	--	ELG
Wet Weather[7]	lbs/day[9]	--	47.7	134.1	--	ELG

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Parameter	Units	Effluent Limitations				Rationale[5]
		6-Month Median[1,2]	Average Monthly[2]	Daily Maximum[3]	Inst. Maximum[4]	
Hexavalent Chromium	mg/L	--	0.02	0.04	--	OP, PO
Dry Weather[6]	lbs/day[8]	--	1.4	3.4	--	ELG
Wet Weather[7]	lbs/day[9]	--	5.1	11.9	--	ELG
pH	s.u.	--	--	--	6.0-9.0[11]	ELG
Temperature	°F	--	--	--	104	PO
Acute Toxicity	TU_a	--	--	--	2.7	OP, PO
Chronic Toxicity	Pass or Fail, % Effect	--	--	Pass or %Effect<50	--	OP, BPJ, TST
Phenolics, chlorinated[14]	µg/L	81	--	324	810	OP, PO
Dry Weather[6]	lbs/day[12]	5.9	--	23.8	--	OP, PO
Wet Weather[7]	lbs/day[13]	18.2	--	72.9	--	OP, PO
Endosulfan	µg/L	0.729	--	1.458	2.187	OP, PO
Dry Weather[6]	lbs/day[12]	0.05	--	0.1	--	OP, PO
Wet Weather[7]	lbs/day[13]	0.16	--	0.33	--	OP, PO
Endrin	µg/L	0.162	--	0.324	0.486	OP, PO
Dry Weather[6]	lbs/day[12]	0.012	--	0.02	--	OP, PO
Wet Weather[7]	lbs/day[13]	0.04	--	0.07	--	OP, PO
HCH[15]	µg/L	0.320	--	0.640	0.972	OP, PO
Dry Weather[6]	lbs/day[12]	0.02	--	0.05	--	OP, PO
Wet Weather[7]	lbs/day[13]	0.07	--	0.14	--	OP, PO
Thallium	µg/L	--	162	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	11.9	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	36.5	--	--	OP, PO
Tributyltin	µg/L	--	0.11	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.01	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.02	--	--	OP, PO
Acrylonitrile	µg/L	--	8.1	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.6	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	1.8	--	--	OP, PO
Aldrin	µg/L	--	0.00176	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.00013	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.0004	--	--	OP, PO
Benzidine	µg/L	--	0.0056	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.0004	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.0013	--	--	OP, PO
Beryllium	µg/L	--	2.7	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.2	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.6	--	--	OP, PO
Bis(2-chloroethyl) ether	µg/L	--	3.6	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.26	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.81	--	--	OP, PO

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Parameter	Units	Effluent Limitations				Rationale[5]
		6-Month Median[1,2]	Average Monthly[2]	Daily Maximum[3]	Inst. Maximum[4]	
Carbon tetrachloride	µg/L	--	73	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	5.4	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	16.4	--	--	OP, PO
Chlordane	µg/L	--	0.00186	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.00014	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.0004	--	--	OP, PO
DDT[16]	µg/L	--	0.0096	--	--	TMDL
Dry Weather[6]	lbs/day[12]	--	0.0007	--	--	OP, TMDL
Wet Weather[7]	lbs/day[13]	--	0.0022	--	--	OP, TMDL
Yearly WLA[19]	TMDL establishes a yearly WLA of 358 g/year for DDT at the Facility					TMDL
3,3'-dichlorobenzidine	µg/L	--	0.66	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.05	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.15	--	--	OP, PO
Dieldrin	µg/L	--	0.0032	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.0002	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.0007	--	--	OP, PO
1,2-diphenylhydrazine	µg/L	--	13	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.95	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	2.9	--	--	OP, PO
Heptachlor	µg/L	--	0.0041	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.0003	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.0009	--	--	OP, PO
Heptachlor Epoxide	µg/L	--	0.00162	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.0001	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.0004	--	--	OP, PO
Hexachlorobenzene	µg/L	--	0.017	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.0012	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.004	--	--	OP, PO
N-nitrosodi-N-propylamine	µg/L	--	30.8	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	2.26	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	6.93	--	--	OP, PO
PAHs[17]	µg/L	--	0.71	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.052	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.160	--	--	OP, PO
PCBs[18]	µg/L	--	0.000259	--	--	TMDL
Dry Weather[6]	lbs/day[12]	--	0.00002	--	--	OP, TMDL
Wet Weather[7]	lbs/day[13]	--	0.00006	--	--	OP, TMDL
Yearly WLA[19]	TMDL establishes a yearly WLA of 10 g/year for PCBs at the Facility					TMDL
TCDD Equivalents[21]	µg/L	--	0.00000032	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.00000002	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.00000007	--	--	OP, PO

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Parameter	Units	Effluent Limitations				Rationale[5]
		6-Month Median[1,2]	Average Monthly[2]	Daily Maximum[3]	Inst. Maximum[4]	
Toxaphene	µg/L	--	0.017	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	0.0012	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	0.004	--	--	OP, PO
2,4,6-trichlorophenol	µg/L	--	23	--	--	OP, PO
Dry Weather[6]	lbs/day[12]	--	1.69	--	--	OP, PO
Wet Weather[7]	lbs/day[13]	--	5.18	--	--	OP, PO
Total coliform	MPN/ 100 ml	--	1,000[20]	--	10,000	OP, PO
Fecal coliform	MPN/ 100 ml	--	200[20]	--	400	OP, PO
Enterococcus	MPN/ 100 ml	--	35[20]	--	104	OP, PO

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1 The 6-month median shall apply to all samples taken in the current compliance month and all samples taken in the previous 5 monthly monitoring periods.

