CALIFORNIA
Water Boards

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SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

October 15, 2015

Mr. Thomas A. Di Ciolli
Plant Manager
NRG California South LP
393 North Harbor Blvd.
Oxnard, CA 93035

Dear Mr. Di Ciolli:

TRANSMITTAL OF WASTE DISCHARGE REQUIREMENTS AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR NRG CALIFORNIA SOUTH LP MANDALAY GENERATING STATION, OXNARD, CA. (NPDES NO. CA0001180, CI NO. 2093).

Our letter dated September 24, 2015, transmitted the revised tentative Waste Discharge Requirements (WDRs) for renewal of your permit to discharge wastewater to surface waters under the National Pollutant Discharge Elimination System (NPDES) Program.

Pursuant to Division 7 of the California Water Code, this Regional Water Board at a public hearing held on October 8, 2015, reviewed the revised tentative requirements, considered all factors in the case, and adopted Order No. R4-2015-0201. Order No. R4-2015-0201 serves as an NPDES permit, and it expires on December 31, 2020. Section 13376 of the California Water Code requires that an application/Report of Waste Discharge for a new permit must be filed at least 180 days before the expiration date.

You are required to implement the Monitoring and Reporting Program (MRP) on the effective date (January 1, 2016) of Order No. R4-2015-0201. Your first monitoring report for the period of January 1, 2016, through March 31, 2016, is due by May 1, 2016. NRG California South LP will electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) (http://www.waterboards.ca.gov/ciwqs/index.html).

When submitting monitoring or technical reports to the Regional Water Board per these requirements, please include a reference to Compliance File CI-2093 and NPDES No. CA0001180, which will assure that the reports, are directed to the appropriate file and staff.

We are sending the paper copy of the Permit to the Discharger only. For those on the mailing list or other interested parties who would like access to a copy of the Permit, please go to the Regional Water Board's website at:
http://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/by_permits_tools.shtml.

If you have any questions, please contact Rosario Aston at (213) 576-6653.

Sincerely,

Cassandra D. Owens, Chief
Industrial Permitting Unit

Enclosures: Order No. R4-2015-0201 - Waste Discharge Requirements
Attachment E - Monitoring and Reporting Program (MRP No. CI-2093)
Attachment F - Fact Sheet

cc: **(VIA Email Only)**

Mr. David Smith, Environmental Protection Agency, Region 9, Permits Branch (WTR-5)
Ms. Robyn Stuber, Environmental Protection Agency, Region 9, Permits Branch (WTR-5)
Ms. Becky Mitschele, Environmental Protection Agency, Region 9, Permits Branch (WTR-5)
Mr. Kenneth Wong, U.S. Army Corps of Engineers
Ms. Crystal Marquez, U.S. Army Corps of Engineers
Mr. Bryant Chesney, NOAA, National Marine Fisheries Service
NPDES Wastewater Unit, State water Resources Control Board, Division of Water Quality
Mr. Renan Jauregui, State Water Resources Control Board, Division of Water Quality
Ms. Marylou Taylor, California Energy Commission
Mr. Jeff Phillips, Department of Interior, U.S. Fish and Wildlife Service
Mr. William Paznokas, Department of Fish and Wildlife, Region 5
Ms. Sutida Bergguist, State Water Resources Control Board, Drinking Water Division
Ms. Teresa, Henry, California Coastal Commission, South Coast Region
Mr. Theodore Johnson, Water Replenishment District of Southern California
Mr. Tim Smith, Los Angeles County, Department of Public Works, Waste Management Division
Mr. Angelo Bellomo, Los Angeles County, Department of Public Health
Mr. Gerhardt Hubner, County of Ventura, Flood Control District
Ventura Port District Harbor Patrol
Ms. Elena Brokaw, City of San Buenaventura
City of San Buenaventura, Parks and Recreation
Sierra Club, Southern Coastal Coordinator
Mr. Mati Waiya, Ventura CoastKeeper
Mr. Jason Weiner, Wishtoyo Foundation and its Ventura Coastkeeper Program
Mr. Al Wagner, California Coastal Commission, South Coast Region
Friends of the Ventura River
Mr. Paul Jenkin, Surfrider Foundation, Ventura County Chapter
Ms. Jessica Altstatt, Santa Barbara Channel Keeper
Ms. Betsy Weber, Environmental Defense Center
Mr. Greg Nyhoff, City of Oxnard
Ms. Rita Kampalath, Heal the Bay
Mr. Bruce Reznik, Los Angeles WaterKeeper
Ms. Johanna Dryer, Natural Resources Defense Council

cc: **(VIA Email Only)** Cont'd:

Mr. Damon Wing, Ventura County
Mr. Daniel Cooper, Lawyers for Clean Water
Mr. Jae Kim, Tetra Tech
Ms. Kristy Allen, Tetra Tech
Mr. Scott Warnock, NRG California South LP, Ormond Beach Generating Station
Mr. William Probasco, NRG California South, LP
Ms. Julie Babcock, NRG California South, LP
Mr. George Piantka, NRG California South, LP
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LOS ANGELES REGION

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ORDER NO. R4-2015-0201
NPDES NO. CA0001180

WASTE DISCHARGE REQUIREMENTS FOR THE NRG CALIFORNIA SOUTH LP MANDALAY GENERATING STATION

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

Table 1. Discharger Information

Discharger	**NRG California South LP**
Name of Facility	**Mandalay Generating Station**
Facility Address	**393 North Harbor Boulevard**
	Oxnard, CA 93035
	Ventura County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Once-through cooling water, metal cleaning wastes, low volume wastes, and storm water	34.60639°	-119.25002°	Pacific Ocean

Table 3. Administrative Information

This Order was adopted on:	**October 8, 2015**
This Order shall become effective on:	**January 1, 2016**
This Order shall expire on:	**December 31, 2020**
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 the date indicated above.

Samuel Unger, P.E., Executive Officer

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I. FACILITY INFORMATION

Information describing the Mandalay Generating Station (Facility) 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 California 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 USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

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. Some provisions/requirements in this Order 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 01-057 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 past violations of Order 01-057.

III. DISCHARGE PROHIBITIONS

A. Wastes discharged shall be limited to a maximum of 255.3 million gallons per day (MGD) at Discharge Point 001 of once-through cooling water, metal cleaning wastes, storm water, and low volume wastewater as described in the findings and fact sheet (Attachment F). The discharge of wastes from accidental spills or other sources is prohibited.

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

F. Discharge of oil or any residuary product of petroleum to waters of the State, except in accordance with waste discharge requirements or other provisions of Division 7 of the CWC, is prohibited.

G. The discharge of any radiological, chemical, or biological warfare agent into the waters of the state is prohibited under Water Code section 13375.

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

I. There shall be no discharge of polychlorinated biphenyl (PCB) compounds.

J. The discharge of any in-plant waste streams from the Facility, specifically including the discharge of low volume wastes and storm water, is prohibited unless coincident with circulating water pump flows related to power generation or critical system maintenance. This prohibition is effective until the Facility achieves final compliance with the OTC Policy, prior to which the terms and provisions of this Order shall be reconsidered to account for the change of operation at the Facility.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Combined Effluent Through Discharge Point 001

a. 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 at Discharge Point 001 (Monitoring Location EFF-001)

Parameter	Units	Effluent Limitations				
		Six-Month Median	Average Concentration	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	--	--	--	6.0	9.0
Chronic Toxicity[1]	Pass or Fail, % Effect (for the TST approach)	--		Pass or % Effect <50	--	--

Parameter	Units	Effluent Limitations				
		Six-Month Median	Average Concentration	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Free Available Chlorine[2]	mg/L	--	0.2[3]		--	0.5
Total Residual Chlorine[2,5]	mg/L	--	--	--	--	0.365[4]
Chromium (VI)[6,8]	µg/L	7.2	--	28.8	--	72
	lbs/day[7]	15.3	--	61.3	--	--
Copper, Total Recoverable[8]	µg/L	5.6	--	38	--	103
	lbs/day[7]	11.9	--	81	--	
Mercury, Total Recoverable[8]	µg/L	0.143		0.575	--	1.4
	lbs/day[7]	0.3		1.22	--	--
Radioactivity	pCi/L	[9]				

1. Chronic toxicity shall be reported as "Pass" or "Fail" and "% Effect" for the maximum daily effluent limitation (MDEL).
2. Discharge is limited to 2 hrs/day/unit. Simultaneous discharge of chlorine from multiple units is prohibited.
3. Applied as an average concentration limitation during chlorine release period.
4. This limit is applicable to the sampling during periods of chlorination. Each condenser half (two in a single unit) is chlorinated for up to 10 minutes per chlorination cycle, and there is a maximum of three chlorination cycles per 24-hour period. Each cycle consists of 10 minutes per condenser half, plus 10 minutes for each of three bearing cooling water heat exchangers. Condenser halves and heat exchangers are chlorinated sequentially during each cycle. For chlorine discharges of up to 10 minutes per condenser half, the instantaneous maximum limit is 0.365 mg/L. For chlorine discharges exceeding 10 minutes, the instantaneous maximum total residual chlorine limitation shall be the BAT limitation of 0.2 mg/L
5. If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.
6. The Discharger may at their option meet this effluent limitation as a total chromium effluent limitation.
7. The mass-based effluent limitations are based on a maximum combined effluent flow from Discharge Point 001 of 255.3 MGD and are calculated using the following formula:

   Mass-based effluent limitation (lbs/day) = C * Q * 0.00834

   Where:

   C = Concentration-based effluent limitation (µg/L) calculated in the combined discharge (cooling water and in-plant wastes)

   Q = Maximum discharge flow rate (MGD) = 255.3 MGD of the combined cooling water and low volume wastes discharge to Discharge Point 001.
8. Concentration-based limits are based on Ocean Plan objectives using a dilution ratio of 2.6 parts of seawater to 1 part effluent.
9. 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.

b. PCBs. There shall be no discharge of PCBs

c. Temperature. The temperature of the wastes discharged shall not exceed 106°F during normal operation of the Facility. During heat treatment, the temperature of wastes discharged shall not exceed 125°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 135°F. Temperature fluctuations during gate adjustment above 125°F shall not last for more than 30 minutes.

d. Total Coliform Bacteria. The total coliform bacteria density in the effluent shall not exceed a single-sample maximum of 1,000 MPN per 100 mL.

B. Final Effluent Limitations For Low Volume Wastewaters (In-Plant Waste Streams - Monitoring Locations INT-001A, INT-001B, and INT-001C

1. Final Effluent Limitations For the North and South Retention Basins Low Volume Wastes (Monitoring Location INT-001A)

a. The Discharger shall maintain compliance with the following effluent limitations for all low volume wastes treated in the north and south retention basins, with compliance measured at Monitoring Location INT-001A as described in the Monitoring and Reporting Program, Attachment E:

Table 5. Effluent Limitations For the North and South Retention Basins Low Volume Wastes (Monitoring Location INT-001A)

Parameter	Units	Effluent Limitations				
		Six-Month Median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	pH Units	--	--	--	6.0	9.0
Oil and Grease	mg/L	--	15.0	20.0	--	--
	lbs/day	--	108[1]	143[1]	--	--
TSS	mg/L	--	30.0	100.0	--	--
	lbs/day	--	215[1]	717[1]	--	--
PCBs	µg/L	[2]				

1. Mass-based limitations are based on the retention basins flow of 0.86 MGD reported by the Discharger as shown on the schematic water flow and are calculated as follows:

Mass-based limitation (lbs/day) = C x Q_m x 0.00834
Where: C = Concentration-based limitations (µg/L) as prescribed in 40 C.F.R. Part 423.

Q_m = 0.86 MGD, the maximum flow for the north and south retention basins low volume wastes at Monitoring Locations INT-001A.

2. The Discharge of PCBs is prohibited (See Discharge Prohibitions III.I).

2. Final Effluent Limitations For Boiler Blowdown Low Volume Wastes (Monitoring Location INT-001B)

a. The Discharger shall maintain compliance with the following effluent limitations for all low volume wastes not treated in the retention basins (i.e.,boiler blowdown), with compliance measured at Monitoring Location INT-001B as described in the Monitoring and Reporting Program, Attachment E:

Table 6. Effluent Limitations For Boiler Blowdown Low Volume Wastes (Monitoring Location INT-001B)

Parameter	Units	Effluent Limitations				
		Six-Month Median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	pH Units	--	--	--	6.0	9.0
Oil and Grease	mg/L	--	15.0	20.0	--	--
	lbs/day	--	28[1]	38[1]	--	--

Parameter	Units	Effluent Limitations				
		Six-Month Median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
TSS	mg/L	--	30.0	100.0	--	--
	lbs/day	--	57[1]	189[1]	--	--
PCBs	µg/L	[2]				

1. Mass-based limitations are based on the boiler blowdown flow of 0.227 MGD reported by the Discharger as shown on the schematic water flow and are calculated as follows:

Mass-based limitation (lbs/day) = C x Q_m x 0.00834
Where: C = Concentration-based limitations (µg/L as prescribed in 40 C.F.R. Part 423.

Q_m = 0.227 MGD, the maximum flow for boiler blowdown low volume wastes at Monitoring Locations INT-001B.

2. The Discharge of PCBs is prohibited (See Discharge Prohibitions III.I).

3. Final Effluent Limitations For Chemical Metal Cleaning Wastes (Monitoring Location INT-001C)

a. The Discharger shall maintain compliance with the following effluent limitations for chemical metal cleaning wastes, with compliance measured at Monitoring Location INT-001C as described in the Monitoring and Reporting Program, Attachment E:

Table 7. Effluent Limitations For Chemical Metal Cleaning Wastes (Monitoring Location INT-001C)

Parameter	Units	Effluent Limitations				
		Six-Month Median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	pH Units	--	--	--	6.0	9.0
Oil and Grease	mg/L	--	15.0	20.0	--	--
	lbs/day	--	8[1]	10[1]	--	--
TSS	mg/L	--	30.0	100.0	--	--
	lbs/day	--	15[1]	50[1]	--	--
Copper, Total Recoverable	mg/L	--	1.0	1.0	--	--
	lbs/day	--	0.5[1]	0.5[1]	--	--
Iron, Total Recoverable	mg/L	--	1.0	1.0	--	--
	lbs/day	--	0.5[1]	0.5[1]	--	--
PCBs	µg/L	[2]				

1. Mass-based limitations are based on the chemical metal cleaning wastes flow of 0.06 MGD reported by the Discharger as shown on the schematic water flow and are calculated as follows:

Mass-based limitation (lbs/day) = C x Q_m x 0.00834
Where: C = Concentration-based limitations (µg/L) as prescribed in 40 C.F.R. Part 423.

Q_m = 0.06 MGD, the maximum flow for chemical metal cleaning wastes at Monitoring Locations INT-001C.

2. The Discharge of PCBs is prohibited (See Discharge Prohibitions section III.I).

4. Final Effluent Limitations For In-Plant Waste Streams (Total).

a. The Discharger shall maintain compliance with the following effluent limitations for all in-plant waste streams taken together, with compliance determined by the **sum** of mass discharges measured at Monitoring Location INT-001A, INT-001B, INT-001C, as described in the Monitoring and Reporting Program, Attachment E:

Table 8. Effluent Limitations for In-plant Wastes[1] (Total)

Pollutant	Units	Effluent Limitations				
		6-month median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chromium (VI)[2]	lbs/day[3]	0.069	--	0.276	--	--
Copper, Total Recoverable	lbs/day[3]	0.054	--	0.364	--	--
Mercury, Total Recoverable	lbs/day[3]	0.0014	--	0.0055	--	--

1. Compliance shall be determined from the sum of mass discharges of each parameter in the individual in-plant waste streams.

   Total Mass Emission per day (lb/day) = Mass Emission at INT-001A (calculated using flow measured at INT-001A) (lb/day) + Mass Emission at INT-001B (calculated using flow measured at INT-001B) (lb/day) + Mass Emission at INT-001C (calculated using flow measured at INT-001C) (lb/day)

   The Total Mass Emission per day(lb/day) value from a single day will be compared with the maximum daily effluent limitations as set forth in this table for compliance determination; compliance with the 6-month median effluent limitations shall be determined by the median of Total Mass Emission per day values over any 180-day period.
2. The Discharger may at their option meet this effluent limitation as a total chromium limitation.
3. The mass-based effluent limitations are based on a maximum combined flow of 1.147 MGD for all in-plant waste streams, and are calculated using the following formula:

   Mass-based effluent limitation (lbs/day)= C * Q * 0.00834

   Where:

   C = Concentration-based effluent limitation (µg/L), calculated in the combined discharge (cooling water and in-plant wastes) and listed in Table 4.

   Q = 1.147 MGD, the maximum combined flow for all in-plant waste streams

   Where:

   Q = Total combined in-plant waste streams flow = 0.86 + 0.227 + 0.06 = 1.147 MGD.

C. Land Discharge Specifications – Not Applicable

D. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

Receiving water limitations are based on water quality objectives contained in the California Ocean Plan, as most recently amended effective August 19, 2013 (“Ocean Plan”), and are a required part of this Order. Unless specifically excepted by this Order, the discharge, by itself or jointly with any other discharge(s), shall not cause violations 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)).

A. Bacterial Characteristics

1. 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/Regional Water Board Water Contact 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 Limits – 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 (SSM):

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.

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

The California Department of Public Health (CDPH) has established minimum protective bacteriological standards for coast 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 (C.C.R.), 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.

2. Shellfish Harvesting Standards

At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the waste discharged shall not cause the following bacterial standards to be exceeded throughout the water column:

a. 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.

B. Physical Characteristics

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

2. 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.

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

4. 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.

C. Chemical Characteristics

1. 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.

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

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

4. 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.

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

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

7. 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.

D. Biological Characteristics

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

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

3. 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.

E. Radioactivity

1. Discharge of radioactive waste shall not degrade marine life.

F. 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 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 storm 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. Discharge of wastes to any point other than specifically described in this Order and permit is prohibited and constitutes a violation thereof.

d. 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.

e. These requirements do not exempt the operator of the waste disposal Facility from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize this waste disposal 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.

f. Oil or oily material, chemicals, refuse, or other pollutionable materials 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.

g. 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.

h. 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.

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

j. The Discharger shall notify the Regional Water Board not later than 120 days in advance of implementation of any plans to alter production capacity of the product line of the manufacturing, producing or processing Facility by more than ten percent. Such notification shall include estimates of proposed production rate, the type of process, and projected effects on effluent quality. Notification shall include submittal of a new report of waste discharge appropriate filing fee.

k. The Discharger shall file with the Regional Water Board a report of waste discharge at least 120 days before making any material change or proposed change in the character, location or volume of the discharge.

l. 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 intermediate or final product or byproduct of any toxic pollutant that was not reported on their application.

m. 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, copy of which shall be forwarded to the Regional Water Board.

n. 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.

o. Violation of any of the provisions of the NPDES program or 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.

p. 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.

q. 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.

r. 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.

s. 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.

t. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, average monthly effluent limitation, instantaneous maximum or instantaneous minimum effluent limitation, six-month median 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.

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. This Order may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above a California Ocean Plan (Ocean Plan) Table 1 water quality objective.

b. 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.

c. This Order may be reopened and modified, to incorporate 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 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.

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.

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.

g. This Order may be reopened for modification, or revocation and reissuance, if the Discharger does not comply with the *Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* (OTC Policy) Policy by December 31, 2020.

h. This Order may be modified, or revoked and reissued, based on the results of Magnuson-Stevens Conservation and Management Act and/or Endangered Species Act section 7 consultations with the National Marine Fisheries Service and/or the U.S. Fish and Wildlife Service.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Initial Investigation Toxicity Reduction Evaluation (TRE) Workplan. The Discharger shall submit to the Regional Water Board an Initial Investigation TRE workplan (1-2 pages) within 90 days of the effective date of this permit. This plan shall describe the steps the permittee intends to follow in the event that toxicity is detected. See section V of the Monitoring and Reporting Program (Attachment E) for an overview of TRE requirements.

3. Best Management Practices and Pollution Prevention

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

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

i. A Storm Water Pollution Prevention Plan (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.

ii. A Best Management Practices Plan (BMPP), that 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. The BMPs shall be consistent with the general guidance contained in the USEPA Guidance Manual for Developing Best Management Practices (BMPs) (EPA 833 B 93

004). 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.

iii. A Spill Control Plan (SCP), that describes the preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events.

Each plan 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 point; describe the activities in each area and the potential for contamination of storm water runoff and the discharge of hazardous waste/material; and address the feasibility of containment and/or treatment of storm water.

The Discharger shall implement the SWPPP, BMPP, and SCP (or SPCC) 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 plans shall be reviewed annually and at the same time. Updated information shall be submitted to the Regional Water Board within 30 days of revisions.

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.

5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable

6. Other Special Provisions

a. Discharges of Storm Water

Except for storm water authorized under this Order to be discharged through Discharge Point 001, the Discharger shall maintain coverage under General Permit No. CAS000001 and, except as otherwise authorized by this Order, shall meet the requirements of that general permit for the control of storm water discharges from the Facility.

b. Once-Through Cooling Water Compliance Schedule

i. **Compliance Date and Alternatives.** The Discharger submitted an implementation plan for compliance with the OTC Policy on April 1, 2011. According to its implementation plan, the facility consists of three units: Units 1 and 2 are each 215 megawatts (MW) steam electric generating units that use once-through cooling and Unit 3 is a 130 MW simple-cycle combustion turbine unit that does not use once-through cooling water. Thus, Unit 3 is not subject to the OTC Policy requirements. Per its original implementation plan, the Discharger proposed compliance using the Track 2 alternative of the OTC Policy. However, a subsequent letter dated May 14, 2012, indicated that due to uncertainties and other concerns with Track 2 compliance, the Discharger has opted for the Track 1 alternative of the OTC Policy compliance. A subsequent letter dated April 23, 2015, indicated that the Discharger continues to pursue the Track 1 alternative of the OTC Policy. The Discharger intends to achieve Track 1 compliance for Units 1 and 2 by retiring them and replacing them with the Puente Power Project (P3) by the December 31, 2020, OTC Policy compliance deadline. The Puente Power Project is a 262 MW natural gas-fired combustion turbine (General Electric 7HA.01) which will be located at the site

of the Mandalay Facility. In November 2014, NRG Energy Center Oxnard LLC, an affiliate of the Discharger, was awarded a contract with Southern California Edison (SCE) to replace Units 1 and 2 with P3. NRG Energy Center Oxnard LLC has entered into a 20-year Resource Adequacy Purchase Agreement with SCE. NRG Energy Center Oxnard LLC filled an Application for Certification (AFC) with the California Energy Commission (CEC) on April 15, 2015, and the application for Authority to Construct/Determination of Compliance with the Ventura County Air Pollution Control District (VCAPCD) was filled on March 19, 2015. The permitring process for the P3 from the CEC/VCACPD is expected to be completed in 2017. The construction of P3 is expected to occur from October 2018 through June 2020. The Discharger is on track to comply by December 31, 2020, compliance deadline included in the OTC Policy.

