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

ORDER NO. 95-027
NPDES NO. CA0000361

WASTE DISCHARGE REQUIREMENTS FOR CITY OF LOS ANGELES, DEPARTMENT OF WATER AND POWER (Harbor Generating Station)

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

1. City of Los Angeles, Department of Water and Power (Discharger) discharges wastes from the Harbor Generating Station under waste discharge requirements contained in Order No. 90-098, adopted by this Regional Board on July 30, 1990. This Order serves as the National Pollutant Discharge Elimination System (NPDES) permit (CA0000361).

2. The Discharger has filed a Report of Waste Discharge and has applied for renewal of its waste discharge requirements and NPDES permit.

3. The Discharger operates the Harbor Generating Station , a 316 megawatts plant, at 161 North Island Avenue, Wilmington, California (Latitude: 33°46'10"; Longitude: 118°15'56").

   The Discharger modernized certain components of the power plant. The modernization project was initiated in 1990 and completed in January 1994 with start-up in June 1994. It consisted of replacing two steam boilers and steam turbine generators with two combustion (gas) turbine generators with heat recovery boilers. The project also included installation/construction of ancillary facilities: aqueous ammonia storage tanks, resin tanks, acid and caustic storage tanks, sodium hypochlorite tank, and reverse-osmosis filter assemblies. The facility modifications are fully operational.

   At present, the Harbor Generating Station consists of eight generating units: three steam turbine generators and six combustion (gas) turbine generators. Of the three steam boilers and generators, one is in continuous use; one is in stand-by mode for use as backup; and one has been abandoned and will no longer be used. The once-through cooling water

system (including the intake circulating water pumps, condensers and outlet structure) has not been modified; however, with the change of the two steam electric generators to gas generators and the abandonment of the other, once-through cooling water has decreased.

4. The Discharger discharges up to 111.1 million gallons per day (mgd) of wastes consisting of once-through cooling water from the two steam electric generating units, treated chemical metal cleaning wastes (no nonchemical cleaning wastes), and low volume wastes into the West Basin, Los Angeles Harbor, a water of the United States. The wastes are discharged through an outfall (Discharge No. 001) at Latitude: 33°46'01" and Longitude: 118°16'10".

   The cooling water intake is located at the northwest corner of Slip No. 5, Los Angeles Harbor (Latitude: 33°45'57"; Longitude: 118°15'46") and draws ocean water at a depth of 35 feet Mean Lower Low Water (MLLW).

   Figure 1 shows the location map of the facility.

5. Chemical metal cleaning wastes are collected and treated in portable Baker tanks. The treated chemical metal cleaning wastes are sent to a settling sump where they combine with low volume wastes before being discharged to the Los Angeles Harbor through the outfall for the once-through cooling water. Residues in the basins and from chemical cleaning wastes treatment are periodically hauled away to legal disposal sites.

   Figure 2 shows the Schematic Diagram of the Wastewater Flow.

6. To control biological fouling, two separate procedures may be used. In the case when the plant is generating at sufficient capacity, the temperature of the circulating cooling water is increased in the cooling water conduits. During this process, the seawater is drawn from Slip 5 and, after being heated, is discharged through Discharge Serial No. 001. But when there is little steam generation occurring, it is not possible to achieve the necessary elevated temperature for heat treatment and a second procedure is employed. In this second procedure, one of the inlet conduits is isolated and allowed to stand idle for a period of one to two weeks. This results in an oxygen reduction which causes the marine organisms to release their hold on the conduit walls. They are then flushed from the system with normal circulating water flow.

7. The wastes characteristics are as follows:

	Winter	Summer
Average Temperature, °F	59.7	67.5
Maximum Temperature, °F	73.0	75.0
Average Heat Treatment Temperature, °F	---	
Maximum Heat Treatment Temperature, °F	110	

Source of wastes[1]	Average Volume, mgd
Once-through cooling water and heated seawater to control marine fouling	100.800
Cooling water heat exchanger	10.000
Chemical metal cleaning wastes	0.056
Low volume wastes[2]	0.213
Total Maximum Flow (Discharge Serial No. 001)	111.069

[1] Some flows are intermittent.
[2] Consisting of demineralizer regeneration and cycle make-up/RO drains (0.0897 mgd), Unit 1 and 2 air cooler drains (0.120 mgd), and small volumes of rainfall runoff, and miscellaneous floor drains.

8. Section 316(b) of the Federal Clean Water Act (CWA) requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts.

9. On November 19, 1982, the U. S. Environmental Protection Agency (USEPA) promulgated Effluent Guidelines and Standards for the "Steam Electric Power Generating Point Source Category" (40 CFR Part 423). These regulations prescribe effluent limitation guidelines for once-through cooling water and various inplant waste streams.

   40 CFR 423.12(a) provides that effluent limitations either more or less stringent than the USEPA standards may be prescribed if factors relating to the equipment or facilities involved, the process applied, or other such factors are found to be fundamentally different from the factors considered in the establishment of the standards.

10. On March 22, 1990, the State Water Resource Control Board (State Board) adopted a revised Water Quality Control Plan for Ocean Waters of California (Ocean Plan). The Ocean Plan

contains water quality objectives for coastal waters of California. This Order includes effluent and receiving water limitations, prohibitions, and provisions which implement the objectives of the Ocean Plan.