2 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.

3 The daily maximum effluent concentration limitation shall apply to flow-weighted 24-hour composite samples.

4 The instantaneous maximum shall apply to grab sample determinations.

5 ELG = Effluent Limitation Guidelines and Standards (40 C.F.R. section 419 Subpart B); OP = Ocean Plan (effective January 28, 2016); PO = Prior Order No. R4-2013-0025; TMDL = Santa Monica Bay TMDL for DDT and PCBs; TST = EPA Test of Significant Toxicity Approach

6 Dry weather limitations apply when wet weather conditions are not met.

7 Wet weather limitations apply during a rainfall event of 0.1-inch or more in a 24-hour period and for the 72 hours following the end of the associated rainfall event.

8 Dry weather specified mass limit based on refinery throughput, size factor, process factor and effluent limit specified in 40 C.F.R. Part 419 Subpart B. They are calculated based on a maximum expected discharge flow rate during dry weather of 8.8 MGD. See Section IV.B of the Fact Sheet for details.

9 Wet weather specified mass limit based on the sum of the dry weather mass limit and the mass of the pollutant contained in contaminated runoff. They are calculated based on a contaminated runoff flow of 16.252 MGD. See Section IV.B of the Fact Sheet for details.

10 The pH of the effluent shall remain within the range of 6.0 to 9.0 pH units except during excursions from the range as permitted by 40 C.F.R. 401.17. The total time during which the pH values are outside the required range of pH values (1) shall not exceed 7 hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

11 Non-chlorinated phenolic compounds represent the sum of 2-nitrophenol; phenol; 2,4-dimethylphenol; 2,4-dinitrophenol; 2-methyl-4,6-dinitrophenol; and 4-nitrophenol.

12 These mass-based effluent limitations for dry weather discharges are calculated using the following formula:
Mass-based effluent limitation = C * Q * 0.00834
Where: C = concentration-based effluent limitation (µg/L)
Q = 8.8 MGD (the maximum expected flow rate during dry weather)

13 These mass-based effluent limitations for wet weather discharges are calculated using the following formula:
Mass-based effluent limitation = C * Q * 0.00834
Where: C = concentration-based effluent limitation (µg/L)
Q = 27 MGD (the maximum expected flow rate during wet weather)

14 Chlorinated phenolic compounds represent the sum of 2-chlorophenol; 2,4-dichlorophenol; 2,4,6-trichlorophenol; 4-chloro-3-methylphenol; and pentachlorophenol.

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

16 DDT shall mean the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, and 2,4'-DDD.

17 PAHs shall mean the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo(k)fluoranthene; 1,12-benzoperylene; benzo(a)pyrene; chrysene; dibenzo(a,h)anthracene; fluorine; indeno(1,2,3-cd)pyrene; phenanthrene; and pyrene.

[18] PCBs shall mean the 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.

[19] The Yearly WLA assumes the maximum daily flow of 27 MGD for the entire year. Compliance with the Yearly WLAs is therefore demonstrated through compliance with the concentration-based WLAs and the maximum daily flow.

[20] Limitation is a 30-day geometric mean based on 5 samples in a 30-day period.

[21] TCDD Equivalents shall mean the 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. USEPA method 1613 may be used to analyze dioxin and furan congeners.

Dioxin-TEQ (TCDD Equivalents) = Σ (C_x x TEF_x)

Where:

C_x = concentration of dioxin or furan congener x

TEF_x = TEF for congener x

Toxicity Equivalency Factors

Isomer Group	Toxicity Equivalency Factor (TEF)
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

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G. Interim Effluent Limitations—Not Applicable

H. Land Discharge Specifications—Not Applicable

I. Recycling Specifications—Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Section II of the Ocean Plan contains numeric and narrative water quality objectives applicable to the coastal waters of California. Water quality objectives include an objective to maintain the high quality waters pursuant to federal regulations (40 C.F.R. § 131.12) and State Water Board Resolution No. 68-16. Receiving water limitations in this Order are included to ensure protection of beneficial uses of the receiving waters and are based on the water quality objectives contained in the Basin Plan and Ocean Plan.

B. Groundwater—Not Applicable

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D to the order.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40

C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

These provisions are based on 40 C.F.R. section 123 and the prior Order. The Regional Water Board may reopen the permit to modify permit conditions and requirements. Causes for modifications include the promulgation of new federal regulations, modification in toxicity requirements, or adoption of new regulations by the State Water Board or Regional Water Board, including revisions to the Basin Plan and/or Ocean Plan.

2. Special Studies and Additional Monitoring Requirements

a. Initial Investigation Toxicity Reduction Evaluation (TRE) Workplan. This provision is based on section III.C.10 of the Ocean Plan.

b. Mixing Zone and Dilution Credit Study Work Plan. Within 90 days after the effective date of this Order, the Discharger is required to develop and submit to the Regional Water Board for review a work plan detailing how the Discharger will conduct a Mixing Zone and Dilution Credit Study. The study shall identify the boundary of the zone of initial dilution (ZID) based on modelling results, and include monitoring upstream of the discharge point, directly above the discharge location, at the boundary of the ZID, and outside the ZID for the list of constituents included in Table 1 of the Ocean Plan, to confirm the assumptions made by the model.