This Order requires the Discharger to submit annual reports to the Regional Water Board on the Faciltiy's progress towards achieving final compliance with the OTC Policy. The Discharger shall submit the first report to the Regional Water Board on December 1, 2016:

Table 9. Progress Report Schedule of Compliance with OTC Policy

Task	Compliance Date
1. Submit Workplan for OTC Policy compliance under Track 1	December 1, 2016
2. Submit first progress Report on compliance actions	December 1, 2017
3. Submit second progress Report	December 1, 2018
4. Submit third progress Report.	December 1, 2019
5. Achieve full compliance with Units 1 and 2; submit final progress report.	December 31, 2020

Based on the need for continued operation to maintain the reliability of the electric system, the Los Angeles Regional Water Board or State Water Board may reopen this Order to suspend the compliance date of December 31, 2020, for the Facility, under the circumstances set forth in OTC Policy section 2.B(2).

a. Immediate and Interim Requirements

The Discharger shall implement the following immediate and interim actions:

i. As of **October 1, 2011**, any unit that is not directly engaged in power-generating activities or critical system maintenance (as defined in Attachment A of this Order) shall cease intake flows unless it has been demonstrated to the State Water Board that a reduced minimum flow is necessary for operations.

ii. Commencing on **October 1, 2015**, the Discharger shall implement measures to mitigate interim impingement and entrainment impacts until full compliance is achieved by December 31, 2020 The Discharger may comply with this requirement by:

(a) Demonstrating to the State Water Board's satisfaction that the Discharger is compensating for the interim impingement and entrainment impacts through existing mitigation efforts, including any projects that were required by state or federal permits as of October 1, 2010, or

(b) Demonstrating to the State Water Board's satisfaction that the interim impacts are compensated for by the Discharger by providing funding to

the California Coastal Conservancy which will work with the California Ocean Protection Council to fund an appropriate mitigation project[1].

(c) Developing and implementing a mitigation project for the facility, approved by the State Water Board, which will compensate for the interim impingement and entrainment impacts. Such a project must be overseen by an advisory panel of experts convened by the State Water Board.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

A. Compliance with Effluent Limitations expressed as Single Constituents.

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.G. of the MRP), then the Discharger is out of compliance.

B. Compliance with Effluent Limitations Expressed as Sum of Several Constituents

Dischargers are out of compliance with an effluent limitation which applies to the sum of a group of chemicals (e.g., PCBs) if the sum of the individual pollutant concentrations is greater than the effluent limitation. Individual pollutants of the group will be considered to have a concentration of zero if the constituent is reported as "Not Detected" (ND) or "Detected, but Not Quantified" (DNQ).

C. Multiple Sample Data Reduction.

The concentration of the pollutant in the effluent may be estimated from the result of a single sample analysis or by a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses when all sample results are quantifiable (i.e., greater than or equal to the reported Minimum* Level). When one or more sample results are reported as ND or DNQ, the central tendency concentration of the pollutant shall be the median (middle) value of the multiple samples. If, in an even number of samples, one or both of the middle values is ND or DNQ, the median will be the lower of the two middle values.

D. Mass-Based Effluent Limitations.

Compliance with mass effluent will be estimated based on flow and concentration. When the concentration for the parameter in a sample is reported as Not Detected (ND) or Detected, but Not Quantified (DNQ), the corresponding mass emission rate determined using that sample concentration shall also be reported as ND or DNQ.

E. Average Monthly (30-Day Average) Effluent Limitation (AMEL).

If the average (or when applicable, the median determined by subsection C above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and 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). However, an alleged violation of the AMEL will be considered one violation for the purpose of assessing mandatory minimum penalties. The average of daily discharges over a calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. If only a single sample (daily discharge) is taken over a calendar month and the analytical result for that sample exceeds the AMEL, the

[1] It is the preference of the State Water Board that funding is directed toward mitigation projects addressing increases in marine life associated with the State's Marine Protected Areas in the area of the discharge.

Discharger will be considered out of compliance for that month. If no sample (daily discharge) is taken over a calendar month, no compliance determination can be made for that month with respect to effluent violation determination, but compliance determination can be made for that month with respect to reporting violation determination.

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 of the additional samples were received, whichever is later.

When all sample results are greater than or equal to the reported Minimum Level (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 (ND)" or "Detected, but Not Quantified (DNQ)" (see Reporting Requirement I.G. of the MRP), the median value of these four 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.

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.

3. If only one sample was obtained for the month or more than a monthly period and the result exceeds the AMEL, then the Discharger is in violation of the AMEL.

F. Maximum Daily Effluent Limitation (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. Average Concentration Effluent Limitation (for Free Available Chlorine)

If the average concentration of discharge during a chlorine release period exceeds the average concentration effluent limitation for free available chlorine, an alleged violation will be flagged and the Discharger will be considered out of compliance. Discharge of chlorine is limited to 2 hours/day/unit. The average concentration shall be calculated as the sum of all discharges of free available chlorine measured during a chlorine release period divided by the number of measurements taken for that parameter during that period. If no sample is taken over a chlorine release period, no compliance determination can be made for that chlorine release period with respect to an effluent violation determination, but compliance determination can be made for that chlorine release period with respect to reporting violation determination.

H. Instantaneous Minimum Effluent Limitation

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

I. Instantaneous Maximum Effluent Limitation

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

J. Six-Month Median Effluent Limitation

If the median of daily discharges over any 180-day period exceeds the six-month median effluent limitation for a given parameter, an alleged violation will be flagged and the discharger will be considered out of compliance for each day of that 180-day period for that parameter. The next assessment of compliance will occur after the next sample is taken. If only a single sample is taken during a given 180-day period and the analytical result for that sample exceeds the six-month median, the discharger will be considered out of compliance for the 180-day period. For any 180-period during which no sample is taken, no compliance determination can be made for the six-month median limitation.

The six-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. If only one sample is collected during the time period associated with the 6-month median water quality objective, the single measurement shall be used to determine compliance with the effluent limitation for the entire time period.

K. Median Monthly Effluent Limitation (MMEL)

If the median of daily discharges over a calendar month exceeds the MMEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of noncompliance in a 31-day month). However, an alleged violation of the MMEL will be considered one violation for the purpose of assessing State mandatory minimum penalties. If no sample (daily discharge) is taken over a calendar month, no compliance determination can be made for that month with respect to effluent violation determination, but compliance determination can be made for that month with respect to reporting violation determination.

L. Chronic Toxicity

The discharge is subject to determination of “Pass” or “Fail” and “Percent Effect” from a single-effluent concentration chronic toxicity test at the discharge IWC using the Test of Significant Toxicity (TST) approach described 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. The null hypothesis (Ho) for the TST 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.

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 approach, results in "Fail" and the "Percent Effect" is ≥0.50.

M. 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 sample is reported as ND or DNQ, the corresponding mass emission rate determined using that sample concentration shall also be reported as ND or DNQ.

N. Bacterial Standards and Analyses.

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

$$\text{Geometric Mean} = (C_1 \times C_2 \times \ldots \times C_n)^{1/n}$$

where n is the number of days samples were collected during the period and C is the concentration of bacteria (MPN/100 mL or CFU/100 mL) 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 1000 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 and fecal) and *Enterococcus* shall be those presented in Table 1A of Part 136 (revised July 1, 2009), unless alternate methods have been approved by USEPA pursuant to Part 136 or improved methods have been determined by the Executive Officer and/or USEPA.

ATTACHMENT A – DEFINITIONS

Areas of Special Biological Significance (ASBS)
Those areas designated by the State Water Resources Control Board (State Water Board) as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

Average Concentration Effluent Limitation (for Free Avialable Chlorine)
The highest allowable average concentration of free available chlorine discharges over a single chlorine release period (which does not exceed two hours), calculated as the sum of all discharges for that parameter measured during a chlorine release period divided by the number of measurements taken during that period.

Average Monthly (30-Day Average) 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.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

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 control, 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.

Blowdown
The term blowdown means the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices.

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

Chemical Metal Cleaning Wastes
The term chemical metal cleaning waste means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning.

Chlordane
Shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Chlorinated Phenolic Compounds
Chlorinated phenolic compounds mean the sum of 2-chlorophenol, 2,4-dichlorophenol, 4-chloro-3-methylphenol, 2,4,6-trichlorophenol, and pentachlorophenol.

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.

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

Composite sample, for other than flow rate measurement, means:

a. No fewer than eight individual sample portions taken at equal time intervals for 24 hours, or the duration of the discharge, whichever is shorter. The volume of each individual sample portion shall be directly proportional to the discharge flow rate at the time of sampling; or,

b. No fewer than eight individual sample portions taken of equal time volume taken over a 24 hour period. The time interval between each individual sample portion shall vary such that the volume of the discharge between each individual sample portion remains constant.

The compositing period shall equal the specified sampling period, or 24 hours, if no period is specified.

For a composite sample, if the duration of the discharge is less than 24 hours but greater than 8 hours, at least eight flow-weighted individual sample portions shall be taken during the duration of the discharge and composited. For a discharge duration of 8 hours or less, eight individual “grab samples” may be substituted and composited.

The composite sample result shall be reported for the calendar day during which composite sampling ends.

Critical System maintenance
Activities that are critical for maintenance of a plant’s physical machinery and absolutely cannot be postponed until the unit is operating to generate elecricitiy.

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.

DDTs
Shall mean the sum of 4,4’DDT, 2,4’DDT, 4,4’DDE, 2,4’DDE, 4,4’DDD, and 2,4’DDD.

Degrade (Degradation)
Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

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

Dichlorobenzenes
Shall mean the sum of 1,2- and 1,3-dichlorobenzene.

Downstream Ocean Waters
Waters downstream with respect to ocean currents.

Dredged Material
Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as "spoil."

Enclosed Bays
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 headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Endosulfan
The sum of endosulfan-alpha and -beta and endosulfan sulfate.

Estuaries and Coastal Lagoons are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

Existing Power Plant
Refers to any power plant that is not a new power plant. A new power plant is a "new facility', as defined in 40 C.F.R. section 125.83 (revised as of July 1, 2007), and that is subject to Subpart I, Part 125 of the Codes of Federal Regulations (revised as of July 1, 2007) (referred to as "Phase I regulations"). Contrary to a new facility, an existing facility is constructed prior to January 17, 2002.

Grab Sample
Grab Sample means an individual sample collected during a period of time not to exceed 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not occur during hydraulic peaks

Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

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

Initial Dilution
The process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Los Angeles Regional Quality Control Board, whichever results in the lower estimate for initial dilution.

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).

Kelp Beds
For purposes of the bacteriological standards of the Ocean Plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

Low Volume Waste
The term low volume waste sources means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations are otherwise established 40 C.F.R part 423. Low volume wastes sources include, but are not limited to: wastewaters from wet scrubber air pollution control systems, ion exchange water treatment system, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Sanitary and air conditioning wastes are not included.

Mariculture
The culture of plants and animals in marine waters independent of any pollution source.

Material
(a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, MATERIAL means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant.

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 $n/2+1$).

Metal Cleaning Waste
The term metal cleaning waste means any wastewater resulting from cleaning—with or without chemical cleaning compounds—any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

Method Detection Limit (MDL)
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 40 C.F.R. part 136, Attachment B.

Minimum Level (ML)
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

Natural Light
Reduction of natural light may be determined by the Regional Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Water Board.

Nonchemical Metal Cleaning Wastes
The term nonchemical metal cleaning waste means any wastewater resulting from the cleaning of any metal process equipment without chemical cleaning compounds, including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

Non-Chlorinated Phenolics
Non-chlorinated phenolic compounds shall mean the sum of phenol, 2,4-dimethylphenol, 2-nitrophenol, 4-nitrophenol, 2,4-dinitrophenol, and 2-methyl-4,6-dinitrophenol.

Not Detected (ND)
Those sample results less than the laboratory's MDL.

Ocean Waters
The territorial marine waters of the state as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the state could affect the quality of the waters of the state, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

Once-Through Cooling Water
The term once-through cooling water means water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat.

PAHs (polynuclear aromatic hydrocarbons)
The 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.

PCBs (polychlorinated biphenyls)
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.

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 Ocean Plan Table 1 pollutants 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.

Power Generating Activities
Activitives directly related to the generation of electrical power, including start-up and shut-down procedures, contractual obligations (hot stand-by), hot bypasses, and critical system maintenance regulated by the Nuclear Regulatory Commission. Acitivites that are not considered directly related to the generation of electricity include (but are not limited to) dilution for in-plant wastes, maintenance of source and receiving water quality strictly for monitoring purposes, and running pumps strictly to prevent fouling of condensers and other power plant equipment.

Reported Minimum Level
The reported ML (also known as the Reporting Level or RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the ML's included in this Order, including an additional factor if applicable as discussed herein. The ML's 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 II of the Ocean Plan in accordance with section III.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. 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 reported ML.

Shellfish
Organisms identified by the California Department Public Health as shellfish for public health purposes (i.e., mussels, clams and oysters).

Significant Difference
Defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

Six-Month Median Effluent Limitation
The highest allowable moving median of all daily discharges for any 180-day period.

State Water Quality Protection Areas (SWQPA's)
Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) that were previously designated by the State Water Board in Resolutions 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

TCDD Equivalents
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.

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

Toxicity Reduction Evaluation (TRE)
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.)

Waste
As used in the Ocean Plan, waste includes a Discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

Water Recycling
The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

Water Quality-Based Effluent Limit (WQBEL)
A value determined by selecting the most stringent of the effluent limits calculated using all applicable water quality criteria (e.g., aquatic life, human health, and wildlife) for a specific point source to a specific receiving water for a given pollutant.

Water Quality Criteria
Comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by USEPA or States for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal.

Water Quality Standard
A law or regulation that consists of the beneficial use or uses of a waterbody, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular waterbody, and an antidegradation statement.

Whole Effluent Toxicity (WET)
The total toxic effect of an effluent measured directly with a toxicity test.

Zone of Initial Dilution (ZID)
Zone of Initial Dilution (ZID) means, for purposes of designating monitoring stations, the region within which initial dilution of the discharge in the receiving water occurs, and at the boundary of which initial dilution is completed.

ACRONYMS AND ABBREVIATIONS

AMEL	Average Monthly (30-Day Average) 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
CDPH	California Department of Public Health
C.F.R.	Code of Federal Regulations
CTR	California Toxics Rule
CV	Coefficient of Variation
CWA	Clean Water Act
CWC	California Water Code
Discharger	NRG California South LP
DMR	Discharge Monitoring Report
DNQ	Detected But Not Quantified
ELAP	State Water Resources Control Board, Drinking Water Division, Environmental Laboratory Accreditation Program
ELG	Effluent Limitations, Guidelines and Standards
Facility	Mandalay Generating Station
g/kg	grams per kilogram
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
LA	Load Allocations
LOEC	Lowest Observed Effect Concentration
µg/L	micrograms per Liter
LACDPW	County of Los Angeles, Department of Public Works
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

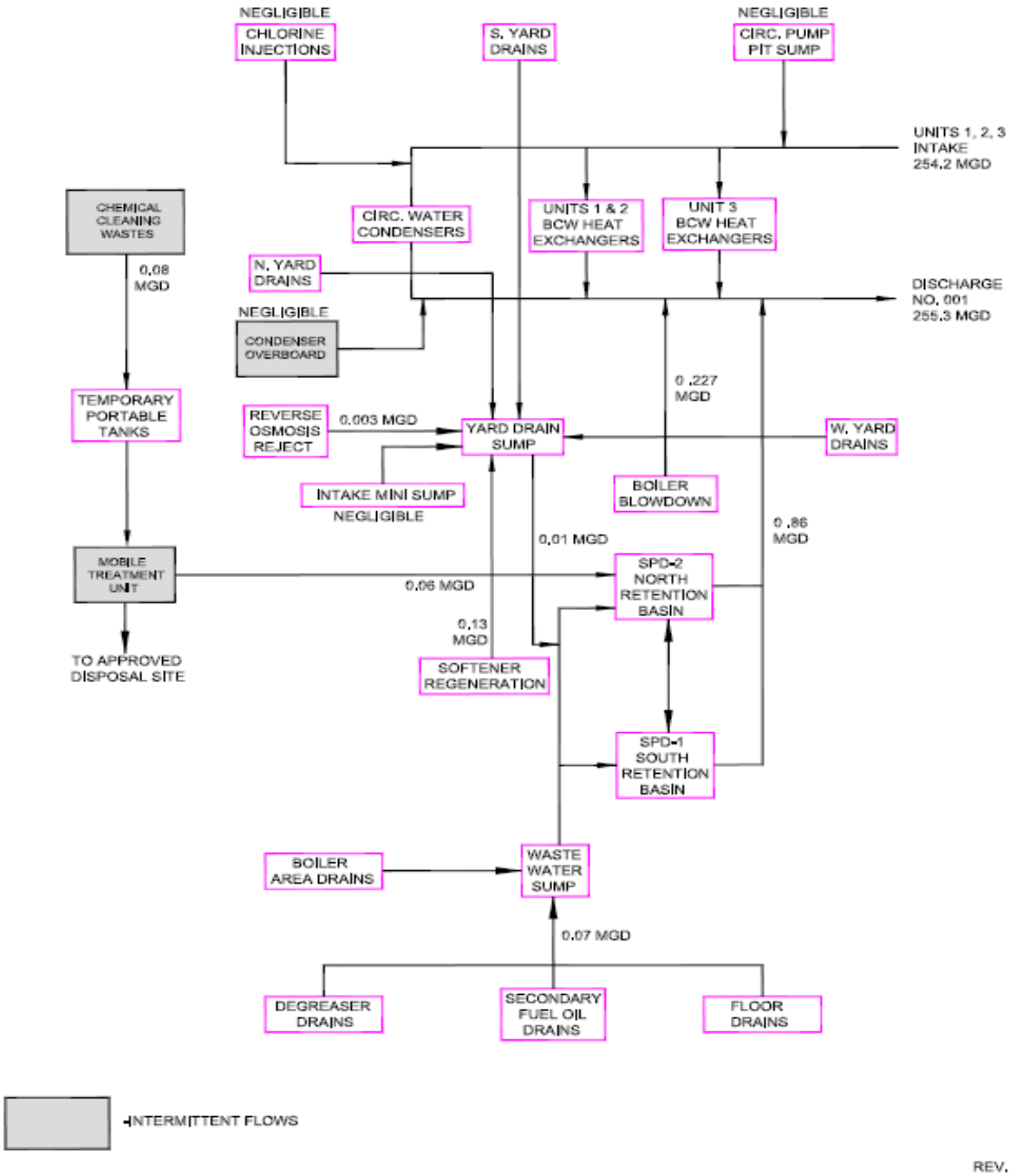
ng/L ..... nanograms per liter
NOEC ..... No Observable Effect Concentration
NPDES ..... National Pollutant Discharge Elimination System
NSPS ..... New Source Performance Standards
NTR ..... National Toxics Rule
OAL ..... Office of Administrative Law
PAHs ..... Polynuclear Aromatic Hydrocarbons
pg/L ..... picograms per liter
PMEL ..... Proposed Maximum Daily Effluent Limitation
PMP ..... Pollutant Minimization Plan
POTW ..... Publicly Owned Treatment Works
ppm ..... parts per million
ppb ..... parts per billion
QA ..... Quality Assurance
QA/QC ..... Quality Assurance/Quality Control
Ocean Plan (OP) ..... 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
TBEL ..... Technology-Based Effluent Limitation
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
WDRs ..... Waste Discharge Requirements
WET ..... Whole Effluent Toxicity
WLA ..... Waste Load Allocations
WQBELs ..... Water Quality-Based Effluent Limitations
WQS ..... Water Quality Standards
ZID ..... Zone of Initial Dilution
% ..... Percent

ATTACHMENT B – MAP

Attachment C – Flow Schematic

FIGURE 2
SCHEMATIC OF WATER FLOW

MANDALAY GENERATING STATION
OXNARD, CALIFORNIA
MARCH, 2015



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 California 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 and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA 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 or sludge use or disposal 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, USEPA, 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).)

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (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 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 Los Angeles Regional Water Quality Control Board. The Los Angeles Water Quality Control 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 results 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. subchapters N or O. In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. §§ 122.41(j)(4), 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), 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 Los Angeles Water Quality Control Board, State Water Board, or USEPA within a reasonable time, any information which the Angeles Water Quality Control 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 Angeles Water Quality Control 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).)

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 for reporting results of monitoring of sludge use or disposal practices. (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. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional 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 that 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 written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the

circumstances. The written submission 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. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

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

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

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

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).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State 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. (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).)

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 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

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

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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 Los Angeles Regional Water Quality Control 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 34.60639°, Longitude -119.25002°)] 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. sections 136.3, 136.4, and 136.5 (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).

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.

E. 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.

F. 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".

G. 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

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 *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan).

H. Where possible, the ML's 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.

I. Where possible, the ML's 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 (RL's), and method detection limits (MDL's).

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 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.

J. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 C.F.R. 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.

K. Field analyses with short sample holding time such as pH, total residual chlorine, and temperature, may be performed using properly calibrated and maintained portable instruments by trained personnel acting on the Discharger's behalf, using methods in accordance with 40 C.F.R. part 136. All field instruments must be calibrated as per the

manufacturer's instructions. A manual containing the standard operating procedures for all field analyses, including records of personnel proficiency training, instruments calibration and maintenance, and quality control procedures shall be maintained onsite, and shall be available for inspection by Regional Water Board staff. Information including instrument calibration, sample collection (date and time), name of analyst, and measurement values shall be clearly documented during each field analysis and submitted to the Regional Water Board as part of the corresponding quarterly monitoring report.

L. All analyses shall be accompanied by the chain of custody, including but not limited to date 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 perjury statement executed by the person responsible for the laboratory.

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

N. The Discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Unless otherwise specified in the analytical method, duplicate samples must be analyzed at a frequency of 5% (1 in 20 samples) with at least one if there is fewer than 20 samples in a batch. A batch is defined as a single analytical run encompassing no more than 24 hours from start to finish. A similar frequency shall be maintained for analyzing spiked samples.