3. Best Management Practices and Pollution Prevention

a. Storm Water Pollution Prevention, Best Management Practices, and Spill Contingency Plans

i. **Storm Water Pollution Prevention Plan (SWPPP).** This Order requires the Discharger to develop and update, as necessary, and continue to implement a SWPPP. The SWPPP will outline site-specific management processes for minimizing storm water runoff contamination and for preventing contaminated storm water runoff from being discharged directly into the receiving water. At a minimum, the management practices should ensure that raw materials and chemicals do not come into contact with storm water. SWPPP requirements are included as Attachment G, based on 40 C.F.R. section 122.44(k).

ii. **Best Management Practices Plan (BMPP).** This Order requires the Discharger to develop and implement a BMPP. The BMPP may be included as a component of the SWPPP. The purpose of the BMPP is to establish site-specific procedures that ensure proper operation and maintenance of equipment, to ensure that unauthorized non-storm water discharges (i.e., spills) do not occur at the Facility. The BMPP shall incorporate the requirements contained in Appendix G. Appendix G requires a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

iii. **Spill Contingency Plan (SCP).** This Order requires the Discharger to develop and implement a SCP to control the discharge of pollutants. The SCP shall include a technical report on the preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events at the site. This provision is included in this Order to minimize and control

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the amount of pollutants discharged in case of a spill. The SCP shall be site specific and shall cover all areas of the Facility.

4. Construction, Operation, and Maintenance Specifications

This provision is based on the requirements of 40 C.F.R. section 122.41(e).

5. Other Special Provisions—Not Applicable

6. Compliance Schedules—Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(*l*), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring—Not Applicable

B. Effluent Monitoring

Monitoring for those pollutants expected to be present in discharges from Discharge Point No. 001 (Monitoring Locations EFF-001) will be required as shown on the proposed MRP (Attachment E). All monitoring requirements are at least as frequent as those in Order No. R4-2013-0025.

To determine compliance with effluent limitations, the proposed monitoring plan includes monitoring requirements for the pollutants of concern on a monthly frequency. All those pollutants that demonstrated reasonable potential have been assigned monthly monitoring requirements. For TCDD equivalents the monitoring frequency increased from once per semi-annual period to once per month.

Appendix III of the 2015 Ocean Plan includes a model monitoring framework for point sources, storm water point sources, and non-point sources. Based on Appendix III, core monitoring, described as “basic, site-specific monitoring necessary to measure compliance with individual effluent limits and/or impacts to receiving water quality, is required for Table 1 constituents. Section 5.1 of Appendix III in the 2015 Ocean Plan specifies a minimum semiannual monitoring frequency for Table 1 pollutants in discharges greater than 10 MGD. The monitoring frequency for Table 1 pollutants at Discharge Point 001 in Order No. R4-2013-0025 is once per year. Based on the model monitoring framework of the 2015 Ocean Plan, this Order increases the frequency of monitoring for Table 1 pollutants to semiannually (2/year). Data generated from this monitoring is necessary for evaluating reasonable potential for the discharge to cause or contribute to an exceedance of applicable water quality objectives contained in the Ocean Plan during future permit reissuances.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth. Section III.C.4.c.(4) of the Ocean Plan requires dischargers to conduct chronic toxicity testing if the minimum initial dilution of the effluent is below 100:1. This Order includes monthly monitoring requirements for chronic toxicity

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in the MRP (Attachment E) as specified in the Ocean Plan, and to determine reasonable potential of the discharge to exceed Table 1. Since the discharge also demonstrated reasonable potential for acute toxicity, this Order includes monthly monitoring for acute toxicity as well.

D. Receiving Water Monitoring

1. Surface Water

Monitoring requirements are included in the MRP (Attachment E) to determine compliance with the receiving water limitations established in Limitations and Discharge Requirements, Receiving Water Limitations, Section V.A. Monitoring for temperature, pH, dissolved oxygen, conductivity, oil and grease, benzene, toluene, xylene, ethylbenzene, arsenic, cadmium, copper, chromium, lead, mercury, nickel, silver, zinc, selenium, PAHs, total coliform, fecal coliform, enterococcus and priority pollutants in the receiving water is included in the MRP.

2. Groundwater—Not Applicable

E. Other Monitoring Requirements

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. 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. Chevron shall also participate in the nutrient related component of the BIGHT program.

Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program – Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires major and selected minor dischargers under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S. EPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from its own laboratories or its contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Discharger shall ensure that the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.

F. Regional Monitoring

Southern California Bight Regional Monitoring Survey – Chevron is one of a number of NPDES dischargers into coastal ocean waters that will be required to continue participation in the Southern California Bight Regional Monitoring Survey. Chevron, with other coastal 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 Refinery will be supplied through a combination of modifications to the Refinery's Monitoring and Reporting Program, including redirection of existing effort and new monitoring efforts relevant to the Refinery discharge. The

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Executive Officer of the Regional Water Board must be notified of the redirection of existing monitoring requirements and/or the imposition of additional monitoring efforts.

VIII. PUBLIC PARTICIPATION

The Regional Water Board has considered the issuance of WDRs that will serve as an NPDES permit for the Chevron El Segundo Refinery. As a step in the WDR adoption process, Regional Water Board staff has developed tentative WDRs and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through email and public notice.