O. When requested by the Regional Water Board or USEPA, the Discharger will participate in the NPDES discharge monitoring report QA performance study. The Discharger must have a success rate equal to or greater than 80%.

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 (30-day average) 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 by the Executive Officer a program to ensure future compliance with the average monthly (30-day average) limit.

Q. In the event wastes are transported to a different disposal site during the reporting period, the following shall be reported in the monitoring report:

1. Types of wastes and quantity of each type;

2. Name and address for each hauler of wastes (or method of transport if other than by hauling); and

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

If no wastes are transported off-site during the reporting period, a statement to that effect shall be submitted.

R. 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
Effluent and Low Volume Wastes Monitoring Stations		
001	EFF-001	At a location where a representative sample of the commingled wastewater can be obtained after treatment but prior to discharge to the Pacific Ocean via Discharge Point 001. (Latitude: 34.60629°; Longitude: -119.25002°)
---	INT-001A	At a location where a representative sample of all low volume wastes treated in the north and south retention basins can be obtained after treatment but prior to commingling with other internal process waste streams or once-through cooling water. (Latitude: 34.206915°; Longitude: -119.251122°)
---	INT-001B	At a location where a representative sample of all low volume wastes not treated in the retention basin (i.e., boiler blowdown) can be obtained prior to commingling with other internal process waste streams or once-through cooling water. (Latitude: 34.206699°; Longitude: -119.250552°)
---	INT-001C	At a location where a representative sample of all chemical metal cleaning wastes can be obtained after treatment but prior to commingling with other internal process waste streams or once-through cooling water.
Receiving Water Monitoring		
• **Nearshore/Offshore Stations for Water Quality Monitoring**		
--	RSW-001	At a location 1,180 feet upcoast of the discharge channel (previously Station RW1)
--	RSW-002	At a location 1,180 feet downcoast of the discharge channel (previously Station RW2)
--	RSW-003	At a location 2,360 feet upcoast of the discharge channel (previously Station RW3)
--	RSW-004	At a location 2,360 feet downcoast of the discharge channel 20 feet (previously Station RW4)
--	RSW-005	At the discharge channel (previously Station RW5)
--	RSW-006	At a location directly offshore of Monitoring Location RSW-013 at a depth of 30 feet (previously Station RW6)
--	RSW-007	At a location directly offshore of Monitoring Location RSW-016 at a depth of 30 feet (previously Station RW7)
--	RSW-008	At a location directly offshore of Monitoring Location RSW-011 at a depth of 30 feet (previously Station RW8)
--	RSW-009	At a location directly offshore of Monitoring Location RSW-017 at a depth of 30 feet (previously Station RW9)
--	RSW-010	At a location directly offshore of Monitoring Location RSW-012 at a depth of 30 feet (previously Station RW10).
--	RSW-011	At a location directly offshore of Monitoring Location RSW-005 at a depth of 20 feet (previously Station RW11).
--	RSW-012	At a location directly offshore of Monitoring Location RSW-004 at a depth of 20 feet (previously Station RW12)

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	RSW-013	At a location directly offshore of Monitoring Location RSW-003 at a depth of 20 feet (previously Station RW13)
--	RSW-014	At a location 5,910 feet downcoast of the discharge channel at a depth of 20 feet (previously Station RW14)
--	RSW-015	At a location 5,910 feet upcoast of the discharge channel at a depth of 20 feet (previously Station RW15)
--	RSW-016	At a location directly offshore of Monitoring Location RSW-001 at a depth of 20 feet (previously Station RW16)
--	RSW-017	At a location directly offshore of Monitoring Location RSW-002 at a depth of 20 feet (previously station RW17)
• **Bottom Stations for Benthic Sediments Monitoring**		
--	BEN-001 through BEN-005	Located directly beneath Monitoring Locations RSW-011 through RSW-015, respectively (previously Stations B1 through B5)
• **Trawling Stations for Trawl Monitoring**		
--	TRL-001	At a location parallel to the shore at depth of 20 feet, extending equidistant to either side of Monitoring Location RSW-015 (previously Station T1)
--	TRL-002	At a location parallel to the shore at depth of 20 feet, extending equidistant to either side of Monitoring Location RSW-016 (previously Station T2)
--	TRL-003	At a location parallel to the shore at depth of 20 feet, extending equidistant to either side of Monitoring Location RSW-017 (previously Station T3)
--	TRL-004	At a location parallel to the shore at depth of 20 feet, extending equidistant to either side of Monitoring Location RSW-014 (previously Station T4)
• **Mussel Station for Bioaccumulation Monitoring**		
--	MUS-001	Within the Pacific Ocean, at the discharge conduit, as close to the point of discharge as possible
• **Sampling Station fo Impingement Survey**		
--	IMP-001	At the cooling water intake system for Units 1,2, and 3
• **Sampling Station for the Zone of Initial Dilution**		
--	ZID-001	Outside of ZID[1] within the waste field where intial dilution is completed.

[1] The zone of initial dilution (ZID) extends approximately 150 feet from Outfall 001 (*Final Analysis of 301 (g) Variance Application for The Southern California Edison Company Mandalay Generating Station,* Water Management Division, EPA Region 9; May 1996).

III. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor the commingled wastewater (composed of storm water, internal process waters, and once-through cooling water) as follows.

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

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	MGD	Meter	Continuous[1]	[2]
Temperature[3]	^{o}F	Meter	Continuous	[2]
pH	standard units	Grab	1/Week	[2]
Ammonia (as N)	µg/L as N	24-hour Composite	1/year	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Nitrate (as N)	µg/L as N	24-hour Composite	1/Year	[2]
Total Coliform[4]	MPN/ 100 mL	Grab	1/Quarter[4]	[2]
Fecal Coliform[4]	MPN/ 100 mL	Grab	1/Quarter[4]	[2]
Enterococcus[4]	MPN/ 100 mL	Grab	1/Quarter[4]	[2]
Chronic Toxicity[6]	Pass or Fail, % effect	24-hour Composite	1/Quarter[7]	[2]
Total Residual Chlorine	mg/L	Grab	1/Day[8]	[2]
Free Available Chlorine	mg/L	Grab	1/Day[8]	[2]
Chromium (VI)[9,10]	µg/L	Grab	1/Month	[2]
Copper, Total Recoverable[10]	µg/L	24-hour Composite	1/Month	[2]
Mercury, Total Recoverable[10]	µg/L	24-hour Composite	1/Month	[2]
PCBs (as Aroclors)[11]	µg/L	24-hour Composite	1/Monthr	[2]
Remaining Ocean Plan Table 1 Pollutants	µg/L	Grab/24-hour Composite[5]	2/Year[14]	[2]
Radioactivity (Including gross alpha, gross beta, combined radium-226 and radium-228, tritium, strontium-90 and uranium)	pCi/L	Grab/24-hour Composite[5]	1/Year	[12]
TCDD Equivalents[13]	µg/L	24-hour Composite	2/Year[14]	[2]

1. When continuous monitoring is required, the total daily flow (24-hour basis) shall be reported. If no discharge occurs during the month, the report shall so state.
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 (2012) that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.
3. Only the maximum temperature for each calendar day shall be reported, except when the temperature exceeds 106°F, in which case the reason(s), duration, and time of day of the events of elevated temperature shall be reported.
4. For each quarterly monitoring event, weekly sampling and analysis shall be conducted until a geometric mean can be obtain for each parameter (using the five most recent sample results).
5. Where a composite sample for the parameter is not appropriate as specified in the respective analytical method in 40 C.F.R. Part 136 or in other EPA methods, a grab sample shall be obtained in lieu of the 24-hour composite sample for that parameter.
6. Refer to section V, Whole Effluent Toxicity Testing Requirements. “Pass” or “Fail” and “% effect” for maximum daily effluent limitation (MDEL).
7. Monthly sampling is required in the first three months of this Order. Species sensitivity screening shall be conducted during first three monthly monitorings. The species that exhibit the highest “Percent Effect” at the discharge IWC during species sensitivity screening shall be used for the routine quarterly monitoring.
8. Monitoring is only applicable during periods of chlorine addition. A statement certifying that chlorination did not occur during the day may be submitted in lieu of an analysis.

9. The Discharger may at their option meet this requirement as total chromium.

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

$$M \text{ (lb/day)} = C \times Q \times 0.00834$$

Where:

M = mass discharge for a pollutant, lbs/day
C = actual concentration for a pollutant, µg/L
Q = actual discharge flow rate, MGD

11. 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 chlorinated biphenyls whose analytical characteristics resemble those 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.

12. 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 combined radium-226 & 228 shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. If radium-226 & 228 exceeds 5 pCi/L, analyze for tritium, strontium-90 and uranium.

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

13. 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.

$$\text{Dioxin-TEQ (TCDD Equivalents)} = \Sigma (C_x \times TEF_x)$$

Where:

C_x = concentration of dioxin or furan congener x
TEF_x = TEF for congener x

Toxicity Equivalence Factors

Isomer Group	Toxicity Equivalence 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

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

15. If a discharge of low volume wastes from the retention basins (to be monitored in Monitoring Location INT-001A), boiler blowdown (Monitoring Location INT-001B), and chemical metal cleaning wastes (Monitoring Location INT-001C) occurs during a discharge event, then the Discharger must sample for the final combined effluent at Monitoring Location EFF-001 during the duration of such discharge, and state so under penalty of perjury in the corresponding monitoring report.

B. Monitoring Location INT-001A and INT-001B

1. The Discharger shall monitor low volume wastes[6] at Monitoring Location INT-001A and boiler blowdown at Monitoring Location INT-001B as follows.

Table E-3. Low Volume Wastes (Monitoring Location INT-001A and INT-001B)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	MGD	--	1/Month	[1, 2]
pH	standard units	Grab	1/Month	[1, 2]
Total Suspended Solids[3]	mg/L	Grab/24-hour Composite[7]	1/Month	[1, 2]
Oil and Grease[3]	mg/L	Grab	1/Month	[1, 2]
Chromium (VI) [3,4]	µg/L	Grab	1/Month	[1, 2]
Copper, Total Recoverable[3]	µg/L	Grab/24-hour Composite[7]	1/Month	[1, 2]
Mercury, Total Recoverable[3]	µg/L	Grab/24-hour Composite[7]	1/Month	[1, 2]
PCBs(as Aroclors)[5]	µg/L	Grab24-hour Composite[7]	2/Year[8]	[1,2]
Ocean Plan Table 1 Pollutants (excluding Toxicity)	µg/L	Grab/24-hour Composite[7]	2/Year[8]	[1]

1. 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 that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods utilized must be approved by this Regional Water Board or the State Water Board.
2. If no discharge occurred during the month, the report shall so state.
3. The mass emission (lbs/day) for the discharge shall be calculated and reported using the actual concentration and the actual flow rate measured at the time of discharge, using the formula:

   $$M\ (lb/day) = C \times Q_m \times 0.00834$$

   Where:

   M = mass discharge for a pollutant, lbs/day

   C = actual concentration for a pollutant, µg/L

   Q_m = actual discharge flow rate, MGD
4. The Discharger may at their option meet this limitation as a total chromium limitation
5. 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.
6. Low volume wastes collectively treated in the north and south retention basins, that includes boiler condensated overboard, reverse osmosis reject water, softerner regeneration wastes, wastewater from north and west yard drains, equipment wash water collected in floor drains, and storm water collected in yard drains.
7. Where a composite sample for the parameter is not appropriate as specified in the respective analytical method in 40 C.F.R. Part 136 or in other EPA methods, a grab sample shall be obtained in lieu of the 24-hour composite sample for that parameter.
8. Monitoring once per semiannual period (January – June, July – December).

C. Monitoring Locations INT-001C

1. The Discharger shall monitor chemical metal cleaning wastes[6] at Monitoring Location INT-001C as follows.

Table E-4. Chemical Metal Cleaning Wastes (Monitoring Locations INT-001C)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	MGD	--	1/Month	[1, 2]
pH	standard units	Grab	1/Month	[1, 2]
Total Suspended Solids[3]	mg/L	Grab/24-hour Composite[7]	1/Month	[1, 2]
Oil and Grease[3]	mg/L	Grab	1/Month	[1, 2]
Chromium (VI) [3,4]	µg/L,	Grab	1/Month	[1, 2]
Copper, Total Recoverable[3]	µg/L,	Grab/24-hour Composite[7]	1/Month	[1, 2]
Iron, Total Recoverable[3]	mg/L	Grab/24-hour Composite[7]	1/Month	[1, 2]
Mercury, Total Recoverable[3]	µg/L,	Grab/24-hour Composite[7]	1/Month	[1, 2]
PCBs[5]	µg/L	Grab/24-hour Composite[7]	2/Year[8]	[1, 2]
Ocean Plan Table 1 Pollutants (excluding Toxicity)	µg/L	Grab/24-hour Composite[7]	2Year[8]	[1]

1. 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 that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods utilized must be approved by this Regional Water Board or the State Water Board.
2. If no discharge occurred during the month, the report shall so state.
3. The mass emission (lbs/day) for the discharge shall be calculated and reported using the actual concentration and the actual flow rate measured at the time of discharge, using the formula:

   $$M \text{ (lb/day)} = C \times Q_m \times 0.00834$$

   Where:

   M = mass discharge for a pollutant, lbs/day

   C = actual concentration for a pollutant, µg/L

   Q_m = actual discharge flow rate, MGD
4. The Discharger may at their option meet this limitation as a total chromium limitation.
5. 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.
6. Chemical metal cleaning wastes are generated when Facility equipment require chemical-based cleanings to remove scale, rust, and corrosion accumulated during normal operation and generate chemical metal cleaning wastes.
7. Where a composite sample for the parameter is not appropriate as specified in the respective analytical method in 40 C.F.R. Part 136 or in other EPA methods, a grab sample shall be obtained in lieu of the 24-hour composite sample for that parameter.
8. Monitoring once per semiannual period (January – June, July – December).

D. Monitoring for In-Plant Waste Streams (Total)

1. The Discharger shall report the mass emission of all in-plant low volume wastes taken together prior to commingling with once-through cooling water using the calculated sum of mass emissions measured at Monitoring Location INT-001A, INT-001B, and INT-001C as follows:

Table E-5. Total In-plant Waste Streams Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	MGD	--	1/Day[5]	[1, 2]
Chromium (VI)[4]	lbs/day[3]	Calculated[3]	1/Month	[1, 2]
Copper, Total Recoverable	lbs/day[3]	Calculated[3]	1/Month	[1, 2]
Mercury, Total Recoverable	lbs/day[3]	Calculated[3]	1/Month	[1, 2]

1. 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 that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods utilized must be approved by this Regional Water Board or the State Water Board.
2. If no discharge occurred during the month, the report shall so state.
3. The mass emission (lbs/day) from each individual in-plant waste streams shall be calculated and reported using the actual concentration and the actual flow rate measured at the time of discharge from the individual in-plant low volume waste streams (as measured in INT-001A, INT-001B, and INT-001C),using the formula:

   $$M\ (lb/day) = C \times Q \times 0.00834$$

   Where:

   M = mass discharge for a pollutant, lbs/day
   C = actual concentration for a pollutant, µg/L
   Q = actual discharge flow rate, MGD

   The total mass emission of all in-plant waste streams taken together shall be determined as the sum of mass discharges of each parameter in the individual in-plant waste streams.

   Total Mass Emission per day (lb/day) = Mass Emission at INT-001A (lb/day) + Mass Emission at INT-001B (lb/day) + Mass Emission at INT-001C (lb/day)

   The Total Mass Emission per day (lb/day) calculated for each day will be compared with the maximum daily effluent limitations as set forth in Table 8 of this Order for compliance determination; compliance with the 6-month median effluent limitations shall be determined by the median of Total Mass Emission per day values over any 180-day period.
4. The Discharger may at their option meet this limitation as a total chromium limitation.
5. Report flow of each individual low volume waste streams as measured at INT-001A, INT-001B, and INT-001C.

IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Chronic Toxicity

1. Chronic Toxicity of Chlorine Variance Conditions

The chronic toxicity test must be representative of actual discharge conditions (at a minimum) or of the alternate Proposed Modified Effluent Limit (PMEL) of 0.365 mg/L total residual chlorine (TRC). This means that, at a minimum, the effluent samples must be chlorinated in the laboratory to levels consistent with the maximum TRC effluent concentration measured during the previous 3 months' chlorination events. Alternatively, the sample may be chlorinated to the alternate PMEL (unless the maximum TRC concentration from the previous 3 months exceeds this limit). This requirement to

chlorinate samples in the laboratory applies only if the recorded effluent chlorine concentrations exceed the BAT limit of 0.2 mg/L during the previous 3 months.

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

The chronic toxicity IWC for this discharge at Discharge Point 001 is 27.8 percent [100/(2.6+1)] effluent.

3. 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. 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.

4. 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 shall be used to increase sample salinity. 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 topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01).

b. 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).

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

5. Species Sensitivity Screening

Species sensitivity screening shall be conducted during this permit's first three monthly monitoring. For each monthly sampling event, the Discharger shall collect a single effluent sample and concurrently conduct three toxicity tests using the fish, an invertebrate, and the alga species previously referenced. The species that exhibits the highest "Percent Effect" at the discharge IWC during species sensitivity screening shall be used for the routine monthly monitoring.

Species sensitivity rescreening is required every 24 months. The Discharger shall rescreen with the fish, an invertebrate, 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 shall proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

6. 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 determination of "Pass" or "Fail" and "Percent Effect" from a single-effluent concentration chronic toxicity test at the discharge IWC using the Test of Significant Toxicity (TST) approach described 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. The null hypothesis (Ho) for the TST 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.

b. If the effluent toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method, then the Discharger must re-sample and re-test within 14 days.

c. Dilution water and control water, including brine controls, shall be 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. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.). Monthly reference toxicant testing is sufficient.

e. All reference toxicant test results should be reviewed and reported according to EPA guidance on the evaluation of concentration-response relationships found in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 C.F.R. section 136) (EPA 821-B-00-004, 2000).

f. 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).

7. Preparation of Initial Investigation TRE Work Plan

The Discharger shall prepare or update and submit a generic Initial Investigation toxicity reduction evaluation (TRE) Work Plan (1-2 pages) within **90 days** of the permit effective date, to be ready to respond to toxicity events. The Discharger shall review and update this work plan as necessary so it remains current and applicable to the discharge. At minimum, the work plan shall include:

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

b. A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the facility.

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

8. Accelerated Monitoring Schedule for Median Monthly Summary Result: "Fail" (or Maximum Daily Single Result: "Fail and % Effect ≥50")

The summary result shall be used when there is discharge more than one day in a calendar month. The single result shall be used when there is discharge of only one day in a calendar month.

Within 24 hours of the time the Discharger becomes aware of a failing result, the Discharger shall implement an accelerated monitoring schedule consisting of four, five-concentration (including IWC, two dilutions above and two dilutions below IWC) toxicity tests, conducted at approximately two week intervals, over an eight week period. If each of the accelerated toxicity tests at the discharge IWC results in "Pass", the Discharger shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests at the discharge IWC results in "Fail", the Discharger shall immediately implement the Toxicity Reduction Evaluation (TRE) Process conditions set forth below.

9. Toxicity Reduction Evaluation (TRE) Process

a. Preparation and Implementation of Detailed TRE Work Plan. The Discharger shall immediately initiate a TRE using, according to the type of treatment facility*, EPA manual Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002, 1999) or *EPA manual Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989) and, within 30 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:

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

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

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

b. 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, EPA 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.

c. 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.

d. The Discharger shall conduct routine effluent monitoring for the duration of the TRE process. Additional accelerated monitoring and TRE work plans are not required once a TRE is begun.

e. The Regional Water Board recognizes 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.

10. 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, including:

a. The toxicity test results for the TST approach, reported as "Pass" or "Fail" and "Percent Effect" at the chronic toxicity IWC for the discharge.

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

c. TRE/TIE results. The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses.

d. Statistical program (e.g., TST calculator, CETIS, etc.) output results for each toxicity test.

V. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VI. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECEIVING WATER MONITORING REQUIREMENTS

The receiving water monitoring program (i.e., Surface Water Monitoring Requirements and Benthic Sediments Monitoring Requirements) shall consist of periodic biological surveys of the area surrounding the discharge, and shall include studies of those physical and chemical characteristics of the receiving waters which may be impacted by the discharge.

A. Water Quality Monitoring at Monitoring Location RSW-001 through RSW-017

1. The Discharger shall monitor the receiving water (Pacific Ocean) at Monitoring Locations RSW-001 through RSW-005 as follows:

Table E-6. Receiving Water Monitoring Requirements (Monitoring Locations RSW-001 through RSW-005).

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Color (Chlorophyll A and/or Color Dissolved Organic Matter [CDOM])	µg/L, mV or fluorescence units	Profile[4]	2/Year[1]	[2]
Light transmittance	Percent	Profile[4]	2/Year[1]	[2]
Salinity	ppt	Profile[4]	2/Year[1]	[2]
Dissolved Oxygen[3]	mg/L	Grab	2/Year[1]	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH[3]	pH units	Grab	2/Year[1]	[2]
Temperature[3]	ºF	Grab	2/Year[1]	[2]

1. Twice yearly monitoring shall include both a summer monitoring event and a winter monitoring event. Each monitoring event shall include both a flood tide and ebb tide sample or measurement.
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 (2012) that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.
3. Dissolved oxygen, pH, and temperature shall be collected at the surface.
4. Color, light transmittance, and salinity shall be measured at surface, mid-depth, and bottom at a minimum at each station.

2. The Discharger shall monitor the Pacific Ocean at Monitoring Locations RSW-006 through RSW-017 as follows:

Table E-7. Receiving Water Monitoring Requirements (Monitoring Locations RSW-006 through RSW-017).

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Color (Chlorophyll A and/or Color Dissolved Organic Matter [CDOM])	µg/L, mV or fluorescence units	Profile[3]	2/Year[1]	[2]
Light transmittance	Percent	Profile[3]	2/Year[1]	[2]
Salinity	ppt	Profile[3]	2/Year[1]	[2]
Dissolved Oxygen	mg/L	Profile[3]	2/Year[1]	[2]
pH	pH units	Profile[3]	2/Year[1]	[2]
Temperature	ºF	Profile[3]	2/Year[1]	[2]

1. Twice yearly monitoring shall include both a summer monitoring event and a winter monitoring event. Each monitoring event shall include both a flood tide and ebb tide sample or measurement.
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 (2012) that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.
3. Temperature shall be measured from surface to bottom at a minimum of one-meter intervals at each station. Color, dissolved oxygen, light transmittance, salinity, and pH shall be measured at the surface, mid-depth, and bottom at a minimum each station.