The public had access to the agenda and any changes in dates and locations through the Regional Water Board's website at http://www.waterboards.ca.gov/losangeles.

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDRs as provided through the notification process electronically at losangeles@waterboards.ca.gov with a copy to thomas.siebels@waterboards.ca.gov.

To be fully responded to by staff and considered by the Regional Water Board, the written comments were due at the Regional Water Board office by 5:00 p.m. on September 18, 2017.

C. Public Hearing

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

Date:	October 5, 2017
Time:	9:00 am
Location:	The Metropolitan Water District of Southern California Board Room 700 North Alameda Street Los Angeles, CA 90012

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony, pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100
Or by email at waterqualitypetitions@waterboards.ca.gov

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For instructions on how to file a petition for review, see:
<http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml>

E. Information and Copying

The Report of Waste Discharge, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 213-576-6600.

The tentative WDRs, comments received and response to comments are also available on the Regional Water Board's website at:

http://www.waterboards.ca.gov/losangeles/board_decisions/tentative_orders/index.shtml

F. 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 Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Thomas Siebels at (213) 576-6756.

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ATTACHMENT G – STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

I. IMPLEMENTATION SCHEDULE

A storm water pollution prevention plan (SWPPP) shall be developed and submitted to the Regional Water Board within 90 days following the adoption of this Order. The SWPPP shall be implemented for each facility covered by this Permit within 10 days of approval from the Regional Water Board, or no later than 90 days from the date of the submittal of the SWPPP to the Regional Water Board (whichever comes first).

II. OBJECTIVES

The SWPPP has two major objectives: (a) to identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the facility; and (b) to identify and implement site- specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges and authorized non-storm water discharges. BMPs may include a variety of pollution prevention measures or other low-cost and pollution control measures. They are generally categorized as non-structural BMPs (activity schedules, prohibitions of practices, maintenance procedures, and other low-cost measures) and as structural BMPs (treatment measures, run-off controls, over-head coverage.) To achieve these objectives, facility operators should consider the five phase process for SWPPP development and implementation as shown in Table A.

The SWPPP requirements are designed to be sufficiently flexible to meet the needs of various facilities. SWPPP requirements that are not applicable to a facility should not be included in the SWPPP.

A facility's SWPPP is a written document that shall contain a compliance activity schedule, a description of industrial activities and pollutant sources, descriptions of BMPs, drawings, maps, and relevant copies or references of parts of other plans. The SWPPP shall be revised whenever appropriate and shall be readily available for review by facility employees or Regional Water Board inspectors.

III. PLANNING AND ORGANIZATION

A. Pollution Prevention Team

The SWPPP shall identify a specific individual or individuals and their positions within the facility organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the facility manager in SWPPP implementation and revision, and conducting all monitoring program activities required in Attachment E of this Permit. The SWPPP shall clearly identify the Permit related responsibilities, duties, and activities of each team member. For small facilities, storm water pollution prevention teams may consist of one individual where appropriate.

B. Review Other Requirements and Existing Facility Plans

The SWPPP may incorporate or reference the appropriate elements of other regulatory requirements. Facility operators should review all local, state, and federal requirements that impact, complement, or are consistent with the requirements of this permit. Facility operators should identify any existing facility plans that contain storm water pollutant control measures or relate to the requirements of this Permit. As examples, facility operators whose facilities are subject to federal Spill Prevention Control and Countermeasures' requirements should already

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have instituted a plan to control spills of certain hazardous materials. Similarly, facility operators whose facilities are subject to air quality related permits and regulations may already have evaluated industrial activities that generate dust or particulates.

IV. SITE MAP

The SWPPP shall include a site map. The site map shall be provided on an 8-½ x 11 inch or larger sheet and include notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, facility operators may provide the required information on multiple site maps.

TABLE A
FIVE PHASES FOR DEVELOPING AND IMPLEMENTING INDUSTRIAL STORM WATER POLLUTION PREVENTION PLANS

PLANNING AND ORGANIZATION
Form Pollution Prevention Team Review other plans

ASSESSMENT PHASE
Develop a site map Identify potential pollutant sources Inventory of materials and chemicals List significant spills and leaks Identify non-storm water discharges Assess pollutant risks

BEST MANAGEMENT PRACTICES IDENTIFICATION PHASE
Non-structural BMPs Structural BMPs Select activity and site-specific BMPs

IMPLEMENTATION PHASE
Train employees Implement BMPs Conduct recordkeeping and reporting

EVALUATION / MONITORING
Conduct annual site evaluation Review monitoring information Evaluate BMPs Review and revise SWPPP

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The following information shall be included on the site map:

A. The facility boundaries; the outline of all storm water drainage areas within the facility boundaries; portions of the drainage area impacted by run-on from surrounding areas; and direction of flow of each drainage area, on-site surface water bodies, and areas of soil erosion. The map shall also identify nearby water bodies (such as rivers, lakes, and ponds) and municipal storm drain inlets where the facility's storm water discharges and authorized non-storm water discharges may be received.

B. The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, authorized non-storm water discharges, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.

C. An outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures.

D. Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified in section VI.A.4 below have occurred.

E. Areas of industrial activity. This shall include the locations of all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and rinsing areas, and other areas of industrial activity which are potential pollutant sources.