3. The following visual observations or measurements at Monitoring Locations RSW-001 through RSW-017 shall be reported:

a. Tidal stage and time of monitoring.

b. General water conditions

c. Color of the water.

d. Appearance of oil films or grease, or floatable material.

e. Extent of visible turbidity or color patches.

f. Direction of tidal flow.

g. Description of odor, if any, of the receiving water.

h. Depth at each station for each sampling period.

i. Presence or absence of red tide.

j. Presence and activity of marine life.

k. Presence and activity of the California Least Tern and the California Brown Pelican.

B. Benthic Sediment Monitoring (Monitoring Locations BEN-001 through BEN-005)

1. The Discharger shall collect and analyze benthic samples once per year during the summer at Monitoring Locations BEN-001 through BEN-005 as follows:

Table E-8. Benthic Sediment Monitoring Requirements (BEN-001 through BEN-005)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Benthic Infauna Community[2]	--	0.1 square meter Van Veen grab	1/Year
Sediment Grain Size	Phi size	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Ammonia as Nitrogen	mg/L	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Arsenic	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Beryllium	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Cadmium	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Copper	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Chromium (III)	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Chromium, Total	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Lead	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Mercury	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Nickel	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Selenium	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Silver	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Thallium	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Zinc	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year

Parameter	Units	Sample Type	Minimum Sampling Frequency
Acid Volatile Sulfides	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
PAHs[4]	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Total PCB[5]	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Chlorinated Hydrocarbons[6]	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Organophosphate Pesticides[7]	µg/kg[1]	0.1 square meter Van Veen grab (upper 2 centimeters)[3]	1/Year
Visual Observations[8]	--	Visual	1/Year

1. Dry weight basis.

2. One sample shall be taken at each station for benthic infaunal community analysis. The entire contents of each sample shall be passed through a 1.0 millimeter screen to retrieve the benthic organisms. Sampling methods and protocols shall follow those described in the most current edition of the *Field Operations Manual for Marine Water Column, Benthic and Trawl Monitoring in Southern California*. All organisms contained within the sample shall be identified to the lowest possible taxon and counted. The resulting data shall be used to describe community structure at each station.

   Procedures and test methods shall adhere to the following federal guidelines when applicable: Macroinvertebrate Field and Laboratory Methods for Evaluation the Biological Integrity of Surface Waters (1990) –EPA/600/4-90/030 (PB91-171363). This manual describes guidelines and standardized procedures for the use of macroinvertebrates in evaluating the biological integrity of surface waters.

   Community analysis of benthic infauna shall include number of species, number of individuals per species, total numerical abundance per station, benthic response index (BRI) and biological indices, plus utilize appropriate regression analyses, parametric and nonparametric statistics, and multivariate techniques or other appropriate analytical techniques.

3. A separate grab sample shall be collected at each station whenever a biological sample is collected. Sub-samples (upper two centimeters) shall be taken from the grab for sediment chemistry analyses.

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[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene.

5. Total PCB (polychlorinated biphenyls) 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. Chlorinated Hydrocarbons shall mean aldrin, chlordane (cis and trans), dacthal, DDT (o,p' DDD, p,p' DDD, o,p' DDE, p,p' DDE, o,p' DDT, p,p' DDT), dieldrin, endosulfan I, endosulfan II, endosulfan sulfate, endrin, endrin aldehyde, HCH (alpha, beta and gamma), heptachlor, heptachlor epoxide, hexachlorobenzene, methoxychlor, mirex, nonachlor (cis and trans), oxadiazon, oxychlordane, and toxaphene.

7. Organophosphate Pesticides (OP) shall mean mevinphos, ethoprop, sulfotep, phorate, diazinon, disulfoton, dimethoate, fenchlorphos, parathion (ethyl and methyl), chlorpyrifos, malathion, prothiofos, tetrachlorvinphos, methidathion, sulprofos, phosmet, azinphos (ethyl and methyl), coumaphos, demeton, thionazin, dichlorofenthion, fenitrothion, chlorfenvinphos, ethion, famphur, leptophos, terbufos, fonophos, trichloronate, fenthion, carbophenothion, fensulfothion.

8. The following general observations or measurements at the benthic stations shall be reported:

   - Tidal stage and time of monitoring.
   - General water conditions.

- Extent of visible turbidity or color patches.
- Appearance of oil films or grease, or floatable material.
- Depth at each station for each sampling period
- Presence or absence of red tide.
- Presence of marine life.

C. Bioaccumulation Monitoring (Monitoring Location MUS-001)

1. Native California mussels (*Mytilus Californianus*) shall be collected during the summer from the discharge conduit, as close to the point of discharge as possible, for bioaccumulation monitoring. If mussels are unavailable near the discharge site, source mussels may be transplanted from nearby locations. Mussel tissue shall be analyzed for the parameters listed in the Table below.

Table E-9. Mussels Bioaccumulation (Monitoring Location MUS-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Arsenic	µg/kg	Tissue	1/ 2 Year	[1]
Beryllium	µg/kg	Tissue	1/ 2 Year	[1]
Cadmium	µg/kg	Tissue	1/ 2 Year	[1]
Copper	µg/kg	Tissue	1/ 2 Year	[1]
Chromium, Total	µg/kg	Tissue	1/ 2 Year	[1]
Chromium (III)	µg/kg	Tissue	1/ 2 Year	[1]
Lead	µg/kg	Tissue	1/ 2 Year	[1]
Mercury	µg/kg	Tissue	1/ 2 Year	[1]
Nickel	µg/kg	Tissue	1/ 2 Year	[1]
Selenium	µg/kg	Tissue	1/ 2 Year	[1]
Silver	µg/kg	Tissue	1/ 2 Year	[1]
Thallium	µg/kg	Tissue	1/ 2 Year	[1]
Zinc	µg/kg	Tissue	1/ 2 Year	[1]
Chlorinated Hydrocarbons[2]	µg/kg	Tissue	1/ 2 Year	[1]
Organophosphate Pesticides[3]	µg/kg	Tissue	1/ 2 Year	[1]
PAHs[4]	µg/kg	Tissue	1/ 2 Year	[1]

1. Procedures used to determine compliance with bioaccumulation monitoring should use the *USEPA. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories* (November 2000, EPA 823-B-00-007), NOAA Technical Memorandum NOS ORCA 130, *Sampling and Analytical Methods of the National Status and Trends Program Mussel Watch Project* (1998 update), and/or State Mussel Watch Program, 1987-1993 Data Report, State Water Resources Control Board 94-1WQ.

2. Chlorinated Hydrocarbons shall mean aldrin, chlordane (cis and trans), dacthal, DDT (o,p' DDD, p,p' DDD, o,p' DDE, p,p' DDE, o,p' DDT, p,p' DDT), dieldrin, endosulfan I, endosulfan II, endosulfan sulfate, endrin, endrin aldehyde, HCH (alpha, beta and gamma), heptachlor, heptachlor epoxide, hexachlorobenzene, methoxychlor, mirex, nonachlor (cis and trans), oxadiazon, oxychlordane, and toxaphene.

3 Organophosphate Pesticides (OP) shall mean mevinphos, ethoprop, sulfotep, phorate, diazinon, disulfoton, dimethoate, fenchlorphos, parathion (ethyl and methyl), chlorpyrifos, malathion, prothiofos, tetrachlorvinphos, methidathion, sulprofos, phosmet, azinphos (ethyl and methyl), coumaphos, demeton, thionazin,

dichlorofenthion, fenitrothion, chlorfenvinphos, ethion, famphur, leptophos, terbufos, fonophos, trichloronate, fenthion, carbophenothion, fensulfothion

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[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

D. Impingement Survey at Monitoring Location IMP-001

1. The Discharger shall collect fish and commercially important macroinvertebrates in the intake cooling water at Monitoring Location IMP-001 as follows:

Table E-10. Intake Monitoring at Monitoring Location IMP-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Fish & Macroinvertebrates	--	Grab	1/Quarter[1]	[2]

1. Impingement sampling for fish and commercially important macroinvertebrates shall be conducted at least once per quarter at the intake system for Unit 1 ,2, and 3. Impingement sampling shall coincide with heat treatment.

2. Fish and macroinverbrates shall be identified to the lowest possible taxon. Data reported shall include numerical abundance of each fish and macroinvertebrate species, wet weight of each species (when combined weight of individuals in each species exceeds 0.2 kg), number of individuals in each 1-centimeter size class (based on standard length) for each species and total number of species are collected. When large numbers of given species are collected, length/weight data need only be recorded for 50 individuals and total number and total weight may be estimated based on aliquots samples. Total fish impinged per heat treatment or sampling event shall be reported and data shall be expressed per unit volume water entrained.

E. Trawl Monitoring (Monitoring Locations TRL-001 through TRL-004)

1. The Discharger shall sample by otter trawl at Monitoring Locations TRL-001 through TRL-004 as follows:

a. Sample frequency shall be semi-annually during the winter and summer.

b. Trawl net dimensions shall be as follows:

i. At least a 25 foot throat width.

ii. 1.5 inch mesh-size (body).

iii. 0.5 inch mesh-size (liner in the cod end).

c. Two replicate trawls shall be conducted at each monitoring location for a duration of 10 minutes each at a uniform speed between 2.0 and 2.5 knots.

d. The identity, size (standard length), wet weight, and number of fish in each trawl shall be reported. The number of fish affected by abnormal growth or disease, such as fin erosion, lesions, and papillomas shall be reported. Fish species shall be reported in rank order of abundance and frequency of occurrence for each trawl. The Shannon-Wiener diversity index shall also be computed for each trawl.

e. All commercially important macroinvertebrates shall be identified, enumerated, and reported in the same manner as fish species.

F. Receiving Water Monitoring at Zone of Initial Dilution

The Discharger shall monitor the receiving water (Pacific Ocean) outside of the zone of initial dilution (ZID) within the waste field at Monitoring Locations ZID-001 as follows:

Table E-11. Compliance Monitoring at the Zone of Initial Dilution at Monitoring Location ZID-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
All Table 1 Parameters in the Ocean Plan (Including toxicity)	--	Grab	1/Permit Term[1]	[2]

1. The Discharger shall conduct compliance monitoring at Monitoring Location ZID-001 at least once during the term of this Order at a time of discharge from Discharge Point 001.
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 (2012) that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.

G. Regional Monitoring Program

The Discharger shall participate in regional monitoring activities coordinated by the Southern California Coastal Water Research Project (SCCWRP), and other appropriate agencies approved by the Regional Water Board and USEPA. The intent of regional monitoring activities is to maximize the efforts of all monitoring partners using a cost-effective monitoring design and to best utilize the pooled scientific resources of the region. During these coordinated monitoring efforts, the Discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of wastewater discharges to the Southern California Bight; however, certain core elements shall remain unchanged. Thus, revisions to the routine compliance monitoring program may be made under the direction of the USEPA and Regional Water Board as necessary to accomplish the goal of assessing regional impacts from all contaminant sources; and may include resource exchanges. The most recent bightwide regional monitoring program was conducted in 2013. The next bightwide regional monitoring survey is expected to occur in 2018. The Discharger is expected to participate at levels commensurate with participation in previous surveys.

VIII. OTHER MONITORING REQUIREMENTS

A. Storm Water Monitoring at Monitoring Location EFF-001

For discharges of storm water to Discharge Point 001, the Discharger shall monitor for all Table 1 pollutants from the Ocean Plan. The report must note whether once through cooling water is being discharged when the storm water is released.

Table E-12. Storm Water Monitoring at Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	1/Day[1]	[3]
All Table 1 Parameters in the Ocean Plan (Including toxicity)	--	Grab	1/Discharge Event[2]	[3]

1. Flow shall be recorded during each period of discharge. Periods of no discharge shall also be reported.
2. During periods of extended rainfall, no more than one sample per week (or 7-day period) is required to be collected. Sampling shall be during the first hour of discharge. If, for safety reasons, a sample cannot be obtained during the first hour of discharge, a sample shall be obtained at the first safe opportunity, and the reason for the delay shall be included in the report. If there is no discharge to surface waters, then no

monitoring is required. In that event, the Discharger shall indicate under penalty of perjury in the corresponding monitoring report that no effluent was discharged to surface water during the reporting period.

3. 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 (2012) that is required to demonstrate compliance. Where no methods are specified for a given pollutant, the methods must be approved by this Regional Water Board or the State Water Board.

B. Monitoring for Discharges of Calcareous Material

1. During the discharge of calcareous material (excluding heat treatment discharge) to the receiving waters, the following observations or measurements shall be recorded and reported in the next monitoring report:

a. Date and times of discharge(s).

b. Estimate of the volume and weight of discharge(s).

c. Composition of discharge(s).

d. General water conditions and weather conditions.

e. Appearance and extent of any oil films or grease, floatable materials or odors.

f. Appearance and extent of visible turbidity or color patches.

g. Presence of marine life.

h. Presence and activity of the California least turn and the California brown pelican.

C. Outfall Inspection

The Discharger shall, at least once during the term of this permit, inspect the integrity of and perform maintanence on the ocean outfall structure to prevent restriction of flow or change in flow conditions that may cause deviation from the conditions used to model the mixing zone of the final discharge from the Facility

IX. 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. Quarterly analyses shall be performed during the months of February, May, August, and November. Semiannual analyses shall be performed during the months of May and November. Annual analyses shall be performed during the month of August. Should there be instances when monitoring could not be done during these specified months, the Discharger must notify the Regional Water Board, state the reason why the monitoring could not be conducted, and obtain approval from the Executive Officer for an alternate schedule.

4. 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.

5. 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.

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

7. 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 (SMR's)

1. The Discharger shall electronically submit SMR's using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS Web site 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 monthly SMR's including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. SMR's 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-13. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	January 1, 2016	All	Submit with quarterly SMR
Daily	January 1, 2016	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with quarterly SMR
Monthly	January 1, 2016	1st day of calendar month through last day of calendar month	Submit with quarterly SMR
Quarterly	January 1, 2016	January 1 – March 31 April 1 – June 30 July 1 – September 30 October 1 – December 31	May 1 August 1 November 1 February 1
Semiannually	January 1, 2016	January 1 – June 30 July 1 – December 31	August 1 February 1
Annually	January 1, 2016	January 1 through December 31	February 1

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. section 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.

   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.

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

   d. 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 in Attachment A of this Order. 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 SMR's 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 WDRs; 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 (DMR's)

1. At any time during the term of this permit, the State Water Board or Regional Water Board may notify the Discharger to electronically submit DMR's. On October 1, 2014, notification was given specifically for the electronic submittal of DMRs by the Permittee. The Permittee shall submit DMRs electronically via CIWQS and will discontinue submitting paper DMRs.

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, pollution prevention plans, and pollutant minimization program required by Special Provisions VI.C.2.a., VI.C.3.a., and VI.C.3.b. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in Special Provision VI.C.4a and b. The Discharger shall submit reports in compliance with SMR reporting requirements described in subsection X.B.

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

   a. An Initial Investigation TRE workplan.
   b. An updated Storm Water Pollution Prevention Plan (SWPPP).
   c. An updated Best Management Practices Plan (BMPP).
   d. An updated Spill Control Plan (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.

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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.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	4A562019001
Discharger	NRG California South LP
Name of Facility	Mandalay Generating Station
Facility Address	393 North Harbor Boulevard
	Oxnard, CA 93035
	Ventura County
Facility Contact, Title and Phone	Thomas A. Di Ciolli, Plant Manager, (805) 984-5241
Authorized Person to Sign and Submit Reports	SAME
Mailing Address	393 North Harbor Boulevard, Oxnard, CA 93035
Billing Address	SAME
Type of Facility	Electric Power Generation
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	NA
Recycling Requirements	NA
Facility Permitted Flow	255.3 million gallons per day (MGD)
Facility Design Flow	255.3 MGD
Watershed	Miscellaneous Ventura Coastal Watershed
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean waters

A. NRG California South LP (hereinafter Discharger) is the owner and operator of Mandalay Generating Station (hereinafter Facility), a steam-electric generating facility (SIC Code 4911).

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 wastewater to the Pacific Ocean, a water of the United States. The Discharger was previously regulated by Order 01-057 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0001180 adopted on April 26, 2001, and was scheduled to expire on March 10, 2006. The terms and conditions of the current Order, as per 40 Code of Federal Regulations (CFR) section 122, have been continued and remain in effect until new Waste Discharge Requirements (WDRs) and a National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.

C. In accordance with Title 23, California Code of Regulations (CCR) and Title 40, Code of Federal Regulations (CFR), respectively, the Discharger is required to file an ROWD at least 180 days prior to the expiration of the existing permit. The Discharger filed an ROWD and applied for renewal of its waste discharge requirements (WDRs) and NPDES permit on September 6, 2005. The delay in renewal of the permits for coastal power plants is the result of efforts to develop and implement the Statewide Water Quality Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling. The Policy was adopted on October 1, 2010, and amended on June 18, 2013. Per Los Angeles Regional Board's request, the Discharger filed an updated report of waste discharge and resubmitted an application for reissuance of its WDRs and NPDES permit on January 31, 2014. Supplementary information was requested on October 10, 2014, and October 23, 2014, and was received on November 4, 2014, and November 11, 2014. The application was deemed complete on November 11, 2014. A site visit was conducted on October 14, 2014, to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment and Controls

The Facility consists of three fossil-fueled electric generating units with a total combined generating capacity of approximately 560 megawatts (MW). Units 1 and 2 are steam-electric generating units which use once-through cooling water and each have a rated power generation capacity of 215 MW. Unit 3 is a 130 MW simple-cycle combustion turbine unit which does not utilize once-through cooling water. Wastewater treatment units at the plant consist of three retention basins (i.e., the north, south basins, and metal cleaning waste basins. Low volume wastes generated at Units 1 – 3 are treated in the north and south basins. The metal cleaning waste basin is used to pretreat wastes generated when the metallic surfaces of the Facility systems are cleaned. The Facility discharges once-through cooling water, metal cleaning wastes, and low volume wastes. Process wastewaters are combined with once-through cooling water prior to discharge to a single outfall (i.e., Discharge Point 001) which discharges to the Pacific Ocean. The maximum total permitted discharge through Discharge Point 001 is 255.3 MGD. Internal discharge point designations (INT-001A, INT-001B, and INT-001C) for low volume wastes, metal cleaning wastes, and storm water are based on the discrete location at which these waste streams discharge to the main waste stream and to the outfall.

1. Once-Through Cooling Water

Cooling water for the Facility is withdrawn from the ocean via the Edison Canal (formerly the Mandalay Intake Canal in Order 01-057). The Edison Canal is a man-made channel which extends approximately 2.5 miles from the Facility to Channel Islands Harbor and the Pacific Ocean.

The Facility's intake structure includes the entirety of the canal terminating at the West Channel Islands Boulevard overpass at the entrance to Channel Islands Harbor. In addition to the canal, the intake structure is composed of two angled intake bays, traveling screens, and circulating water pumps. Ocean water from the canal enters the forebay that flows through the two angled intake bays which are each approximately 12 feet wide. The traveling screens are 11.5 feet wide by 21 feet high with ½ inch mesh panels that are arranged parallel to one another. These screens function to prevent organisms and debris from entering the system. Downstream of each screened intake bay are two circulating water pumps rated at approximately 44,000 gallons per minute each. The ROWD indicates that, when all circulating water pumps are in operation, the cooling water system has a combined pumping capacity of approximately 255 MGD.

In addition to the circulating water pumps, there is a single 3,200 gallon per minute low capacity saltwater pump that provides bearing cooling water supply to the combustion turbine (Unit 3) cooling water heat exchanger whenever Unit 3 is in operation. This pump also provides backup pumping capacity to the steam unit bearing cooling water heat exchangers when the steam units are out of service. An emergency diesel powered firewater pump also draws supply water from the intake structure. Although the engine is tested monthly, it is typically disengaged from the pump and no water is withdrawn during these tests.

Marine biofouling of the cooling water conduits and forebay is controlled by heat treatments and chlorine injection. Biofouling is the formation of an insulating layer of slime-producing organisms. During heat treatments, a portion of the heated discharge water is recirculated into the forebay and intake conduits to raise water temperature. This effectively increases the temperature of the circulating water and extircates many encrusting organisms that adhere to cooling structures. Calcareous shell debris accumulates in the intake structure as a result of heat treatments. Shell debris is manually removed from the forebay, collected, and disposed of as a solid waste at an off-site facility.

In addition to biofouling of the intake structure, the use of ocean water as a matrix for heat removal can result in biofouling of conduits and heat-transfer structures within the Facility. Biological growths which accumulate within the structures of the once-through cooling water system reduce the heat transfer efficiency of the condensers. Periodic chlorination of intake water is performed to control biological growths on the condenser tubes.

2. Internal Process Wastes

The Facility is permitted to discharge a number of process wastewaters which are commingled with once-through cooling water prior to discharge. These permitted waste streams include: low volume wastes (i.e., boiler blowdown, boiler condensate overboard, reverse osmosis reject water, softener regeneration wastes, and equipment wash water collected in floor drains), and chemical metal cleaning wastes. The boiler condensate overboard and chemical metal cleaning wastes are intermittent flows. The chemical metal cleaning wastes are transported to an approved disposal site and no discharge of these wastes have occurred since 2001.

a. Low Volume Wastes – Following is a discussion of each of the inplant waste stream that are considered low volume wastes:

i. **Boiler Blowdown.** The buildup of total dissolved solids in the boiler is controlled with boiler blowdown. The sources of impurities in the blowdown are the intake water, internal corrosion of the boiler, and chemicals added to the boiler system to control scale formation, corrosion, pH, and solids deposition. The boiler water quality is normally near that of distilled water. Blowdown is occasionally necessary during normal operation. Start-up and shutdown of the boilers also require the use of blowdown. In addition, blowdown is produced during occasional condenser tube leaks. The flow rate and duration of the discharge of the blowdown can vary considerably. Up to 0.227 MGD of boiler blowdown is discharged without treatment to the main stream line where it is combined with other process water and cooling water prior to it entering the receiving water through Discharge Point 001.

ii. **Boiler Condensate Overboard.** Under normal operating conditions there is no condensate overboard discharge. Condensate overboard discharges, which occur only during unit start-up or during abnormal operating conditions, are primarily composed of condensed steam. Condensate overboard that drains to the pumping station servicing the south and west yard drains is pumped to the retention basins for treatment prior to discharge to the receiving water at Discharge Point 001. During emergency, (i.e., when the boiler condensate overboard needs to be immediately displaced from the equipment) the condensate overboard is discharged to the main stream line, combined with other process water and cooling water then flows through Discharge Point 001 into the receiving water. The discharge of condensate overboard is negligible.

iii. **Reverse Osmosis Reject Water (ROR Water), Softener Regeneration Wastes, and Wastewater from the North and West Yard Drains.** The ROR water (0.003 MGD), softener regeneration wastes (0.13 MGD), and the wastewater from the north and west yard drains are collected in the yard drain sump pumping station. These wastes are pumped to the retention basins then discharged to the receiving water. A portion of the reverse osmosis waste stream is collected by a third party contractor and shipped to an off-site facility for treatment and disposal.

iv. **In-Plant Floor Drains.** Power block floor drains collect equipment wash water, residual oil and detergent. Wastes collected within each power block are treated (i.e., oil skimming and waste stabilization) in the retention basins prior to discharge.