V. LIST OF SIGNIFICANT MATERIALS

The SWPPP shall include a list of significant materials[1] handled and stored at the site. For each material on the list, describe the locations where the material is being stored, received, shipped, and handled, as well as the typical quantities and frequency. Materials shall include raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials.

VI. DESCRIPTION OF POTENTIAL POLLUTANT SOURCES

A. The SWPPP shall include a narrative description of the facility's industrial activities, as identified in section IV.E. above, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to a facility's industrial activities shall be considered:

1. Industrial Processes. Describe each industrial process, the type, characteristics, and quantity of significant materials used in or resulting from the process, and a description of the manufacturing, cleaning, rinsing, recycling, disposal, or other activities related to the process. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

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[1] "Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to section 313 of Title III of Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

2. **Material Handling and Storage Areas.** Describe each handling and storage area, type, characteristics, and quantity of significant materials handled or stored, description of the shipping, receiving, and loading procedures, and the spill or leak prevention and response procedures. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.

3. **Dust and Particulate Generating Activities.** Describe all industrial activities that generate dust or particulates that may be deposited within the facility's boundaries and identify their discharge locations; the characteristics of dust and particulate pollutants; the approximate quantity of dust and particulate pollutants that may be deposited within the facility boundaries; and a description of the primary areas of the facility where dust and particulate pollutants would settle.

4. **Significant Spills and Leaks.** Describe materials that have spilled or leaked in significant quantities in storm water discharges or authorized non-storm water discharges since April 17, 1994. Include toxic chemicals (listed in 40 Code of Federal Regulations (C.F.R.), part 302) that have been discharged to storm water as reported on U.S. Environmental Protection Agency (USEPA) Form R, and oil and hazardous substances in excess of reportable quantities (see 40 C.F.R., parts 110, 117, and 302).

   The description shall include the type, characteristics, and approximate quantity of the material spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or non-storm water discharges, and the preventative measures taken to ensure spill or leaks do not reoccur. Such list shall be updated as appropriate during the term of this Permit.

5. **Non-Storm Water Discharges.** Facility operators shall investigate the facility to identify all non-storm water discharges and their sources. As part of this investigation, all drains (inlets and outlets) shall be evaluated to identify whether they connect to the storm drain system.

   All non-storm water discharges shall be described. This shall include the source, quantity, frequency, and characteristics of the authorized non-storm water discharges and associated drainage area.

   Non-storm water discharges that are not authorized by this Permit, other waste discharge requirements, or other NPDES permits are prohibited. The SWPPP must include BMPs to prevent or reduce contact of authorized non-storm water discharges with significant materials (as defined in Footnote 1 of section V above) or equipment.

6. **Soil Erosion.** Describe the facility locations where soil erosion may occur as a result of industrial activity, storm water discharges associated with industrial activity, or authorized non-storm water discharges.

7. **Trash.** Describe the facility locations where trash may be generated as a result of facility operations and on-site activities.

B. The SWPPP shall include a summary of all areas of industrial activities, potential pollutant sources, and potential pollutants. This information should be summarized similar to Table B. The last column of Table B, "Control Practices", should be completed in accordance with section VIII. below.

VII. ASSESSMENT OF POTENTIAL POLLUTANT SOURCES

A. The SWPPP shall include a narrative assessment of all industrial activities and potential pollutant sources as described in section VI above to determine:

1. Which areas of the facility are likely sources of pollutants in storm water discharges and authorized non-storm water discharges, and

2. Which pollutants are likely to be present in storm water discharges and authorized non-storm water discharges. Facility operators shall consider and evaluate various factors when performing this assessment such as current storm water BMPs; quantities of significant materials handled, produced, stored, or disposed of; likelihood of exposure to storm water or authorized non-storm water discharges; history of spill or leaks; and run-on from outside sources.

B. Facility operators shall summarize the areas of the facility that are likely sources of pollutants and the corresponding pollutants that are likely to be present in storm water discharges and authorized non-storm water discharges.

Facility operators are required to develop and implement additional BMPs as appropriate and necessary to prevent or reduce pollutants associated with each pollutant source. The BMPs will be narratively described in section VIII below.

VIII. STORM WATER BEST MANAGEMENT PRACTICES

The SWPPP shall include a narrative description of the storm water BMPs to be implemented at the facility for each potential pollutant and its source identified in the site assessment phase (sections VI. and VII. above). The BMPs shall be developed and implemented to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Each pollutant and its source may require one or more BMPs. Some BMPs may be implemented for multiple pollutants and their sources, while other BMPs will be implemented for a very specific pollutant and its source.

TABLE B

EXAMPLE
ASSESSMENT OF POTENTIAL POLLUTION SOURCES AND CORRESPONDING BEST MANAGEMENT PRACTICES
SUMMARY

Area	Activity	Pollutant Source	Pollutant	Best Management Practices
Vehicle & Equipment Fueling	Fueling	Spills and leaks during delivery.	fuel oil	Use spill and overflow protection.
		Spills caused by topping off fuel tanks.		Minimize run-on of storm water into the fueling area.
		Hosing or washing down fuel oil fuel area.		Cover fueling area.
		Leaking storage tanks.		Use dry cleanup methods rather than hosing down area. Implement proper spill prevention control program.
				Implement adequate preventative maintenance program to preventive tank and line leaks.
		Rainfall running off fuel oil, and rainfall running onto and off fueling area		Inspect fueling areas regularly to detect problems before they occur.
				Train employees on proper fueling, cleanup, and spill response techniques.