Evaporator Blowdown was included in the the previous Order No. 01-057 as well as in the ROWD. During the site visit on October 14, 2014, the Discharger indicated that the evaporators were removed approximately 5 years ago. Therefore, this waste stream is not included this Order.

b. Metal Cleaning Wastes. Metal cleaning wastes consist of chemical and non-chemical. Both wastes are periodically generated when the metallic surfaces of the Facility systems are cleaned.

Non-chemical metal cleaning wastes are generated when cleaning is conducted manually without the use of chemical cleaning agents. Since the burning of fuel oil to generate electricity is no longer practiced at the Facility, the waste streams associated with the air pre-heaters and boiler firesides were removed in the updated

schematic diagram submitted by the Discharger on March 20, 2015. This permit does not include the waste streams for non-chemical metal cleaning wastes. No effluent limitations nor monitoring requirements were included in this Order.

Chemical metal cleaning wastes are generated when Facility equipment require chemical-based cleanings to remove scale, rust, and corrosion accumulated during normal operation and generate chemical metal cleaning wastes. Chemical metal cleaning wastes are treated with lime in portable baker tanks using a mobile treatment unit. Sludge generated during this process is dewatered with a belt filter press and disposed at an off-site facility. The wastewater is pumped to the north retention basin. Commingled effluent in the north retention basin is discharged to the main stream line, combined with other process water and cooling water then flows to the receiving water at Discharge Point 001. Since 2001, the chemical metal cleaning wastes are collected and transferred off-site for treatment and disposal. However, the Facility retains the capacity to discharge these wastes to the receiving water in the future.

c. Storm Water. All precipitation that falls on the paved portions of the Facility is collected in the yard drains, conveyed to the retention basins for treatment (settling and stabilization) prior to discharge to the main stream line, combined with other process water and cooling water then flows through Discharge Point 001 into the receiving water. The discharges of storm water combined with other process water and cooling water through Discharge Point 001 is covered under this Order.

For discharges of storm water Discharge Point 001 The Discharger shall monitor for all Table 1 pollutants from the Ocean Plan. The report must note whether once through cooling water is being discharged when the storm water is released.

B. Discharge Points and Receiving Waters

The Facility discharges once-through cooling water, other in-plant wastes, and storm water at Discharge Point 001—a concrete- and rock-vetted discharge structure on Mandalay Beach west of the main Facility site and to the Pacific Ocean. Discharge Point 001 is a shallow water discharge location.

Order 01-057 established an initial dilution ratio of 2.6 to 1 (receiving water to effluent) at Discharge Point 001 which has been retained in this Order (refer to Section IV.C.4 of the Fact Sheet for further discussion of the Facility's mixing zone and dilution credit).

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

1. Effluent limitations contained in Order 01-057 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the Order are as follows:

Table F-2. Discharge Point 001 Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation[1]			Monitoring Data (From January 2009 – May 2014)		
		30-day Average	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
pH	s.u.	--	--	6.0 – 9.0	--	--	7.5 – 9.5
Temperature	deg. F	--	--	[3]	--	--	109
Total Residual Chlorine	mg/L	--	--	0.365	--	--	0.28
	lbs/day[2]	--	--	777	--	--	NR
Free Available Chlorine	mg/L	0.2	--	0.5	0.15	--	0.24
	lbs/day[2]	426	--	1,065	NR	--	NR
Arsenic, Total Recoverable	µg/L	21	--	107	5.75	--	5.75
	lbs/day[2]	44.7	--	227.8	NR	--	NR
Cadmium, Total Recoverable	µg/L	3.6	--	14.4	0.199	--	0.199
	lbs/day[2]	7.7	--	30.7	NR	--	NR
Chromium (VI)	µg/L	7.2	--	28.8	4.35	--	4.35
	lbs/day[2]	15.3	--	61.3	NR	--	NR
Copper, Total Recoverable	µg/L	5.6	--	38	5.6	--	7.96
	lbs/day[2]	11.9	--	8.1	NR	--	NR
Lead, Total Recoverable	µg/L	7.2	--	28.8	0.938	--	0.938
	lbs/day[2]	15.3	--	61.3	NR	--	NR
Mercury, Total Recoverable	µg/L	0.143	--	0.575	0.0021	--	0.0021
	lbs/day[2]	0.3	--	1.22	NR	--	NR
Nickel, Total Recoverable	µg/L	18	--	72	1.46	--	1.46
	lbs/day[2]	38.3	--	153	NR	--	NR
Selenium, Total Recoverable	µg/L	54	--	216	0.157	--	0.157
	lbs/day[2]	115	--	460	NR	--	NR
Silver, Total Recoverable	µg/L	2.1	--	9.66	0.49	--	0.49
	lbs/day[2]	4.5	--	20.6	NR	--	NR
Zinc, Total Recoverable	µg/L	51.2	--	267	33.4	--	33.4
	lbs/day[2]	109	--	568	NR	--	NR
Chronic Toxicity	TUc	--	--	3.6	--	--	3.57
Radioactivity	pCi/L	--	--	[4]	--	--	[5]

NR = Not Reported

1. The concentration-based limits are based on the Ocean Plan objectives using a dilution ratio of 2.6 parts seawater to 1 part effluent
2. Mass-based effluent limitations were based on a maximum permitted flow rate of 255.3 MGD.
3. The temperature of the wastes discharged shall not exceed 106°F during normal operation of the Facility. During heat treatment, the temperature of waste discharged shall not exceed 125°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 135°F. Temperature fluctuations during gate adjustment above 125°F shall not last for more than 30 minutes.
4. Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269, California Code of Regulations.
5. As permitted under Order 01-057, annual statements indicating no radioactive materials were used at the Facility were provided in lieu of monitoring.

2. Effluent limitations contained in Order 01-057 for low volume waste discharges (i.e., discharges from the retention basin and from boiler blowdown) and representative monitoring data from the term of the Order are as follows:

Table F-3. Low Volume Wastes Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From January 2009 – May 2014)		
		30-day Average	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
pH	s.u.	--	--	6.0 – 9.0	--	--	6.5 – 9.9
Total Suspended Solids	mg/L	30	--	100	16	--	42
	lbs/day[1]	43	--	143	NR	--	NR
Oil and Grease	mg/L	15	--	20	9.8	--	9.8
	lbs/day[1]	21.5	--	28.7	NR	--	NR

NR = Not Reported

1. Mass-based effluent limitations were based a low volume waste flow rate of 0.172 MGD.

3. Effluent limitations contained in Order 01-057 for metal cleaning waste discharges and representative monitoring data from the term of the Order are as follows:

Table F-4. Metal Cleaning Wastes Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From January 2009 – May 2014)		
		30-day Average	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
pH	s.u	--	--	6.0 – 9.0	[2]		
Total Suspended Solids	mg/L	30	--	100			
	lbs/day	20	--	66.7			
Oil and Grease	mg/L	15	--	20			
	lbs/day	10	--	13.3			
Copper, Total Recoverable	mg/L	1.0	--	1.0			
	lbs/day	0.67	--	0.67			
Iron, Total Recoverable	mg/L	1.0	--	1.0			
	lbs/day	0.67	--	0.67			

1. Mass-based effluent limitations were based a low volume waste flow rate of 0.08 MGD.
2. Chemical and non-chemical metal cleaning wastes were not discharged during the period for which records were reviewed.

D. Compliance Summary

1. Data submitted to the Regional Water Board during the term of Order 01-057 for the period January 2009 through April 2014 indicate that the Discharger has not complied with reporting requirements as outlined in the table below:

Table F-5. Summary of Compliance History

Date	Monitoring Period	Violation Type	Pollutants	Reported Value	Permit Limitation	Units
6/27/2009	2nd Quarter 2010	Daily Max	Temperature	109	106	deg. F
6/27/2009	2nd Quarter 2010	Instantaneous Max	pH	9.5	6.0 – 9.0	s.u.

In addition to the violations of the numeric limitations above, the Discharger has violated monitoring and reporting requirements (i.e., holding times exceedances, deficient reporting for certain parameters and flow). The violations are being evaluated for appropriate enforcement action.

E. Planned Changes

In order to demonstrate compliance with *Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling* (OTC Policy), the Discharger has elected to implement Track 1 compliance measures. Track 1 measures will retire Units 1 and 2 and replacing them with the Puente Power Project (P3) by the December 31, 2020, Policy compliance deadline. The Puente Power Project is a 262 MW natural gas-fired combustion turbine (General Electric 7HA.01) which will be located at the site of the Mandalay Facility. The construction of P3 is expected to occur from October 2018 through June 2020. The compliance with the OTC Policy shall be in accordance with the established compliance date of December 31, 2020.

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 California 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 for point source discharges from this facility to surface waters.

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. Requirements in this Order implement the Basin Plan.

Beneficial uses applicable to the Pacific Ocean at Mandalay Beach are as follows:

Table F-6. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean at Mandalay Beach Mandalay Beach	 Existing: Navigation (NAV); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); rare, threatened, or endangered species (RARE)[1]; and shellfish harvesting (SHELL).
	Nearshore Zone (The zone bounded by the shoreline and a line 1,000 feet from the shoreline or the 30-foot depth contours, whichever is further from the shoreline).	Existing: Industrial service supply (IND); navigation (NAV); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); preservation of biological habitats (BIOL)[2]; rare, threatened, or endangered species (RARE)[1]; migration of aquatic species (MIGR)[3]; spawning, reproduction, and/or early development (SPWN)[3]; and shellfish harvesting (SHELL)
	Offshore Zone	Existing Navigation (NAV); commercial and sport fishing (COMM); marine habitat (MAR); wildlife habitat (WILD); rare, threatened, or endangered species (RARE)[1]; migration of aquatic organisms (MIGR)[3]; spawning, reproduction, and/or early development (SPWN)[3]; and shellfish harvesting (SHELL)

[1] One or more rare species utilizes all ocean, bays, estuaries, and coastal wetlands for foraging and/or nesting.

[2] Areas of Special Biological Significance (along coast from Latigo Point to Laguna Point) and Big Sycamore Canyon and Abalone Cove Ecological Reserves and Point Femin Marine Life Refuge.

[3] Aquatic organisms utilize all bays, estuaries, lagoons, and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.

2. **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. Requirements of this Order implement the Thermal Plan.

3. **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, and 2012. The State Water Board adopted the latest amendment on October 16, 2012, and it became effective on August 19, 2013. 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-7. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
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.

4. **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.

7. **Clean Water Act Section 316(b) – Impingement and Entrainment.** CWA section 316(b) requires that the location, design, construction, and capacity of cooling water intake structures reflect the Best Technology Available for minimizing adverse environmental impacts related to entrainment (drawing organisms into the cooling water system) and impingement (trapping organisms against the intake screens).

   On May 4, 2010 the State Water Board adopted the OTC Policy. The OTC Policy became effective on October 1, 2010. Subsequently, the OTC Policy was amended by the State Water Board on July 19, 2011, and June 18, 2013. The amended OTC Policy became effective on April 2, 2014.

   The OTC Policy establishes technology-based standards to implement federal Clean Water Act section 316(b) and reduce the harmful effects associated with cooling water

intake structures on marine and estuarine life. The OTC Policy applies to existing power plants that currently have the ability to withdraw water from the State's coastal and estuarine waters using a single-pass system, also known as once-through cooling. Closed-cycle wet cooling has been selected as Best Technology Available (BTA).

The OTC Policy requires the owner or operator of an existing power plant comply with either Track 1 or Track 2, below.

a. Track 1. An owner or operator of an *existing power plant* must reduce intake flow rate at each unit, at a minimum, to a level commensurate with that which can be attained by a closed-cycle wet cooling system. A minimum 93 percent reduction in intake flow rate for each unit is required for Track 1 compliance, compared to the unit's design intake flow rate. The through-screen intake velocity must not exceed 0.5 feet per second. The installation of closed cycle dry cooling systems meets the intent and minimum reduction requirements of this compliance alternative.

b. Track 2. If an owner or operator of an *existing power plant* demonstrates to the State Water Board's satisfaction that compliance with Track 1 is not feasible, the owner or operator of an *existing power plant* must reduce impingement mortality and entrainment of marine life for the Facility, on a unit-by-unit basis, to a comparable level to that which would be achieved under Track 1, using operational or structural controls, or both.

All owners or operators of *existing power plants* were required to submit an implementation plan identifying the OTC Policy compliance alternative selected by April 1, 2011. The Discharger submitted its first implementation plan on April 1, 2011. Additional implementation information were submitted on May 14, 2012, and November 7, 2013. According to the first implementation plan, the Discharger indicated that the proposed mechanism to bring units 1 and 2 into OTC compliance would be via Track 2. However, subsequent information submitted indicated that due to uncertainties and other concerns with Track 2 compliance, the Discharger has instead opted for compliance using Track 1. A subsequent letter dated April 23, 2015, indicated that the Discharger continues to pursue the Track 1 alternative of the OTC Policy. The Discharger intends to achieve Track 1 compliance for Units 1 and 2 by retiring them and replacing them with the Puente Power Project (P3) by the December 31, 2020, OTC Policy compliance deadline. The Puente Power Project is a 262 MW natural gas-fired combustion turbine (General Electric 7HA.01) which will be located at the site of the Mandalay Facility. In November 2014, NRG Energy Center Oxnard LLC, an affiliate of the Discharger, was awarded a contract with Southern California Edison (SCE) to replace Units 1 and 2 with P3. NRG Energy Center Oxnard LLC has entered into a 20-year Resource Adequacy Purchase Agreement with SCE. NRG Energy Center Oxnard LLC filled an Application for Certification (AFC) with the California Energy Commission (CEC) on April 15, 2015, and the application for Authority to Construct/Determination of Compliance with the Ventura County Air Pollution Control District (VCAPCD) was filled on March 19, 2015. The permitring process for the P3 from the CEC/VCACPD is expected to be completed in 2017. The construction of P3 is expected to occur from October 2018 through June 2020. Therefore, compliance with the OTC Policy shall be in accordance with the established compliance date of December 31, 2020, and a time schedule is included in the provisions of this Order for OTC compliance.

D. Impaired Water Bodies on CWA 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 has adopted or plans to develop and adopt TMDLs that will specify waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, as appropriate.

On November 12, 2010, U.S.EPA approved California's 2010 Section 303(d) list of impaired waters and disapproved the omission of several water bodies and associated pollutants that meet federal listing requirements. U.S.EPA identified additional water bodies and pollutants for inclusion on the State's 303(d) list. On October 11, 2011, U.S.EPA issued its final decision regarding the waters U.S.EPA added to the State's 303(d) list. The State's 303(d) list includes the Santa Clara River Estuary based on coliform exceedances.

On July 14, 2003, the Regional Water Board adopted Clean-Up and Abatement Order R4-2003-0065 which adopted by reference a total coliform bacteria TMDL, entitled *Total Maximum Daily Loads for Santa Clara River Estuary Beach/Surfers' Knoll, McGrath State Beach, and Mandalay Beach Coliform and Beach Closures* (Total Coliform TMDL) applicable to Mandalay Beach. This TMDL includes a WLA for the Facility stating that the total coliform density not exceed 1,000 MPN/100 mL. This Order includes an effluent limitation and associated compliance monitoring consistent with the requirements and conditions of the TMDL.

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, State Water Resources Control Board's plans and policies, California Ocean Plan, USEPA guidance and regulations, and previous permit provisions. As discussed in Sections IV.B.3 of the Fact Sheet, the discharge of PCBs is prohibited based on the standards applicable to steam-electric generating facilities contained in 40 C.F.R. section 423.12(b)(2).

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 Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category in 40 C.F.R. Part 423.

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 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.

2. Applicable Technology-Based Effluent Limitations

Pursuant to section 306(b)(1) of the CWA, USEPA has established standards of performance for the steam electric power point source category, for existing and new sources at 40 C.F.R section 423. These regulations apply to the Facility as "*an establishment primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel…in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium*" (40 C.F.R section 423.10). Standards of performance for existing facilities (instead of new source performance standards) are applicable to discharges originating from the Facility, because its construction was completed or commenced prior to publication of regulations on November 19, 1982, which proposed standards of performance for the industry. The following are applicable technology-based standards of performance (BPT and BAT) applicable to the Facility from the effluent limitation guidelines (ELGs) for existing sources at 40 C.F.R part 423. The guidelines do not include standards of performance based on BCT.

The table below lists the Facility's waste streams subject to the ELGs for steam electric power generating point sources.

Table F-8. Plant Waste Streams Subject to Effluent Limitation Guidelines

Outfall	Waste Stream	ELG Classification
Discharge Point 001	Once-through cooling water	Once-through cooling water
	Boiler blowdown	Low volume waste
	Boiler condensate overboard	Low volume waste
	Reverse Osmosis and Softener regeneration wastes	Low volume waste
	In-plant floor drains	Low volume waste
	Boiler and other metal surface acid cleaning washes	Chemical metal cleaning waste

ELGs at 40 C.F.R. part 423 contains standards applicable to the following process waters: low volume wastes, fly ash transport water, bottom ash transport water, metal cleaning wastes (both chemical and non-chemical), cooling tower blowdown, and discharges of coal pile runoff. Discharges from the Facility covered under 40 C.F.R. part 423 include low volume wastes, metal cleaning wastes, and once-through cooling water.

a. Standards of Performance Based on BPT

Applicable effluent limitations established on the basis of BPT are summarized as follows:

i. The pH of all discharges, except once-through cooling water, shall be within the range of 6.0 – 9.0 standard units [40 C.F.R section 423.12(b)(1)].

ii. There shall be no discharge of PCB compounds such as those commonly used for transformer fluid [40 C.F.R. section 423.12(b)(2)].

iii. *Low volume wastes* are defined as wastewater sources for which specific limitations are not established by the effluent limitation guidelines at 40 C.F.R. part 423. The quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of the low volume waste sources times the concentration listed in the following table [40 C.F.R. section 423.12(b)(3)]:

Table F-9. BPT Effluent Limitations for Low Volume Wastes

Pollutant or Pollutant Property	Units	BPT Effluent Limitations	
		Average of Daily Values for 30 Consecutive Days Shall Not Exceed[1]	Maximum for Any 1 Day[2]
Total Suspended Solids (TSS)	mg/L	30.0	100.0
Oil and Grease	mg/L	15.0	20.0

[1] Applied as an average monthly (30-day average) limitation.
[2] Applied as a maximum daily limitation.

iv. *Metal cleaning wastes* are defined as any wastewater resulting from cleaning [with or without chemical cleaning compounds] any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning. The quantity of pollutants discharged in metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of metal cleaning wastes times the concentration listed in the following table [40 C.F.R. section 423.12(b)(5)]:

Table F-10. BPT ELGs for Metal Cleaning Wastes (Includes Chemical Metal Cleaning Wastes)

Pollutant or Pollutant Property	Units	BPT Effluent Limitations	
		Average of Daily Values for 30 Consecutive Days Shall Not Exceed[1]	Maximum for Any 1 Day[2]
Total Suspended Solids (TSS)	mg/L	30.0	100.0
Oil and Grease	mg/L	15.0	20.0
Copper, Total	mg/L	1.0	1.0
Iron, Total	mg/L	1.0	1.0

[1] Applied as an average monthly (30-day average) limitation.

[2] Applied as a maximum daily limitation.

v. *Once-through cooling water* is defined as water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat. The quantity of pollutants discharged in once through cooling water shall not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed in the following table: [40 C.F.R. section 423.12(b)(6)]:

Table F-11. BPT Effluent Limitations for Once-Through Cooling Water

Pollutant or Pollutant Property	Units	BPT Effluent Limitations	
		Average Concentration	Maximum Concentration
Free Available Chlorine	mg/L	0.2	0.5

vi. Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Water Board that the units in a particular location cannot operate at or below this level or chlorination [40 C.F.R. section 423.12(b)(8)].

b. Standards of Performance Based on BAT

Applicable effluent limitations established on the basis of BAT are summarized as follows:

i. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid [40 C.F.R section 423.13(a)].

ii. For any plant with a total rated electric generating capacity of 25 or more megawatts:

(a) The quantity of pollutants discharged in once through cooling water from each discharge point shall not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times the concentration listed in the following table [40 C.F.R. section 423.13(b)(1)]:

Table F-12. BAT Effluent Limitations for Once-Through Cooling Water

Pollutant or Pollutant Property	Units	BAT Effluent Limitations
		Maximum Concentration
Total Residual Chlorine	mg/L	0.2

(b) Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the Discharger demonstrates to the permitting authority that discharge for more than two hours per day is required for macroinvertebrate control [40 C.F.R. section 423.13(b)(2)].

iii. The quantity of pollutants discharged in chemical metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of chemical metal cleaning wastes times the concentration listed in the following table [40 C.F.R. section 423.13(e)]:

Table F-13. BAT ELGs for Chemical Metal Cleaning Wastes

Pollutant or Pollutant Property	Units	BAT Effluent Limitations	
		Average of Daily Values for 30 Consecutive Days Shall Not Exceed[1]	Maximum for Any 1 Day[2]
Copper, Total	mg/L	1.0	1.0
Iron, Total	mg/L	1.0	1.0

[1] Applied as an average monthly (30-day average) limitation.
[2] Applied as a maximum daily limitation.

There are no BAT ELGs for nonchemical metal cleaning wastes.

c. Total Residual Chlorine (TRC) Variance

On August 11, 1983, the Discharger submitted a request to USEPA for a variance under Section 301(g) of the CWA from BAT requirements for TRC. In September 1984, the Discharger also requested an Ocean Plan exception for the TRC effluent limitation based on the 1983 Ocean Plan objectives. In July 1988, the State Water Board adopted Resolution 88-80 that granted an exception from the 1983 Ocean Plan for TRC limitations. The Regional Water Board and the State Water Board approved the variance request and forwarded it to the USEPA in August 1988 for concurrence.