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The description of the BMPs shall identify the BMPs as (1) existing BMPs, (2) existing BMPs to be revised and implemented, or (3) new BMPs to be implemented. The description shall also include a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. The SWPPP shall provide a summary of all BMPs implemented for each pollutant source. This information should be summarized similar to Table B.

Facility operators shall consider the following BMPs for implementation at the facility:

A. Non-Structural BMPs

Non-structural BMPs generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with industrial activity from contacting with storm water discharges and authorized non-storm water discharges. They are considered low technology, cost-effective measures. Facility operators should consider all possible non-structural BMPs options before considering additional structural BMPs (see section VIII.B. below). Below is a list of non-structural BMPs that should be considered:

1. **Good Housekeeping.** Good housekeeping generally consists of practical procedures to maintain a clean and orderly facility.

2. **Preventive Maintenance.** Preventive maintenance includes the regular inspection and maintenance of structural storm water controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems.

3. **Spill Response.** This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.

4. **Material Handling and Storage.** This includes all procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to storm water and authorized non-storm water discharges.

5. **Employee Training.** This includes training of personnel who are responsible for (1) implementing activities identified in the SWPPP, (2) conducting inspections, sampling, and visual observations, and (3) managing storm water. Training should address topics such as spill response, good housekeeping, and material handling procedures, and actions necessary to implement all BMPs identified in the SWPPP. The SWPPP shall identify periodic dates for such training. Records shall be maintained of all training sessions held.

6. **Waste Handling/Recycling.** This includes the procedures or processes to handle, store, or dispose of waste materials or recyclable materials.

7. **Recordkeeping and Internal Reporting.** This includes the procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary, to the appropriate facility personnel.

8. **Erosion Control and Site Stabilization.** This includes a description of all sediment and erosion control activities. This may include the planting and maintenance of vegetation, diversion of run-on and runoff, placement of sandbags, silt screens, or other sediment control devices, etc.

9. **Inspections.** This includes, in addition to the preventative maintenance inspections identified above, an inspection schedule of all potential pollutant sources. Tracking and follow-up procedures shall be described to ensure adequate corrective actions are taken and SWPPPs are made.

10. **Quality Assurance.** This includes the procedures to ensure that all elements of the SWPPP and Monitoring Program are adequately conducted.

B. Structural BMPs.

Where non-structural BMPs as identified in section VIII.A. above are not effective, structural BMPs shall be considered. Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Below is a list of structural BMPs that should be considered:

1. **Overhead Coverage.** This includes structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with storm water and authorized non-storm water discharges.
2. **Retention Ponds.** This includes basins, ponds, surface impoundments, bermed areas, etc. that do not allow storm water to discharge from the facility.
3. **Control Devices.** This includes berms or other devices that channel or route run-on and runoff away from pollutant sources.
4. **Secondary Containment Structures.** This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills.
5. **Treatment.** This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc. that reduce the pollutants in storm water discharges and authorized non-storm water discharges.

C. ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION

The facility operator shall conduct one comprehensive site compliance evaluation (evaluation) in each reporting period (July 1-June 30). Evaluations shall be conducted within 8-16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 10 days of approval by the Executive Officer or no later than 90 days after submission to the Regional Water Board, whichever comes first. Evaluations shall include the following:

A. A review of all visual observation records, inspection records, and sampling and analysis results.

B. A visual inspection of all potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system.

C. A review and evaluation of all BMPs (both structural and non-structural) to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed. A visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, shall be included.

D. An evaluation report that includes, (i) identification of personnel performing the evaluation, (ii) the date(s) of the evaluation, (iii) necessary SWPPP revisions, (iv) schedule, as required in section X.E., for implementing SWPPP revisions, (v) any incidents of non-compliance and the corrective actions taken, and (vi) a certification that the facility operator is in compliance with this Permit. If the above certification cannot be provided, explain in the evaluation report why the facility operator is not in compliance with this Permit. The evaluation report shall be submitted as part of the annual report, retained for at least five years, and signed and certified in accordance with Standard Provisions V.D.5 of Attachment D.

IX. SWPPP GENERAL REQUIREMENTS

A. The SWPPP shall be retained on site and made available upon request of a representative of the Regional Water Board and/or local storm water management agency (local agency) which receives the storm water discharges.

B. The Regional Water Board and/or local agency may notify the facility operator when the SWPPP does not meet one or more of the minimum requirements of this section. As requested by the Regional Water Board and/or local agency, the facility operator shall submit an SWPPP revision and implementation schedule that meets the minimum requirements of this section to the Regional Water Board and/or local agency that requested the SWPPP revisions. Within 14 days after implementing the required SWPPP revisions, the facility operator shall provide written certification to the Regional Water Board and/or local agency that the revisions have been implemented.

C. The SWPPP shall be revised, as appropriate, and implemented prior to changes in industrial activities which (i) may significantly increase the quantities of pollutants in storm water discharge, (ii) cause a new area of industrial activity at the facility to be exposed to storm water, or (iii) begin an industrial activity which would introduce a new pollutant source at the facility.

D. The SWPPP shall be revised and implemented in a timely manner, but in no case more than 90 days after a facility operator determines that the SWPPP is in violation of any requirement(s) of this Permit.

E. When any part of the SWPPP is infeasible to implement due to proposed significant structural changes, the facility operator shall submit a report to the Regional Water Board prior to the applicable deadline that (i) describes the portion of the SWPPP that is infeasible to implement by the deadline, (ii) provides justification for a time extension, (iii) provides a schedule for completing and implementing that portion of the SWPPP, and (iv) describes the BMPs that will be implemented in the interim period to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Such reports are subject to Regional Water Board approval and/or modifications. Facility operators shall provide written notification to the Regional Water Board within 14 days after the SWPPP revisions are implemented.

F. The SWPPP shall be provided, upon request, to the Regional Water Board. The SWPPP is considered a report that shall be available to the public by the Regional Water Board under section 308(b) of the Clean Water Act.

ATTACHMENT H – STATE WATER BOARD MINIMUM LEVELS

The Minimum Levels identified in this attachment represent the lowest concentration of a pollutant that can be quantitatively measured in a sample given the current state of performance in analytical chemistry methods in California. These Minimum Levels were derived from data provided by state-certified analytical laboratories in 1997 and 1998 for pollutants regulated by the California Ocean Plan and shall be used until new values are adopted by the State Water Board. There are four major chemical groupings: volatile chemicals, semi-volatile chemicals, inorganics, pesticides & PCBs. "No Data" is indicated by "—".

TABLE II-1
MINIMUM LEVELS – VOLATILE CHEMICALS

Volatile Chemicals	CAS Number	Minimum* Level (µg/L)	
		GC Method[a]	GCMS[b]
Acrolein	107028	2.	5
Acrylonitrile	107131	2.	2
Benzene	71432	0.5	2
Bromoform	75252	0.5	2
Carbon Tetrachloride	56235	0.5	2
Chlorobenzene	108907	0.5	2
Chlorodibromomethane	124481	0.5	2
Chloroform	67663	0.5	2
1,2-Dichlorobenzene (volatile)	95501	0.5	2
1,3-Dichlorobenzene (volatile)	541731	0.5	2
1,4-Dichlorobenzene (volatile)	106467	0.5	2
Dichlorobromomethane	75274	0.5	2
1,1-Dichloroethane	75343	0.5	1
1,2-Dichloroethane	107062	0.5	2
1,1-Dichloroethylene	75354	0.5	2
Dichloromethane	75092	0.5	2
1,3-Dichloropropene (volatile)	542756	0.5	2
Ethyl benzene	100414	0.5	2
Methyl Bromide	74839	1.	2
Methyl Chloride	74873	0.5	2
1,1,2,2-Tetrachloroethane	79345	0.5	2
Tetrachloroethylene	127184	0.5	2
Toluene	108883	0.5	2
1,1,1-Trichloroethane	71556	0.5	2
1,1,2-Trichloroethane	79005	0.5	2
Trichloroethylene	79016	0.5	2
Vinyl Chloride	75014	0.5	2

Table II-1 Notes

a) GC Method = Gas Chromatography
b) GCMS Method = Gas Chromatography / Mass Spectrometry
* To determine the lowest standard concentration in an instrument calibration curve for these techniques, use the given ML (see Ocean Plan, Chapter III, "Use of Minimum Levels").

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TABLE II-2
MINIMUM LEVELS – SEMI VOLATILE CHEMICALS

Semi-Volatile Chemicals	CAS Number	Minimum* Level (µg/L)			
		GC Method[a]	GCMS Method[b]	HPLC Method[c]	COLOR Method[d]
Acenaphthylene	208968	--	10	0.2	--
Anthracene	120127	--	10	2	--
Benzidine	92875	--	5	--	--
Benzo(a)anthracene	56553	--	10	2	--
Benzo(a)pyrene	50328	--	10	2	--
Benzo(b)fluoranthene	205992	--	10	10	--
Benzo(g,h,i)perylene	191242	--	5	0.1	--
Benzo(k)fluoranthene	207089	--	10	2	--
Bis2-(1-Chloroethoxy) methane	111911	--	5	--	--
Bis(2-Chloroethyl)ether	111444	10	1	--	--
Bis(2-Chloroisopropyl)ether	39638329	10	2	--	--
Bis(2-Ethylhexyl) phthalate	117817	10	5	--	--
2-Chlorophenol	95578	2	5	--	--
Chrysene	218019	--	10	5	--
Di-n-butyl phthalate	84742	--	10	--	--
Dibenzo(a,h)-anthracene	53703	--	10	0.1	--
1,2-Dichlorobenzene (semivolatile)	95504	2	2	--	--
1,3-Dichlorobenzene (semivolatile)	541731	2	1	--	--
1,4-Dichlorobenzene (semivolatile)	106467	2	1	--	--
3,3-Dichlorobenzidine	91941	--	5	--	--
2,4-Dichlorophenol	120832	1	5	--	--
1,3-Dichloropropene	542756	--	5	--	--
Diethyl phthalate	84662	10	2	--	--
Dimethyl phthalate	131113	10	2	--	--
2,4-Dimethylphenol	105679	1	2	--	--
2,4-Dinitrophenol	51285	5	5	--	--
2,4-Dinitrotoluene	121142	10	5	--	--
1,2-Diphenylhydrazine	122667	--	1	--	--
Fluoranthene	206440	10	1	0.05	--
Fluorene	86737	--	10	0.1	--
Hexachlorobenzene	118741	5	1	--	--
Hexachlorobutadiene	87683	5	1	--	--
Hexachlorocyclopentadiene	77474	5	5	--	--
Hexachloroethane	67721	5	1	--	--
Indeno(1,2,3-cd)pyrene	193395	--	10	0.05	--
Isophorone	78591	10	1	--	--
2-methyl-4,6-dinitrophenol	534521	10	5	--	--
3-methyl-4-chlorophenol	59507	5	1	--	--
N-nitrosodi-n-propylamine	621647	10	5	--	--
N-nitrosodimethylamine	62759	10	5	--	--
N-nitrosodiphenylamine	86306	10	1	--	--
Nitrobenzene	98953	10	1	--	--