On May 23, 1996, the USEPA approved the Discharger's request for a variance from BAT for total residual chlorine pursuant to Section 301(g) of the CWA with the following conditions:

i. The effluent from Discharge Point 001 must meet a limitation [referred to as proposed modified effluent limitation (PMEL)] of 0.365 mg/L total residual chlorine (instantaneous maximum) based on daily sampling at Discharge Point 001 during periods of chlorination.

ii. The effluent from Discharge Point 001 must meet a chronic toxicity limit of 3.6 TUc (daily maximum). The chronic toxicity tests must be representative of the actual discharge conditions (at a minimum) or of the PMEL conditions. This means that, at a minimum, the effluent samples must be chlorinated in

the laboratory to levels consistent with the maximum TRC effluent concentration measured during the previous 3 months' chlorination events. Alternatively, the samples may be chlorinated to the PMEL (unless the maximum TRC concentration from the previous 3 months exceeds the PMEL concentration). This requirement to chlorinate samples in the laboratory applies only if the recorded effluent chlorine concentrations exceed the BAT limit of 0.2 mg/L during the previous 3 months.

iii. In the event the effluent chronic toxicity limitation is exceeded at Discharge Point 001, the Discharger shall increase the monitoring frequency to monthly in accordance with the NPDES permit. If the chronic toxicity limitation is exceeded again during the accelerated monitoring period, the Discharger shall conduct a toxicity reduction evaluation (TRE) to determine the cause of toxicity. The TRE shall be conducted in accordance with USEPA's most current TRE/toxicity identification evaluation (TIE) manuals.

iv. The Dischargers shall conduct a residual chlorine receiving water study in order to assess the impacts of chlorine and chlorine byproducts within the receiving waters during periods of maximum chlorination.

v. The variance can be reviewed and revised by USEPA at any time if subsequent information indicates that the PMEL will not result in compliance with all 301(g) criteria. This information includes, but is not limited to, subsequent chronic toxicity tests, receiving water monitoring data, and TIE/TRE findings indicating that the discharge of TRC at concentrations greater than the BAT limit of 0.2 mg/L results in exceedance of the toxicity limitation.

The Discharger has conducted a number of studies of the Facility's discharge and receiving water environment. The following summarizes these studies and the results of the studies.

i. In 1987, in coordination with the Los Angeles Department of Water and Power, Southern California Edison (the then owner and operator of the Facility; SCE) conducted a study on the concentrations of chlorine measured in the receiving water during a chlorination event at the condensers. This screening study was completed in response to State Water Board concerns prior to the adoption of Resolution 88-80. The study showed that chlorine was not detected outside the zone of initial dilution (ZID) during a chlorination event. The ZID extends approximately 150 feet from the outfall.

ii. In February 1995, the Discharger conducted a study entitled "*Chlorine Sampling Optimization Study*". The purpose of the study was to determine the time during the chlorination cycle of peak residual chlorine concentration in the discharge. This information was used to ensure that compliance monitoring samples for total residual chlorine were collected at the time of highest chlorine level in the Facility's combined effluent.

Chlorination at the Facility varies depending on the time of year. Between March and October, each condenser half is chlorinated for a duration of ten minutes per chlorination event, with chlorination events occurring three times per day. The condenser halves are chlorinated one at a time, and an interval of several minutes occurs between the end of chlorine injection to one half condenser and the start to the next. Once the condensers have been chlorinated, Units 1 & 2, and 3 bearing cooling water heat exchangers are

chlorinated for ten minutes each. Between November and February, the condenser halves and bearing cooling water heat exchangers are chlorinated for ten minutes twice a day.

The test was performed on February 17, 1995. The results showed four distinct peaks that corresponded to the chlorination of each condenser half. The highest chlorine level was noted at forty-four (44) minutes after the start of the chlorination cycle. The Discharger used the result of this study to modify their sampling procedures to ensure that the samples are collected at or near the time of peak chlorine levels in the effluent.

iii. In early 2000, repairs were made to the chlorination system and the "*Chlorine Sampling Optimization Study*" was repeated on September 14, 2000. The results showed six distinct plateaus that correspond to the chlorinating of each condenser half and the two bearing cooling systems. The highest chlorine level is noted six (6) minutes after the start of each respective chlorination cycle. The plateau lasts for about seven minutes. The Discharger has modified the sampling procedures to ensure that samples are collected during peak chlorine levels.

iv. In 1997, the Discharger performed a study of effluent chlorine toxicity. This study was completed in place of the receiving water study required under condition (iv) of USEPA's 301(g) variance from BAT requirements. In a letter dated October 10, 1997, to the Regional Water Board, the Discharger discussed the results of the chronic toxicity tests. Effluent samples were spiked with the BAT chlorine level (0.2 mg/L) and the maximum chlorine levels allowed by the 301(g) variance (0.365 mg/L) in the laboratory. The results indicated that the discharge of chlorine at the maximum allowed 301(g) variance level would not cause chronic toxicity of the effluent to exceed permitted effluent limits. The Discharger indicated that the results of this investigation suggested that an additional receiving water study on the effects of chlorine discharges at the variance level (as required by the USEPA Section 301(g) variance) was not necessary. This effluent study was reviewed by the Regional Water Board and verbally accepted by Board staff as sufficing to meet the requirements of USEPAs variance from BAT requirements.

v. The Discharger also completed a study of the concentrations of chlorine measured in the receiving waters during chlorination. The investigation was completed for SCE and Los Angeles Department of Water and Power. Nine generating stations were grouped according to discharge characteristics and one candidate from each group was chosen for the study. Scattergood Generating Station was chosen as the station representative of the open coastal discharge. Hence, the results from the study at Scattergood were used as a model to characterize chlorine concentrations in the receiving waters at Mandalay (also considered an open coastal discharge). Total chlorine, when detected, was always within the zone of initial dilution during a chlorination event.

The effluent limitation for total residual chlorine based on the 301(g) variance is as follows:

Table F-14. Chlorine Limitations Based on Section 301(g) Variance

Pollutant	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Residual Chlorine[1]	(mg/L)	--	--	--	0.365[2]

[1] If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.

[2] This limit is applicable to the sampling during periods of chlorination. Total residual chlorine may not be discharged from any single generating unit for more than 10 minutes per condenser half per shift. The USEPA and State Water Board approved Ocean Plan Exception utilized a minimum initial dilution of 2.6.

3. Summary of Technology-based Effluent Limitations (TBELs)

The Facility discharges once-through cooling water to the Pacific Ocean via Discharge Point 001. The total flow volume into the Pacific Ocean through Discharge Point 001 is a combination of once-through cooling water and in-plant waste streams that consist of low volume waste source wastewater, as defined in 40 C.F.R. part 423. 40 C.F.R. section 423.12(b)(12) and section 423.13(h) state that in the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property shall not exceed the limitations specified. In order to ensure that the discharge from each individual waste stream is in compliance with 40 C.F.R. Part 423, effluent limitations have been established at the discharge of each waste stream before commingling with other waste streams and being discharged through Discharge Point 001.

As listed in Table F-11 and Table F-12, 40 C.F.R. part 423 prescribed ELGs in the once-through cooling water waste stream for total residual chlorine as a maximum concentration of 0.2 mg/L (as listed in Table F-12), and for free available chlorine as an average concentration of 0.2 mg/L and a maximum concentration of 0.5 mg/L (as listed in Table F-11). Order No. 01-057 implemented the total residual chlorine ELG (maximum concentration) as a daily maximum limitation and the free available chlorine ELGs (average concentration and maximum concentration) as an 30-day average and daily maximum limitation. However, 40 C.F.R. section 423.11 defines average concentration as it relates to chlorine discharge to be “the average of analyses made over a single period of chlorine release which does not exceed two hours”; it did not provide a definition of the term “maximum concentration”. Furthermore, EPA published a document *Technical Development Document for the Proposed Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category* (EPA-821-R-13-002) in 2013, which proposes revisions to the ELGs for the steam electric power generation point source category based on a review of the significant changes in treatment technologies for the industry over the last three decades; Table 1-1 of this document provides a summary of the current steam electric ELGs as codified at 40 C.F.R. part 423, and references the maximum concentration of 0.2 mg/L for total residual chlorine as an instantaneous maximum limitation, and the maximum concentration of 0.5 mg/L and the average concentration of 0.2 mg/L for free available chlorine as an instantaneous maximum and average (over a single chlorine release period) limitation. Therefore, to be consistent with 40 C.F.R. section 423.11 and the 2013 EPA document (EPA -821-R-13-002), this Order is applying the ELGs in the once-through cooling water waste stream for total residual chlorine as an instantaneous maximum effluent limitation

of 0.2 mg/L, and for free available chlorine as an instantaneous maximum effluent limitation of 0.5 mg/L and an average concentration effluent limitation of 0.2 mg/L during the chlorine release period (discharge is limited to 2 hrs/day/unit and simultaneous discharge of chlorine from multiple units is prohibited). Limitations for total residual chlorine and free available chlorine based on ELGs of the once-through cooling water are applied directly as limitations in the combined effluent to Discharge Point 001 with consideration of structural constraints and consistent with Order No. 01-057. The PMEL of 0.365 mg/L for total residual chlorine as authorized by the 301(g) variance approval replaces the ELG concentration of 0.2 mg/L and is applied as an instantaneous maximum limitation for the combined final effluent at Discharge Point 001.

Effluent limitations in 40 C.F.R. section 423.12(b)(11) and section 423.13(g) specify that, "at the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass based limitations" specified in the regulation. Consistent with Order No. 01-057, technology-based effluent limitations in this Order are expressed both as concentration and mass based limitations except for instantaneous maximum limitation and average concentration limitation for total residual and free available chlorine, which will be expressed only in concentration based limits. A mass-based effluent limitation is not appropriate for instantaneous maximum and average concentration effluent limitations for free available chlorine and total residual chlorine because the discharge periods are too short (instantaneous maximum) or are variable (average concentration of chlorination period, which is limited to 10 minutes per day per generating unit) such that they are not translatable to limitations in terms of mass loading per day.

This Order establishes the following technology-based effluent limitations.

a. Discharge Point 001 (Monitoring Location EFF-001)

i. **PCBs.** There shall be no discharge of PCBs. This limitation is based on 40 C.F.R. section 423.12(b)(2). This limitation has been applied in this Order as a Discharge Prohibition.

ii. The Discharger shall maintain compliance with the effluent limitations contained in the following table. The limitation for total residual chlorine is based on the variance from BAT requirements for total residual chlorine approved by EPA pursuant to Section 301(g) of the CWA. The limitation for free available chlorine is based on 40 C.F.R. section 423.12 (b)(6).

Table F-15. Effluent Limitations at Discharge Points 001 (Monitoring Location EFF-001)

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Residual Chlorine[1,4]	mg/L	--	--	--	0.365[2]
Free Available Chlorine[4]	mg/L	--	0.2[3]	--	0.5

[1] If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.

[2.] This limit is applicable to the sampling during periods of chlorination. Total residual chlorine may not be discharged from any single generating unit for more than 10 minutes per condenser half per shift. The limit is based on the 301(g) variance.

[3.] Applied as an average limitation during the chlorine release period.

[4] Discharge is limited to 2 hrs/day/unit. Simultaneous discharge of chlorine from multiple units is prohibited.

b. Low Volume Wastes (Monitoring Locations INT-001A and INT- 001B)

i. **pH.** The pH shall be within the range of 6.0 - 9.0. This limitation is based on 40 C.F.R. section 423.12(b)(1).

ii. **PCBs.** There shall be no discharge of PCBs. This limitation is based on 40 C.F.R. sections 423.12(b)(2) and 423.13(a).

iii. The quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of the low volume waste sources times the concentration listed in the following table. These limitations are based on 40 C.F.R. section 423.12(b)(3).

Table F-16. Effluent Limitations for Low Volume Wastes (Monitoring Locations INT-001A)

Parameter	Units	Effluent Limitations			
		Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L	30.0	100.0	--	--
	lbs/day	215[1]	717[1]	--	--
Oil and Grease	mg/L	15.0	20.0	--	--
	lbs/day	108[1]	143[1]	--	--

1. Mass--based limitations are based on the retention basins flow of 0.86 MGD reported by the Discharger as shown on the schematic water flow and are calculated as follows:

Mass-based limitation (lb/day) = C x Q_m x 0.00834

Where: C = Concentration-based limitations (µg/L)

Qm= Maximum flow for low volume wastes (retention basins)

Table F-17. Effluent Limitations for Low Volume Wastes (Monitoring Locations INT-001B)

Parameter	Units	Effluent Limitations			
		Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L	30.0	100.0	--	--
	lbs/day	57[1]	189[1]	--	--
Oil and Grease	mg/L	15.0	20.0	--	--
	lbs/day	28[1]	38[1]	--	--

1. Mass--based limitations are based on the boiler blowdown flow of 0.227 MGD reported by the Discharger as shown on the schematic water flow and are calculated based on the above mentioned formula.

Mass-based limitation (lb/day) = C x Q_m x 0.00834

Where: C = Concentration-based limitations (µg/L)

Q_m= Maximum flow for low volume wastes (boiler blowdown)

c. Metal Cleaning Wastes (Monitoring Location INT-001C)

i. **pH.** The pH shall be within the range of 6.0 -9.0. This limitation is based on 40 C.F.R. section 423.12(b)(1).

ii. **PCBs.** There shall be no discharge of PCBs. This limitation is based on 40 C.F.R. sections 423.12(b)(2) and 423.13 (a).

iii. The quantity of pollutants discharged from metal cleaning waste sources shall not exceed the quantity determined by multiplying the flow of metal cleaning

wastes times the concentration listed in the following table. These limitations are based on 40 C.F.R. section 423.12(b)(5).

Table F-18. Effluent Limitations for Chemical Metal Cleaning Wastes (Monitoring Location INT - 001C)

Parameter	Units	Effluent Limitations			
		Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
TSS	mg/L	30.0	100.0	--	--
	lbs/day	15[1]	50[1]	--	--
Oil and Grease	mg/L	15.0	20.0	--	--
	lbs/day	8[1]	10[1]	--	--
Copper, Total Recoverable	mg/L	1.0	1.0	--	--
	lbs/day	0.5[1]	0.5[1]	--	--
Iron, Total Recoverable	mg/L	1.0	1.0	--	--
	lbs/day	0.5[1]	0.5[1]	--	--

1. Mass--based limitations are based on the chemical metal cleaning wastes flow of 0.06 MGD reported by the Discharger as shown on the schematic water flow and are calculated as follows:

Mass-based limitation (lb/day) = C x Q_m x 0.008340
Where: C = Concentration-based limitations (µg/L)
Q_m = Maximum flow for chemical metal cleaning wastes.

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

The Basin Plan and Ocean Plan designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters.

a. Basin Plan. The beneficial uses specified in the Basin Plan 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 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 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.1 of this Fact Sheet. The Ocean Plan includes both narrative and numeric water quality objectives applicable to the receiving water.

Table 1 of the Ocean Plan (also 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.

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 Board on September 18, 1975. The Facility, as presently operating, is considered an existing discharge per definition ten of the Thermal Plan.

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 Analysis Methodology

The need for effluent limitations based on water quality objectives in Table 1 of the Ocean Plan was evaluated in accordance with 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 for pollutants which were detected in the effluent and/or included as effluent limitations in Order No. 01-057.

Table F-19. Ocean Plan Water Quality Objectives

Parameter	6-Month Median (µg/L)	Daily Maximum (µg/L)	Instantaneous Maximum (µg/L)	30-Day Average (µg/L)
Arsenic	8	32	80	--
Cadmium	1	4	10	--
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	--
Total Chlorine Residual	2	8	60	--
Ammonia (as N)	600	2,400	6,000	--
Chronic Toxicity	--	0.3	--	--
Antimony	--	--	--	1,200
Thallium	--	--	--	2
Beryllium	--	--	--	0.033
DDT	--	--	--	0.00017
Halomethanes	--	--	--	130
TCDD-Equivalents	--	--	--	3.9×10^{-9}
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.			

According to the 2012 Ocean Plan, the reasonable potential analysis (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. Minimum 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 of the Fact Sheet, Order 01-057 established the minimum initial dilution factor (Dm) for discharges from the Facility at Discharge Point 001 to be 2.6 to 1 (receiving water to effluent) for all parameters. This dilution ratio is based on calculations made by the State Water Board using standard dilution models. This dilution ratio was approved for this facility and transmitted to the Regional Water Board in the State Water Board memorandum dated February 4, 1985.

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 of 2.6 to 1 for Discharge Point 001 established in Order 01-057 will be retained in this Order and applied to the RPA and WQBELs established herein.

c. RPA for Ocean Plan Table 1 Pollutants

Effluent data submitted to the Regional Water Board for the period from January 2009 through May 2014 for Discharge Point 001 was considered in the RPA. The dilution credits applicable to the ocean outfall (2.6 to 1) were 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 discharge demonstrates reasonable potential to cause or contribute to an excursion above an Ocean Plan Table 1 water quality objective for chromium (VI) and copper. Therefore, effluent limitations are established for chromium (VI) and copper.

The Ocean Plan Appendix VI procedures for determining reasonable potential include Step 13 whereby information other than effluent data is considered in determining reasonable potential. The Facility discharges large volumes of chlorinated effluent which poses risk of toxicity to aquatic organisms. For this reason, the discharge has been determined to demonstrate reasonable potential for total residual chlorine and chronic toxicity. As discussed in Sections IV.B.2.c and IV.C.5 of the Fact Sheet, the Discharger has been granted an exception to the Ocean Plan under State Water Board Resolution 88-80 and is instead subject to alternate effluent limitations for total residual chlorine. As stated in the Ocean Plan exception (Resolution 88-80) "*the alternative effluent limitation should result in*

meeting the numeric chlorine receiving water objectives at the edge of the zone of initial dilution allowed by the Ocean Plan".

Based on the evaluation using the RPcalc 2.2 software tool the discharge does not demonstrate reasonable potential for certain parameters in Table 1. Order 01-057 included WQBELs for antimony, arsenic, cadmium, chronic toxicity, lead, nickel, selenium, silver, zinc, and radioactivity. As these parameters resulted in Endpoint 2, the effluent limitations have not been retained in this Order.

For many of the Table 1 parameters, the sampling events yielded non-detects which resulted in Endpoint 3 using the RPcalc 2.2 software tool. Endpoint 3 means the RPA was inconclusive. The Ocean Plan indicates monitoring for the pollutant is required and also indicates any existing effluent limitation for a pollutant shall be retained in the renewed permit. Order 01-057 included effluent limits for mercury which presented Endpoint 3 in the RPA and, therefore, WQBELs for this parameter have been retained in this Order. For all other parameters displaying Endpoint 3 which did not include effluent limitations in Order 01-057, this Order includes monitoring requirements instead of effluent limitations.

A summary of the RPA results is provided below:

Table F-20. RPA Results Summary

Pollutant	Units	n[1]	MEC[2,3]	Most Stringent Criteria	Cs[4]	RPA Endpoint[5]
Objectives for Protection of Marine Aquatic Life						
Arsenic, Total Recoverable	µg/L	10	5.75	8	3	2
Cadmium, Total Recoverable	µg/L	10	0.199	1	0	2
Chromium (Hexavalent), Total Recoverable	µg/L	10	4.35	2	0	1
Copper, Total Recoverable	µg/L	13	7.96	3	2	1
Lead, Total Recoverable	µg/L	10	0.938	2	0	2
Mercury	µg/L	10	<0.05	0.04	0.0005	3
Nickel, Total Recoverable	µg/L	10	1.46	5	0	2
Selenium, Total Recoverable	µg/L	10	0.157	15	0	2
Silver, Total Recoverable	µg/L	10	0.49	0.7	0.16	2
Zinc, Total Recoverable	µg/L	10	33.4	20	8	2
Cyanide	µg/L	3	<7	1	0	3
Total Chlorine Residual	µg/L	643	280	2	0	1[6]
Ammonia	µg/L	5	280	600	0	3
Acute Toxicity	TUa	4	<3.6[7]	0.3	0	3
Chronic Toxicity	TUc	25	3.57	1	0	1[8]
Phenolic Compounds (non-chlorinated)[9]	µg/L	1	<0.046	30	0	3
Chlorinated Phenolics[10]	µg/L	36	<0.37	1	0	3
Endosulfan	µg/L	20	<0.0014	0.009	0	3
Endrin	µg/L	5	<0.0015	0.002	0	3
HCH[11]	µg/L	25	<0.0016	0.004	0	3

Pollutant	Units	n[1]	MEC[2,3]	Most Stringent Criteria	Cs[4]	RPA Endpoint[5]
Objectives for Protection of Human Health – Non-Carcinogens						
Acrolein	µg/L	6	<0.44	220	0	3
Antimony	µg/L	10	0.68	1200	0	2
Bis (2-chloroethoxy) methane	µg/L	6	<0.58	4.4	0	3
Bis (2-chloroisopropyl) ether	µg/L	6	<0.76	1200	0	3
Chlorobenzene	µg/L	6	<0.14	570	0	3
Chromium (III)	µg/L	[12]	--	190,000	0	3
Di-n-butyl-phthalate	µg/L	6	<0.7	3,500	0	3
Dichlorobenzenes	µg/L	18	<0.11	5,100	0	3
Diethyl phthalate	µg/L	6	<0.67	33,000	0	3
Dimethyl phthalate	µg/L	6	<0.63	820,000	0	3
4,6-dinitro-2-methylphenol	µg/L	6	<1.7	220	0	3
2,4-dinitrophenol	µg/L	6	<1.3	4.0	0	3
Ethylbenzene	µg/L	6	<0.14	4,100	0	3
Fluoranthene	µg/L	6	<0.75	15	0	3
Hexachlorocyclopentadiene	µg/L	6	<0.22	58	0	3
Nitrobenzene	µg/L	6	<0.67	4.9	0	3
Thallium	µg/L	10	<0.005	2	0	3
Toluene	µg/L	6	<0.056	85,000	0	3
Tributyltin	µg/L	[12]	--	0.0014	0	3
1,1,1-trichloroethane	µg/L	6	<0.1	540,000	0	3
Objectives for Protection of Human Health – Carcinogens						
Acrylonitrile	µg/L	5	<0.26	0.10	0	3
Aldrin	µg/L	5	<0.001	0.000022	0	3
Benzene	µg/L	6	<0.06	5.9	0	3
Benzidine	µg/L	6	<0.31	0.000069	0	3
Beryllium	µg/L	10	<0.005	0.033	0	3
Bis (2-chloroethyl) ether	µg/L	6	<0.51	0.045	0	3
Bis (2-ethylhexyl) phthalate	µg/L	6	<0.51	3.5	0	3
Carbon tetrachloride	µg/L	6	<0.088	0.90	0	3
Chlordane	µg/L	7	<0.0014	0.000023	0	3
Chlorodibromomethane	µg/L	6	<0.23	8.6	0	3
Chloroform	µg/L	6	<0.1	130	0	3
DDT[13]	µg/L	20	<0.0049	0.00017	0	3
1,4-dichlorobenzene	µg/L	6	<0.072	18	0	3
3,3'-dichlorobenzidine	µg/L	6	<0.62	0.0081	0	3
1,2-dichloroethane	µg/L	6	<0.092	28	0	3
1,1-dichloroethylene	µg/L	6	<0.091	0.9	0	3
Dichlorobromomethane	µg/L	6	<0.073	6.2	0	3
Dichloromethane	µg/L	6	<0.23	450	0	3
1,3-dichloropropene	µg/L	12	<0.036	8.9	0	3
Dieldrin	µg/L	5	<0.0013	0.00004	0	3