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Semi-Volatile Chemicals	CAS Number	Minimum* Level (µg/L)			
		GC Method[a]	GCMS Method[b]	HPLC Method[c]	COLOR Method[d]
2-Nitrophenol	88755	--	10	--	--
4-Nitrophenol	100027	5	10	--	--
Pentachlorophenol	87865	1	5	--	--
Phenanthrene	85018	--	5	0.05	--
Phenol	108952	1	1	--	50
Pyrene	129000	--	10	0.05	--
2,4,6-Trichlorophenol	88062	10	10	--	--

Table II-2 Notes

a) GC Method = Gas Chromatography
b) GCMS Method = Gas Chromatography / Mass Spectrometry
c) HPLC Method = High Pressure Liquid Chromatography
d) COLOR Method = Colorimetric
* To determine the lowest standard concentration in an instrument calibration curve for this technique, multiply the given ML by 1000 (see Ocean Plan, Chapter III, “Use of Minimum Levels”).

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TABLE II-3
MINIMUM* LEVELS – INORGANICS

Inorganic Substances	CAS Number	Minimum* Level (µg/L)								
		COLOR Method[a]	DCP Method[b]	FAA Method[c]	GFAA Method[d]	HYBRIDE Method[e]	ICP Method[f]	ICPMS Method[g]	SPGFAA Method[h]	CVAA Method[i]
Antimony	7440360	--	1000	10	5	0.5	50	0.5	5	--
Arsenic	7440382	20	1000	--	2	1	10	2	2	--
Beryllium	7440417	--	1000	20	0.5	--	2	0.5	1	--
Cadmium	7440439	--	1000	10	0.5	--	10	0.2	0.5	--
Chromium (total)	--	--	1000	50	2	--	10	0.5	1	--
Chromium (VI)	18540299	10	--	5	--	--	--	--	--	--
Copper	7440508	--	1000	20	5	--	10	0.5	2	--
Cyanide	57125	5	--	--	--	--	--	--	--	--
Lead	7439921	--	10000	20	5	--	5	0.5	2	--
Mercury	7439976	--	--	--	--	--	--	0.5	--	0.2
Nickel	7440020	--	1000	50	5	--	20	1	5	--
Selenium	7782492	--	1000	--	5	1	10	2	5	--
Silver	7440224	--	1000	10	1	--	10	0.2	2	--
Thallium	7440280	--	1000	10	2	--	10	1	5	--
Zinc	7440666	--	1000	20	--	--	20	1	10	--

Table II-3 Notes

a) COLOR Method = Colorimetric
b) DCP Method = Direct Current Plasma
c) FAA Method = Flame Atomic Absorption
d) GFAA Method = Graphite Furnace Atomic Absorption
e) HYDRIDE Method = Gaseous Hydride Atomic Absorption
f) ICP Method = Inductively Coupled Plasma
g) ICPMS Method = Inductively Coupled Plasma / Mass Spectrometry
h) SPGFAA Method = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
i) CVAA Method = Cold Vapor Atomic Absorption

* To determine the lowest standard concentration in an instrument calibration curve for these techniques, use the given ML (see Ocean Plan, Chapter III, "Use of Minimum* Levels").

TABLE II-4
MINIMUM* LEVELS – PESTICIDES AND PCBS*

Pesticides – PCBs	CAS Number	Minimum* Level (µg/L)
		GC Method[a]
Aldrin	309002	0.005
Chlordane	57749	0.1
4,4'-DDD	72548	0.05
4,4'-DDE	72559	0.05
4,4'-DDT	50293	0.01
Dieldrin	60571	0.01
a-Endosulfan	959988	0.02
b-Endosulfan	33213659	0.01
Endosulfan Sulfate	1031078	0.05
Endrin	72208	0.01
Heptachlor	76448	0.01
Heptachlor Epoxide	1024573	0.01
a-Hexachlorocyclohexane	319846	0.01
b-Hexachlorocyclohexane	319857	0.005
d-Hexachlorocyclohexane	319868	0.005
g-Hexachlorocyclohexane (Lindane)	58899	0.02
PCB1016	--	0.5
PCB1221	--	0.5
PCB1232	--	0.5
PCB1242	--	0.5
PCB1248	--	0.5
PCB1254	--	0.5
PCB1260	--	0.5
Toxaphene	8001352	0.5

Table II-4 Notes

a) GC Method = Gas Chromatography
* To determine the lowest standard concentration in an instrument calibration curve for these techniques, use the given ML (see Ocean Plan, Chapter III, "Use of Minimum Levels").

TENTATIVE