Pollutant	Units	n[1]	MEC[2,3]	Most Stringent Criteria	Cs[4]	RPA Endpoint[5]
2,4-dinitrotoluene	µg/L	5	<0.5	2.6	0	3
1,2-diphenylhydrazine	µg/L	5	<0.19	0.16	0	3
Halomethanes[14]	µg/L	24	0.49	130	0	3
Heptachlor	µg/L	5	<0.0017	0.00005	0	3
Heptachlor epoxide	µg/L	5	<0.0016	0.00002	0	3
Hexachlorobenzene	µg/L	5	<0.001	0.00021	0	3
Hexachlorobutadiene	µg/L	6	<0.19	14	0	3
Hexachloroethane	µg/L	6	<0.49	2.5	0	3
Isophorone	µg/L	6	<0.61	730	0	3
N-nitrosodimethylamine	µg/L	6	<0.54	7.3	0	3
N-nitrosodi-N-propylamine	µg/L	6	<0.57	0.38	0	3
N-nitrosodiphenylamine	µg/L	6	<0.66	2.5	0	3
PAHs[15]	µg/L	63	<0.36	0.0088	0	3
PCBs[16]	µg/L	40	<0.031	0.000019	0	3
TCDD equivalents[17]	µg/L	5	$<1.5x10^{-7}$	$3.9x10^{-9}$	0	3
1,1,2,2-tetrachloroethane	µg/L	6	<0.2	2.3	0	3
Tetrachloroethylene	µg/L	6	<0.094	2.0	0	3
Toxaphene	µg/L	5	<0.022	0.00021	0	3
Trichloroethylene	µg/L	[12]	--	27	0	3
1,1,2-trichloroethane	µg/L	6	<0.15	9.4	0	3
2,4,6-trichlorophenol	µg/L	6	<0.6	0.29	0	3
Vinyl chloride	µg/L	6	<0.12	36	0	3

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. Cs - Background Seawater Concentration from Table 3 of the Ocean Plan.
5. End Point 1 – RP determined, limit required, monitoring required.
   End Point 2 – Discharger determined not to have RP, monitoring may be established.
   End Point 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring.
6. Effluent limitation necessary based on Step 13 of Ocean Plan Appendix VI procedures.
7. Results were LC50>100% for all samples.
8. Chronic toxicity possesses reasonable potential based on Step 13 of Ocean Plan and Resolution 88-80 which stipulates that the Discharger's 301(g) exception to Ocean Plan requirements for total residual chlorine is contingent upon the discharge at Discharge Point 001 meeting a chronic toxicity limit of 3.6 TUc as a daily maximum.
9. 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.
10. Chlorinated phenolic compounds represent the sum of 2-chlorophenol; 2,4-dichlorophenol; 2,4,6-trichlorophenol; 4-chloro-3-methylphenol; and pentachlorophenol.
11. HCH shall mean the sum of alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.
12. No data submitted for this constituent.
13. 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.
14. Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

15. 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.
16. 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.
17. 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.

$$\text{Dioxin-TEQ (TCDD Equivalents)} = \Sigma (C_x \times TEF_x)$$

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

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 acute toxicity (if applicable) 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 discussed in Section IV.C.3.b. above, the Dm approved by the State Water Board is 2.6 to 1 for all pollutants.

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

Table F-21. Background Seawater Concentrations (Cs)

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

Section III.C.8.d of the Ocean Plan describes compliance determination for Table 1 pollutants for dischargers that use a large volume of ocean water for once-through cooling and states:

> *"…Effluent concentration values (Ce) shall be determined through the use of equation 1 considering the minimum probable initial dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in equation 3. The mass emission limits will then serve as requirements applied to all in-plant waste streams taken together which discharge into the cooling water flow, except for total chlorine residual, acute [if applicable per Section 3(c)] and chronic toxicity, and instantaneous maximum concentrations in Table 1 shall apply to, and be measured in, the combined final effluent, as adjusted for dilution with ocean water…".*

In accordance with Ocean Plan implementation procedures for dischargers using a large volume of ocean water for once-through cooling, this Order establishes WQBELs applicable to the combined discharge through Discharge Point 001 as concentration-based limitations for all Ocean Plan Table 1 parameters requiring instantaneous maximum limitations, and as both concentration- and mass-based limitations for all Ocean Plan Table 1 parameters requiring 6-month median, average monthly (30-day average), and daily maximum effluent limitations. This Order also establishes WQBELs applicable to the low volume in-plant waste streams as mass-based limitations for all Table 1 parameters requiring 6-month median, average monthly (30-day average), and daily maximum effluent limitations, with compliance determined by the **total in-plant waste streams mass discharge** taken together, which will be calculated as the sum of the mass discharges from the individual in-plant waste streams.

Order 01-057 contained maximum daily and 30-day average (both in concentration and mass-based limits) effluent limitations for chromium (VI), copper, and mercury. Consistent with WQOs contained in the 2012 Ocean Plan, this Order establishes WQBELs for these parameters on a 6-month median-, daily maximum, and instantaneous maximum-basis.

Copper is a pollutant that is included in Ocean Plan Table 1 as well as in the inplant waste streams which discharges into the cooling water. In addition, cooper demonstrated reasonable potential in the RPA analysis. Therefore, this Order establishes both concentration- and mass-based limitations (6-month median and maximum daily), and concentration-based limitations (instantaneous maximum effluent limitation) for copper at Discharge Point 001. This Order also established effluent limitations for cooper for the combined inplant wastes (i.e., low volume wastes and chemical metal cleaning wastes) and the concentration must be monitored at a point prior to comingling with the once-through cooling water

Section III.C.4a. and 4j of the Ocean Plan indicated that effluent limitations for Table 1 pollutants shall be in concentration and also be specified in terms of mass emission rate limitations. Chromium (VI) is an Ocean Plan Table 1 pollutant. Based on the RPA, it also showed reasonable potential. This Order establishes 6-month median and daily maximum in both concentration and mass-based effluent limitations, and concentration-based limitations for instantaneous maximum for chromium (VI) at Discharge Point 001. For mercury, an Ocean Plan Table1 pollutant, the RPA indicated that it was inconclusive. Therefore, this Order included effluent limitations, 6-month median and daily maximum in both concentration and mass-based effluent limitations, and instantaneous maximum in concentration-based limitation for mercury at Discharge Point 001 based on the previous Order No. 01-057 (Appendix VI, page 60, second paragraph of the 2012 Ocean Plan).

The following demonstrates how the WQBELs for copper are established:

For Copper:

At Discharge Point 001:

Compute effluent concentration limitations and values at Discharge Point 001 using the formula :

$$Ce = Co + Dm(Co - Cs)$$

C_e = 3 µg/L + 2.6 (3 µg/L – 2 µg/L) = 5.6 µg/L (6-Month Median)

C_e = 12 µg/L + 2.6 (12 µg/L – 2 µg/L) = 38 µg/L (Daily Maximum)

C_e = 30 µg/L + 2.6 (30 µg/L – 2 µg/L) = 103 µg/L (Instantaneous Maximum)

Compute mass emissionlimitation (lbs/day; (L_e) for Discharge Point 001 using the formula:

$$L_e \text{ (lbs/day)} = C_e \times Q \times 0.00834$$

The mass-based limitations (L_e) applicable at the combined effluent flow at Discharge Point 001 are based on a maximum flow of 255.3 MGD at Monitoring Location EFF-001.

L_e = 5.6 µg/L x (255.3 MGD)x 0.00834 = 11.9 lbs/day (6-Month Median)
L_e = 38 µg/L x (255.3 MGD)x 0.00834 = 80.9 lbs/day (Daily Maximum)

Table F-22. Summary of Final Effluent Limitations for Copper at Discharge Point 001

Pollutant	Units	Effluent Limitations				
		6-month median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	5.6	--	38	--	103
	lbs/day	11.9	--	81	--	

For the Total In-plant Waste Streams (i.e., Low Volume Wastes and Chemical Metal Cleaning Wastes):

As per Section II..C.8.d. of the Ocean Plan, this Order establishes mass limitations for the total in-plant waste streams (low volume wastes and chemical metal cleaning wastes) for Ocean Plan Table 1 parameter (i.e., copper).

Compute maximum mass limitations for the Total In-plant Waste Streams that include Low Volume Wastes [Retention Basins (0.86 MGD) and Boiler Blowdow (0.227 MGD)], and Chemical Metal Cleaning Wastes (0.06 MGD).

Total In-plant Waste Streams Flow = 0.86 + 0.227 + 0.06 = 1.147 MGD

Using the calculated concentration (C_e) above, the mass emission limitations (lbs/day) for the combined inplant wastes (L_t) are as follows:

L_t = 0.00834 x 5.6 µg/L x 1.147 MGD = 0.054 lbs/day (6-Month Median)
L_t = 0.00834 x 38 µg/L x 1.147 MGD =0.364 lbs/day (Daily Maximum)

Table F-23. Summary of Final Effluent Limitations for Copper for the Total In-plant Waste Streams

Pollutant	Units	Effluent Limitations				
		6-month median	Average Monthly (30-Day Average	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	lbs/day	0.054	--	0.364	--	--

5. Total Chlorine Residual

As discussed in Section IV.B.2.c. of the Fact Sheet, Order 01-057 contained a total residual chlorine effluent limitation which was established on the basis of the Discharger's 301(g) variance and an exception to the Ocean Plan granted under State Board Resolution 88-80. The exception allows the Discharger to meet an alternative effluent limitation (formerly referred to as the proposed modified effluent limitation or PMEL) of 0.365 mg/L as an instantaneous maximum. This Order retains the effluent limitation of 0.365 mg/L contained in Order 01-057 and changes the type of limitation from a daily maximum to an instantaneous maximum.

Order 01-057 included a daily maximum limitation for free available chlorine equal to 0.5 mg/L. This Order changes the limitation type to instantaneous maximum which is how the ELG is expressed. The new limitation in this Order is more stringent than in the previous Order.

Order 01-057 contained mass-based effluent limitations for free available and total residual chlorine. Based on 40 C.F.R. sections 423.12(b)(11), and 423.13(g), at the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass based limitations. This Order, included only concentration limitations for free available and total residual chlorine. The removal of mass based limitations is consistent with anti-backsliding requirements.

6. pH

Order 01-057 contained instantaneous maximum and minimum effluent limitations between 6.0 to 9.0 pH units at all times applicable to the combined effluent at Discharge Point 001. Consistent with Order 01-057 and anti-backsliding requirements, these limitations have been retained in this Order.

7. Temperature

The temperature limitations included in Order 01-057 were based on specific water quality objectives for existing coastal water dischargers in the Thermal Plan and are retained in this Order.

In compliance with the Thermal Plan and in accordance with Regional Water Board specifications, a thermal effect study of the discharge was completed in 1975. The study demonstrated that wastes discharges from the power plant were in compliance with the Thermal Plan and beneficial uses of the receiving waters are protected, as required by

Section 316(a) of the CWA. Thus, the power plant with temperature discharges prescribed in the Order are expected to meet the requirements of the Thermal Plan.

8. Total Coliform Bacteria

As discussed in Section III.D of the Fact Sheet, this Order includes an effluent limitation for total coliform bacteria which is based on a WLA for the Facility contained in the Total Coliform TMDL.

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

Although chronic toxicity data did not demonstrate statistical reasonable potential, Regional Water Board staff has determined that chronic toxicity possesses reasonable potential based on Step 13 (other available information) from the Ocean Plan and the special terms and conditions required in the CWA 301(g) variance for chlorine, which is contingent upon the discharge at Discharge Point 001 meeting a chronic toxicity limit of 3.6 TUc as a daily maximum. As mentioned below, the chronic toxicity limitation in this Order implements the USEPA's 2010 Test of Significant Toxicity (TST) statistical approach. The chronic toxicity effluent limitations in this Order are as stringent as necessary to protect the Ocean Plan Water Quality Objective for chronic toxicity.

The Ocean Plan establishes a daily maximum chronic toxicity objective of 1.0 TUc = 100/NOEC, using a 5-concentration hypothesis test. In 2010, USEPA endorsed the peer-reviewed Test of Significant Toxicity (TST) statistical approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) as an improved statistical tool to evaluate data from USEPA's toxicity test methods. The TST statistical approach more reliably identifies toxicity—in relation to the chronic (0.25 or more) and acute (0.20 or more) mean responses of regulatory management concern—than the current NOEC hypothesis-testing approach used in the Ocean Plan. TST results are also more transparent than the point estimate model approach used for acute toxicity in the Ocean Plan that is not designed to address the question of statistical uncertainty around the modeled toxicity test result in relation to the effect level of concern. The TST is the superior approach for addressing statistical uncertainty when used in combination with USEPA's toxicity test methods and is implemented in federal permits issued by USEPA Region 9.

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 a single-concentration 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/(2.6+1) = 27.78 percent effluent.

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 effluent limitations for arsenic, cadmium, lead, nickel, selenium, silver, and zinc. The effluent limitations for these pollutants have been removed from the Order. This relaxation of effluent limitations is consistent with the anti-backsliding exceptions of the CWA and federal regulations.

Section 402(o)(2)(B) states that effluent limitations may be less stringent in instances when information is available which was not available at the time of 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 effluent limitations for parameters at Discharge Point 001 which displayed Endpoint 2 (i.e., did not display reasonable potential to cause or contribute to an excursion above water quality objectives) have been removed pursuant to this exception. These parameters include antimony, arsenic, cadmium, lead, nickel, selenium, silver, and zinc. Effluent limitations included in the permit were established based on the 2012 Ocean Plan procedures and objectives. As such, the protection afforded under this Order results in an equal level of protection of beneficial uses to the conditions included in Order 01-057.

Effluent limitations for chromium (VI) and copper, which showed reasonable potential have been established in this Order. For mercury, which displayed Endpoint 3, effluent limitations have been retained in this Order. Order No. 01-057 included average monthly and maximum daily limitations for these parameters as concentration- and mass-based effluent limitations. However, limitations for these parameters have been changed in this Order to be consistent with implementation procedures contained in the 2012 Ocean Plan, as discussed in section VI.C.4 of this Fact Sheet. This Order applies six-month median and maximum daily effluent limitations for these pollutants as both concentration-based and mass-based effluent limitations at the combined effluent at Discharge Point 001; the instantaneous maximum effluent limitations for these pollutants are applied as a concentration-based effluent limitations. In addition, 6-month median and maximum daily mass-based effluent limitations for these parameters are applied to the total mass discharge of all the in-plant waste streams taken together. In addition, the mass-based effluent limitation for daily maximum for copper in Order No. 01-057 was incorrect (typographical error) which was 8.1 lbs/day instead of 81 lbs/day. This Order included 81 lbs/day mass-based limitation for daily maximum for copper. Therefore, the limitations for these parameters are consistent with anti-backsliding requirements and are at least as stringent as those in Order No. 01-057.

The ELGs (average and maximum limitations) as specified in 40 C.F.R. part 423 for free available chlorine and total residual chlorine were included in Order No. 01-057 as 30-day average and daily maximum limitations. As explained in section IV.B.3 of this Fact Sheet, this Order instead implements the average and maximum limitations for free available chlorine and total residual chlorine as average concentration effluent limitation and instantaneous maximum limitations, to be consistent with 40 C.F.R. section 423.11 and the 2013 EPA document (EPA-821-R-13-002). Therefore, the limitations for these

parameters are consistent with anti-backsliding requirements and are at least as stringent as those in Order No. 01-057.

2. Antidegradation Policies

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. Resolution 68-16 incorporates 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 and the Ocean Plan implement, and incorporate 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 Facility continues to provide treatment consisting of settling or retention basins. This Order includes storm water from the paved portions of the Facility collected in the yard drains, conveyed to the retention basins for treatment, and is subjected to applicable effluent limtiations at the internal waste stream. In addition, it does not result in any increase of the permitted waste flow from the Facility to the receiving water. The final limitations in this Order, which include concentration based and mass based limitations, hold the discharger to performance levels that will not cause or contribute to water quality impairment or degradation of water quality. The removal of effluent limitations for arsenic, cadmium, lead, nickel, selenium, silver, and zinc will not allow degradation of the receiving water because these pollutants are present in the effluent at levels below background concentrations or at very low concentrations after considering the allowable dilution factor and the volume of the discharge. Therefore, the permitted discharge is consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

As discussed in section IV.B.2.c of the Fact Sheet, Order No. 01-057 contained a total residual chlorine Proposed Modified Effluent limit (PMEL) which was established based on the Discharger's 301(g) variance and an exception to the Ocean Plan granted under State Board Resolution 88-80. The exception allows the Discharger to meet the PMEL of 0.365 mg/L as an instantaneous maximum. Order No. 01-057 applied this limitations as a maximum daily limitation. This Order retains the PMEL contained in Order No. 01-057. However, this Order implements the PMEL as an instantaneous maximum limitation, which is consistent with the 301(g) variance and the 2013 EPA document (EPA-821-R-13-002) as explained in section IV.B.3 of this Fact Sheet, and is also consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on free available chlorine in once-through cooling water; oil and grease and TSS in low volume wastes; oil and grease, TSS, copper, and iron in metal cleaning wastes; and PCBs on all wastewater sources. Restrictions on these pollutants are discussed in Section IV.B.3. of the Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

Water quality-based effluent limitations 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 are based on the Ocean Plan, most recently amended August 19, 2013. 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.

4. Summary of Final Effluent Limitations

a. Table F-24 provides a summary of the final effluent limitations for Discharge Point No. 001.

Table F-24. Summary of Final Effluent Limitations for Discharge Point No. 001

Pollutant	Units	Effluent Limitations					
		6-Month Median	Average Concentration	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Rationale[1]
pH	pH Units	--	--	--	6.0	9.0	P, OP
Temperature	°F	[2]					P, TP
Chronic Toxicity[3]	Pass or Fail, % Effect (for the TST approach)	--		Pass or % Effect <50	--	--	OP, BPJ,
Free Available Chlorine[4]	mg/L	--	0.2[5]		--	0.5	P, ELG
Total Residual Chlorine[4,7]	mg/L	--	--	--	--	0.365[6]	P, 301(g), ELG
Total Coliform	MPN/100 mL	--	--	--	--	1,000	TMDL
Chromium (VI)[8]	µg/L	7.2	--	28.8	--	72	OP
	lbs/day[9]	15.3	--	61.3	--		
Copper, Total Recoverable	µg/L	5.6	--	38	--	103	OP
	lbs/day[9]	11.9	--	81	--		
Mercury, Total Recoverable	µg/L	0.143		0.575	--	103	P, OP
	lbs/day[9]	0.3		1.22	--		
PCBs[10]	µg/L	[11]					P, ELG
Radioactivity	pCi/L	[12]					P, OP

1. P = Previous Order No. 01-057; OP = Ocean Plan (2012) objectives using a dilution ratio of 2.6 part seawater to 1 part effluent; ELG = Effluent Limitation Guidelines and Standards (40 C.F.R. part 423); TP = Thermal Plan; TMDL = Total Coliform TMDL; 301(g) = 301(g) Variance and State Water Board Resolution 88-80; BPJ = Best Professional Judgment.
2. The temperature of the wastes discharged shall not exceed 106°F during normal operation of the Facility. During heat treatment, the temperature of waste discharged shall not exceed 125°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 135°F. Temperature fluctuations during gate adjustment above 125°F shall not last for more than 30 minutes.
3. Chronic toxicity shall be reported as “Pass” or “Fail” and “% Effect” for the maximum daily effluent limitation (MDEL).
4. Discharge is limited to 2 hrs/day/unit. Simultaneous discharge of chlorine from multiple units is prohibited.
5. Applied as an average concentration limitation during chlorine release.

6. This limit is applicable to the sampling during periods of chlorination. Each condenser half (two in a single unit) is chlorinated for up to 10 minutes per chlorination cycle, and there is a maximum of three chlorination cycles per 24-hour period. Each cycle consists of 10 minutes per condenser half, plus 10 minutes for each of three bearing cooling water heat exchangers. Condenser halves and heat exchangers are chlorinated sequentially during each cycle. For chlorine discharges of up to 10 minutes per condenser half, the instantaneous maximum limit is 0.365 mg/L. For chlorine discharges exceeding 10 minutes, the instantaneous maximum total residual chlorine limitation shall be the BAT limitation of 0.2 mg/L
7. If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.
8. The Discharger may at their option meet this effluent limitation as a total chromium effluent limitation.
9. These mass-based effluent limitations are based on a maximum combined effluent flow from Discharge Point 001 of 255.3 MGD and are calculated using the following formula:

   Mass-based effluent limitation = C * Q * 0.00834

   Where:

   C = Concentration-based effluent limitation (µg/L) calculated in the combined discharge (cooling water and in-plant wastes)

   Q = Maximum discharge flow rate (MGD) = 255.3 MGD of the combined cooling water and low volume wastes discharge to Discharge Point 001.
10. PCBs mean the sum of Aroclor-1016, 1221, 1232, 2342, 1248, 1254, and 1260 when monitoring using USEPA method 608. PCBs mean the sum of 41 congeners when monitoring using USEPA proposed method 1668c. 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 shall be individually quantified.
11. The Discharge of PCBs is prohibited (See Order Prohibitions section III.I).
12. 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.

b. Table F-25 provides a summary of the final effluent limitations for low volume wastes (Monitoring Location INT-001A).

Table F-25. Summary of Final Effluent Limitations for Low Volume Wastes (Monitoring Location INT-001A)

Pollutant	Units	Effluent Limitations					
		6-Month Median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Rationale[1]
pH	pH Units	--	--	--	6.0	9.0	P, ELG
Oil and Grease	mg/L	--	15.0	20.0	--	--	P, ELG
	lbs/day	--	108[2]	143[2]	--	--	
Total Suspended Solids	mg/L	--	30.0	100.0	--	--	P, ELG
	lbs/day	--	215[2]	717[2]	--	--	
PCBs[3]	µg/L	[4]					ELG

1. P = Previous Order No. 01-057; OP = Ocean Plan (2012); ELG = Effluent Limitation Guidelines and Standards (40 C.F.R. part 423).
2. Mass--based limitations are based on the low volume waste (north and south retention basins) flow of 0.86 MGD reported by the Discharger as shown on the schematic water flow and are calculated as follows:

   Mass-based limitation (lb/day) = C x Q_m x 0.00834

   Where: C = Concentration-based limitations (µg/L) as prescribed in 40 C.F.R. Part 423.

   Q_m = 0.86 MGD, the maximum flow for the north and south retention basins low volume wastes at Monitoring Locations INT-001A.

3. PCBs mean the sum of Aroclor-1016, 1221, 1232, 2342, 1248, 1254, and 1260 when monitoring using USEPA method 608. PCBs mean the sum of 41 congeners when monitoring using USEPA proposed method 1668c. 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 shall be individually quantified.
4. The discharge of PCBs is prohibited (See Order Prohibitions section III.I).

c. Table F-26 provides a summary of the final effluent limitations for low volume wastes (Monitoring Location INT-001B).

Table F-26. Summary of Final Effluent Limitations for Boiler Blowdown Low Volume Wastes (Monitoring Location INT-001B)

Pollutant	Units	Effluent Limitations					
		6-Month Median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Rationale[1]
pH	pH Units	--	--	--	6.0	9.0	P, ELG
Oil and Grease	mg/L	--	15.0	20.0	--	--	P, ELG
	lbs/day	--	28[2]	38[2]	--	--	
Total Suspended Solids	mg/L	--	30.0	100.0	--	--	P, ELG
	lbs/day	--	57[2]	189[2]	--	--	
PCBs[3]	µg/L	[4]					ELG

1. P = Previous Order No. 01-057; OP = Ocean Plan (2012); ELG = Effluent Limitation Guidelines and Standards (40 C.F.R. part 423).
2. Mass--based limitations are based on the boiler blowdown low volume waste flow of 0.227 MGD reported by the Discharger as shown on the schematic water flow and are calculated as follows:

   Mass-based limitation (lb/day) = C x Q_m x 0.00834

   Where: C = Concentration-based limitations (µg/L) as prescribed in 40 C.F.R. Part 423.

   Q_m = 0.227 MGD, the maximum flow for boiler blowdown low volume wastes at Monitoring Locations INT-001B.
3. PCBs mean the sum of Aroclor-1016, 1221, 1232, 2342, 1248, 1254, and 1260 when monitoring using USEPA method 608. PCBs mean the sum of 41 congeners when monitoring using USEPA proposed method 1668c. 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 shall be individually quantified.
4. The discharge of PCBs is prohibited (See Order Prohibitions section III.I).

d. Table F-27 provides a summary of the final effluent limitations for chemical metal cleaning wastes (Monitoring Location INT-001C).

Table F-27. Summary of Final Effluent Limitations for Chemical Metal Cleaning Wastes (Monitoring Location INT- 001C)

Pollutant	Units	Effluent Limitations					
		6-Month Median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	Rationale[1]
pH	pH Units	--	--	--	6.0	9.0	P, ELG
Oil and Grease	mg/L	--	15.0	20.0	--	--	P, ELG
	lbs/day	--	8[2]	10[2]	--	--	
Total Suspended Solids	mg/L	--	30.0	100.0	--	--	P, ELG
	lbs/day	--	15[2]	50[2]	--	--	
Copper, Total Recoverable	mg/L	--	1.0	1.0			P, ELG
	lbs/day		0.5[2]	0.5[2]	--	--	
Iron, Total Recoverable	mg/L	--	1.0	1.0	--	--	P, ELG
	lbs/day	--	0.5[2]	0.5[2]			
PCBs[3]	µg/L	[4]					ELG

1. P = Previous Order No. 01-057; OP = Ocean Plan (2012); ELG = Effluent Limitation Guidelines and Standards (40 C.F.R. part 423).
2. Mass--based limitations are based on the chemical metal cleaning wastes flow of 0.06 MGD reported by the Discharger as shown on the schematic water flow and are calculated as follows:
   Mass-based limitation (lb/day) = C x Q_m x 0.00834
   Where: C = Concentration-based limitations (µg/L) as prescribed in 40 C.F.R. Part 423
   Q_m = 0.06 MGD, the maximum flow for chemical metal cleaning wastes at Monitoring Locations INT-001C.
3. PCBs mean the sum of Aroclor-1016, 1221, 1232, 2342, 1248, 1254, and 1260 when monitoring using USEPA method 608. PCBs mean the sum of 41 congeners when monitoring using USEPA proposed method 1668c. 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 shall be individually quantified.
4. The discharge of PCBs is prohibited (See Order Prohibitions section III.I).

e. Table F-28 provides a summary of the final effluent limitations for total in-plant wastes (low voluime wastes and chemical metal cleaning wastes)

The Discharger shall maintain compliance with the following effluent limitations for all in-plant waste streams taken together, with compliance determined by the **sum** of mass discharges measured at Monitoring Location INT-001A, INT-001B, INT-001C, as described in the Monitoring and Reporting Program, Attachment E:

Table F-28. Effluent Limitations for In-plant Wastes[2](Total)

Pollutant	Units	Effluent Limitations					Rationale[1]
		6-month median	Average Monthly (30-Day Average)	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Chromium (VI)[3]	lbs/day[4]	0.069	--	0.276	--	--	OP
Copper, Total Recoverable	lbs/day[4]	0.054	--	0.364	--	--	OP
Mercury, Total Recoverable	lbs/day[4]	0.0014	--	0.0055	--	--	OP

1. OP = Ocean Plan
2. Compliance shall be determined from the sum of mass discharges of each parameter in the individual in-plant waste streams.

   Total Mass Emission per day (lb/day) = Mass Emission at INT-001A (calculated using flow measured at INT-001A) (lb/day) + Mass Emission at INT-001B (calculated using flow measured at INT-001B) (lb/day) + Mass Emission at INT-001C (calculated using flow measured at INT-001C) (lb/day)

   The Total Mass Emission per day(lb/day) value from a single day will be compared with the maximum daily effluent limitations as set forth in this table for compliance determination; compliance with the 6-month median effluent limitations shall be determined by the median of Total Mass Emission per day values over any 180-day period.
3. The Discharger may at their option meet this effluent limitation as a total chromium limitation.
4. The mass-based effluent limitations are based on a maximum combined flow of 1.147 MGD for all in-plant waste streams, and are calculated using the following formula:

   Mass-based effluent limitation (lbs/day)= C * Q * 0.00834

   Where:

   C = Concentration-based effluent limitation (µg/L) calculated in the combined discharge (cooling water and in-plant wastes).

   Q = 1.147 MGD, the maximum total flow of all in-plant waste streams;

   Where: Q = Total combined in-plant waste streams flow = 0.86 + 0.227 + 0.06 = 1.147 MGD

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

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 (section 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 water and are based on the water quality objectives contained in the 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

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.

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 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 CFR 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 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

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

5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable

6. Other Special Provisions

a. Discharges of Storm Water

For discharges of storm water to Discharge Point 001, the Discharger shall monitor for all Table 1 pollutants from the Ocean Plan. The report must note whether once through cooling water is being discharged when the storm water is released.

b. Once-Through Cooling Water Compliance Schedule

Under Track 1 of the OTC Policy, an existing power plant must reduce the intake flow rate to a level commensurate with closed-cycle wet cooling such that the through-screen intake velocity does not exceed 0.5 feet per second.

This Order requires the Discharger to provide annual progress reports to the Regional Water Board to document the Facility's progress towards compliance with the OTC Policy:

Table F-29. Schedule of Compliance with OTC Policy

Task	Compliance Date
1. Submit Workplan for OTC Policy compliance under Track 1.	December 1, 2016
2. Submit first progress report on compliance actions.	December 1, 2017
3. Submit second progress report.	December 1, 2018
4. Submit third progress report.	December 1, 2019
5. Achieve full compliance with Units 1 and 2.	December 31, 2020

c. OTC Policy Immediate and Interim Requirements

The OTC Policy further requires the immediate and interim requirements:

i. As of **October 1, 2011**, the owner or operator of an existing power plant with an offshore intake shall install large organism exclusion devices having a distance between exclusion bars of no greater that nine inches, or install other exclusion devices, deemed equivalent by the State Water Board.

ii. As of **October 1, 2011**, any unit that is not directly engaged in power-generating activities or critical system maintenance shall cease intake flows unless it has been demonstrated to the State Water Board that a reduced minimum flow is necessary for operations

iii. Commencing on **October 1, 2015** and continuing up and until achieving final compliance with the OTC Policy, the owner or operator of the existing power plant must implement measures to mitigate the interim impingement and entrainment impacts resulting from the discharge.

Per the submitted implementation plan and subsequent correspondence, the Discharger indicated that it does not have an offshore intake and therefore the large organism exclusion device requirements do not apply.

With regards to intake flows when the generating units are offline and no longer generating power, the Discharger's implementation plan indicated that the Facility flows (and corresponding operations) are typically concentrated in the hottest summer months, when demand for generation is highest. However, the Facility may be dispatched at any time and there has not been a single month in the last five years where there have been no power generation-related flows, and consumption during the same month varies considerably from year to year. Accordingly, while a discussion of monthly generation trends can indicate when flows are more or less likely to occur during the year based on likely electrical demand, they are only illustrative, and the Discharger cannot guarantee that the annual generation profile in a given year will look exactly the same as another year. Facility operating procedures have been modified as of October 1, 2011, to specifically require circulating water pumps (CWPs) to be removed from service whenever the units are not directly engaged in power-generating activities or critical system maintenance, as such terms are defined in the OTC Policy. The Facility has certain essential equipment that is directly related to power generation, such as air compressors, that continue to operate even if the units are offline, and a low-volume stream bearing cooling water that is required to service this equipment. In addition, the low capacity saltwater pump at the Facility will continue to operate for three to four hours once or twice per day to perform this service. In addition, the Facility discharges its circulating water to the ocean via a rock lined swale that runs across the beach. When the units have been shut down for an extended period of time, it is necessary to place a circulator in service for a short period of time to prevent sand buildup in this swale that would impair operations. These low-volume flows are directly related to power generation and critical system maintenance.

With regards to the mitigating measures, the Discharger has indicated that as of October 1, 2015, and until the Mandalay Generating Station achieves full OTC Policy compliance, it will provide funding to the Coastal Conservancy to be used for mitigation projects directed toward increases in marine life associated with the State's Marine Protected Areas in the local region of the Facility. The amount to be provided shall be determined by the State Water Board.

7. 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

Order 01-057 contained semi-annual monitoring for a variety of metals in the intake water which has not been retained in the MRP (Attachment E). This monitoring was established for use in establishing background concentrations used in calculating effluent limitations for these pollutants. The Ocean Plan has prescribed default background pollutant concentrations for these parameters; therefore, monitoring for these metals in the intake water is no longer necessary.

B. Effluent Monitoring

1. Discharge Point 001

a. Monthly monitoring at a minimum has been established for those pollutants where effluent limitations at Discharge Point 001 (Monitoring Location EFF-00) have been established in the Order (i.e., chromium (VI), copper, mercury). The quarterly monitoring for chronic toxicity has been retained. These monitorings are necessary to determine compliance with effluent limitations and to provide data 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.

b. The monitoring for temperature is continuous, for pH is once per week, and for total residual chlorine and free available chlorine are once per day (during periods of chlorine addition) at 25, 30, and 35 minutes following the start of chlorination and the highest value of the three measurements shall be reported.. These monitoring frequencies have been retained to determine compliance with the effluent limitations.

c. Order 01-057 required monitoring for the remaining priority pollutants once per year. The 2012 Ocean Plan specifies a minimum semiannual monitoring frequency for Table 1 pollutants in discharges greater than 10 MGD. The discharge from the Mandalay Generating Station is greater than 10 MGD. Therefore, the monitoring for the remaining pollutants contained in Table 1 of the Ocean Plan which do not have effluent limitations have a monitoring frequency of two times per year. PCBs and TCDD equivalents are also monitored two times per year. Data generated from these monitoring events are 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.

d. Quarterly monitoring for total coliform, fecal coliform, and enterococcus has been retained in this Order to determine reasonable potential. Low volume wastes from the open retention basins may be a potential source of bacteria.

e. Monitoring for radioactivity and nitrate (as N) of once per year has been retained to determine reasonable potential.

2. Low Volume Wastes and Chemical Metal Cleaning Wastes (Monitoring Locations INT-001A, INT-001B, and INT-001C)

Monitoring requirements for low volume wastes and metal cleaning wastes (chemical metal cleaning wastes) included in Order 01-057 have been retained in the MRP (Attachment E). These monitoring requirements are necessary to determine compliance with effluent limitations established in this MRP (Attachment E). Monitoring for non-chemical metal cleaning wastes was not included in this Order because the activites associated with these waste streams are no longer practiced at the Facility as mentioned in the Findings of this Fact Sheet.

Monthly monitoring has been established in the MRP (Attachment E) for those pollutants where effluent limitations have been established in the Order. In addition, semiannual monitoring for PCBs has been established in order to assess compliance with the prohibition against the discharge of PCBs.

Monitoring of the total mass emission of chromium, copper, and mercury for the in-plant waste streams before combining with once-through cooling water flow. Compliance shall be determined by the total mass emission for each parameters reported, calculated as the sum of the mass emissions from the individual in-plant waste streams as measured in INT-001A, INT-001B, and INT-001C, utilizing the actual flow rates of the individual in-plant waste streams.

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. A chemical at a low concentration can have chronic effects but no acute effects. For this permit, chronic toxicity in the discharge is limited and evaluated using USEPA's 2010 TST statistical approach. The chronic toxicity effluent limitations are as stringent as necessary to protect the Ocean Plan Water Quality Objective for chronic toxicity.

Section III.C.3.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. The Facility has an initial dilution ratio of 2.6 to 1. Therefore, this Order includes monitoring requirements for chronic toxicity in the MRP (Attachment E).

This Order retains additional requirements to treat samples with chlorine to simulate effluent chlorine concentrations greater than BAT levels. This requirement is based on conditions for the 301(g) variance approval stated in USEPA's *Final Analysis of 301(g) Variance Application for the Mandalay Generating Station,* May 23, 1996. The chlorine treatment is only required if any of the effluent chlorine results from the previous three months exceed BAT limitations of 0.2 mg/L.

D. Receiving Water Monitoring

1. Water Quality Monitoring

The monitoring requirements implement the Ocean Plan and follow the monitoring guidance in Appendix III (Standard Monitoring Procedures) of the Ocean Plan. The water quality monitoring requirements are included in the MRP (Attachment E) to determine compliance with the receiving water limitations established in this Order.

2. Benthic Sediments Monitoring

The Mandalay Generating Station draws cooling water from the Edison Canal, which runs past agricultural fields and could receive runoff containing pesticides, and also connects to Channel Islands Harbor, an estuary which could have significant inputs of pesticides from agricultural and stormwater runoff. This permit includes sediment monitoring for chlorinated hydrocarbons and organophosphate pesticides. The monitoring requirements implement the Ocean Plan and follow the monitoring guidance in Appendix III (Standard Monitoring Procedures) of the Ocean Plan. This monitoring is required to determine if benthic conditions are changing over time as a result of the discharge.

3. Bioaccumulation Monitoring

This permit includes bioaccumulation monitoring (with mussels) for chlorinated hydrocarbons and organophosphate pesticides. This local bioaccumulation trends survey is to address the question: "Is mussel tissue contamination in the vicinity of the outfall changing over time?"

4. Trawl Monitoring

Trawls are specialized gear used in large open water areas of reservoirs, lakes large rivers, estuaries, and offshore marine areas. The monitoring requirements are used to gain information on a particular species of fish rather than on overall fish populations. The otter trawl is used to capture near-bottom and bottom fishes.

5. Zone of Initial Dilution (ZID) Monitoring

The Ocean Plan stipulates beneficial uses for ocean waters of the State that shall be protected. The plan enumerates general provisions, bacterial characteristics, physical characteristics, and chemical characteristics of the receiving water. The Ocean Plan also enumerates numerical water quality objectives that are to be met outside of the zone of initial dilution in the receiving water when a dilution ratio is granted. This permit requires monitoring at the edge of the ZID to determine compliance with the water quality objectives for the receiving water and attainment of beneficial uses of the ocean waters as set forth by the provisions of the Ocean Plan.

6. Regional Monitoring Program

NPDES compliance monitoring focuses on the effects of a specific point source discharge. Generally, it is not designed to assess impacts from other sources of pollution (e.g., nonpoint source runoff, aerial fallout) or to evaluate the current status of important ecological resources in the waterbody. The scale of existing compliance monitoring programs does not match the spatial and, to some extent, temporal boundaries of the important physical and biological processes in the ocean. In addition, the spatial coverage provided by compliance monitoring programs is less than ten percent of the nearshore ocean environment. Better technical information is needed about status and trends in ocean waters to guide management and regulatory decisions, to verify the effectiveness of existing programs, and to shape policy on marine environmental protection.

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 compliance monitoring programs for the NRG California South LP (Mandalay Generating Station) and other major ocean dischargers will serve as the framework for the regional monitoring program. However, substantial changes to these programs will be required to fulfill the goals of regional monitoring, while retaining the compliance monitoring component required to evaluate the potential impacts from NPDES discharges.

The regular monitoring for the Southern California Bight has been established, occurring at four- to five-year intervals, and coordinated through the Southern California Coastal Water Research Project (SCCWRP) with dischargers, agencies, and numerous other entities. The Bight regional monitoring programs were funded, in large part, by resource exchanges with the participating discharger agencies. During the year when Bight regional monitoring was scheduled, USEPA and this Regional Board eliminated portions of the routine compliance monitoring programs for that year, while retaining certain critical compliance monitoring elements. A certain percentage of the traditional sampling sites were also retained to maintain continuity of the historical record and to allow comparison of different sampling designs. The exchanged resources were redirected to complete sampling within the regional monitoring program design. Thus, the dischargers' overall level of effort for the 1994, 1998, 2003, 2008 and 2013 pilot programs remained approximately the same as the compliance monitoring programs.

Future regional monitoring programs may be funded in a similar manner. Thus, revisions to the routine compliance monitoring program will be made under the direction of the USEPA and this Regional Board as necessary to accomplish the goal; and may include resource exchanges

7. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Storm Water Monitoring

For discharges of storm water other than at Discharge Point 001, the Discharger shall implement the Monitoring and Reporting Requirements for individual dischargers contained in the general permit for Dischargers of Storm Water Associated with Industrial Activities (State Board Order No. 2014-0057-DWQ, NPDES No. CAS000001, adopted on April 1, 2014).

2. Monitoring for Discharge of Calcareous Material

Monitoring during the discharge of calcareous material (excluding heat treatment discharge) has been retained from Order 01-057. This monitoring is necessary to evaluate the effect of the discharge on the beneficial uses of the receiving water.

3. Algicide Spraying

Order 01-057 contained monitoring requirements for algicide applications on the banks of the intake canal. This monitoring has not been retained in this Order as the Discharger has indicated that this practice has ceased and will not be utilized in the future.

4. Outfall Inspection

The Discharger shall perform periodic inspection, at least once during this permit term, on the integrity of the final discharge ocean outfall structure and perform any maintenance necessary to prevent deviation from the flow conditions used to model the mixing zone of the final discharge from the Facility.

VIII. PUBLIC PARTICIPATION

The Regional Water Board has considered the issuance of WDRs that will serve as an NPDES permit for Mandalay Generating Station. As a step in the WDR adoption process, the 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 provided to all interested persons via newspaper, email and posting in the vicinity of the facility.

The public had access to the agenda and any changes in dates and locations through the Regional Water Board's web site 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 Rosario.Aston@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 17, 2015.**

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 8, 2015**
Time:	**9:00 A.M.**
Location:	**Metropolitan Water District of Southern California, Board Room** **700 North Alameda Street** **Los Angeles, California**

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.

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

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., 30 days after the date of adoption of this Order, 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. Copies of the law and regulations applicable to filing petitions will be provided upon request or may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

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.

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 Rosario Aston at (213) 576-6653.

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 6-months 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 on page G-2.

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 facility operators 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 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

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 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.

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 non-storm water discharges since April 17, 1994. Include toxic chemicals (listed in 40 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 Code of Federal Regulations [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 non-storm water discharges and associated drainage area.

   Non-storm water discharges that contain significant quantities of pollutants or that do not meet the conditions provided in Special Conditions of the general permit for Dischargers of Storm Water Associated with Industrial Activities (State Board Order No. 2014-0057-DWQ, NPDES No. CAS000001, adopted on April 1, 2014) are prohibited by this Permit (Examples

of prohibited non-storm water discharges are contact and non-contact cooling water, rinse water, wash water, etc.). Non-storm water discharges that meet the conditions provided in Special Conditions of the general permit for Dischargers of Storm Water Associated with Industrial Activities are authorized by this Permit. The SWPPP must include BMPs to prevent or reduce contact of non-storm water discharges with significant materials 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.

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 below. The last column of Table B, "Best Management 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. Spills caused by topping off fuel tanks. Hosing or washing down fuel oil fuel area. Leaking storage tanks. Rainfall running off fuel oil, and rainfall running onto and off fueling area.	fuel oil	Use spill and overflow protection. Minimize run-on of storm water into the fueling area. Cover fueling area. 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. Inspect fueling areas regularly to detect problems before they occur. Train employees on proper fueling, cleanup, and spill response techniques.

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.

IX. 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 90 days of the evaluation. 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.B.5 of Attachment D.

X. 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").

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	--	--
2-Nitrophenol	88755	--	10	--	--
4-Nitrophenol	100027	5	10	--	--
Pentachlorophenol	87865	1	5	--	--
Phenanthrene	85018	--	5	0.05	--

Semi-Volatile Chemicals	CAS Number	Minimum* Level (µg/L)			
		GC Method[a]	GCMS MEthod[b]	HPLC Method[c]	COLOR Method[d]
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”).

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., US 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”).