11. On May 18, 1972, (amended on September 18, 1975), the State Board adopted a Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan). The Thermal Plan contains temperature objectives for the Pacific Ocean.

12. On June 13, 1994, the Regional Board adopted an updated Water Quality Control Plan for the Los Angeles Region (Basin Plan). The Water Quality Control Plan incorporates by reference State Board's water quality control plans for ocean waters, control of temperature, significant State Board policies that are applicable to the Los Angeles Region, and the antidegradation policy.

13. The beneficial uses of the Pacific Ocean are as follows:

Nearshore Zone (Bounded by the shoreline and a line 1,000 feet from the shoreline or the 30-foot depth contour, whichever is farther from shore): Industrial service supply, navigation, water contact and non-water-contact recreation, ocean commercial and sport fishing, preservation of areas of special biological significance, preservation of rare and endangered species, marine habitat, shellfish harvesting, and fish spawning.

Offshore Zone: Industrial service supply, navigation, water-contact and non-water-contact recreation, ocean commercial and sport fishing, preservation of rare and endangered species, marine habitat, and shellfish harvesting.

14. Pursuant to Section 402(p) of the CWA and 40 CFR Parts 122, 123, and 124, the State Board adopted a general NPDES permit to regulate stormwater discharges associated with industrial activity (State Board Order No. 91-13-DWQ adopted in November 1991, amended by Order No. 92-12-DWQ adopted in September 1992). Stormwater discharges from power plants are subject to requirements under this general permit.

15. Effluent limitations and guidelines, national standards of performance, and toxic effluent standards established pursuant to Sections 208, 301, 302, 303, 304, 306, 307, and 316 of the Federal Clean Water Act, and amendments thereto, are applicable to the discharge.

16. In compliance with the Thermal Plan and in accordance with Regional Board specifications, the Discharger conducted a thermal effects study. The study, completed in 1973, 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.

17. In accordance with Federal and State guidelines for Section 316(b) of the CWA, the Discharger conducted studies in 1977 to 1981 to determine whether the location, design, construction, and capacity of the cooling water intake structures reflected the best technology available for minimizing impacts. The study, completed on December 1981, adequately addressed the important ecological and engineering factors specified in the guidelines, demonstrated that the ecological impacts of the intake system are environmentally acceptable, provided evidence that no modification to design, location, or capacity of the intake structure is required.

18. At times of peak demand during defouling treatment, maximum residual chlorine levels in the once-through cooling water (up to 0.36 mg/l) have exceeded effluent limitations based on 40 CFR Part 423 guidelines and Ocean Plan objectives [0.20 mg/l and 0.398 mg/l (based on 1983 Ocean Plan)]. However, chlorination bioassay studies performed by the Discharger in 1987 showed no significant adverse impact on the receiving waters as a result of the chlorine levels in the discharge.

    Pursuant to CWA Section 301(g), in April 1984 the Discharger submitted a request to the USEPA for a variance from the 40 CFR Part 423 effluent residual chlorine limitation. In September 1984, the Discharger further requested an Ocean Plan exception for residual chlorine effluent limitation (i.e., from 0.398 mg/l to 0.436 mg/l). The Regional Board and the State Board approved the exception request and forwarded it to the USEPA in August 1988 for concurrence. To date, the USEPA has not yet rendered its decision on both requests.

19. The requirements contained in this Order, as they are met, will be in conformance or in compliance with the goals of the aforementioned water control plans and statutes.

20. Effluent limitations based on Ocean Plan objectives were calculated using a minimum dilution ratio (i.e., parts sea water to one part effluent) of 3.1 to 1 for Discharge Serial No. 001, except for residual chlorine which is 5.8:1. These

ratios were based on calculations made by the Discharger and approved by the State Board (transmitted to the Regional Board in a State Board memorandum dated February 4, 1985).

21. For toxic constituents regulated in the Ocean Plan (Table B) which the Discharger does not add into or produced in the treatment process and/or waste streams, no numerical limits are prescribed. Also, no narrative limits are prescribed for toxic constituents which are added but usage has been determined that there is very low probability of causing or contributing to excursions in the water quality standards. However, a narrative limit to comply with all ocean Plan objectives is provided.

22. Acute toxicity monitoring conducted over the past five years demonstrated consistent compliance with the Ocean Plan objectives. However, since the Ocean Plan objectives are not applicable to steam electric generating plants, no numerical limits are prescribed for acute toxicity.

23. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code in accordance with Water Code Section 13389.

The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

The Board, at a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Clean Water Act or amendments thereto, and shall take effect at the end of ten days from the date of its adoption provided the Regional Administrator, USEPA, has no objections.

IT IS HEREBY ORDERED that City of Los Angeles, Department of Water and Power, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

I. DISCHARGE LIMITATIONS

A. EFFLUENT LIMITATIONS

1. Wastes discharged shall be limited to those described above only, as proposed.

2. The temperature of waste discharged shall not exceed 94°F during normal operation of the facility. During heat treatment, the temperature of waste discharged shall not exceed 106°F except during adjustment of the recirculation gate at which time the temperature of wastes discharged shall not exceed 110°F. Temperature fluctuations during gate adjustment above 106°F shall not last for more than 30 minutes.

3. The pH of wastes discharged shall at all times be within the range of 6.0 to 9.0 pH units.

4. The discharge of wastes from Discharge Serial No. 001 in excess of the following limits is prohibited:

		DISCHARGE LIMITATIONS[1]	
		30-day	Daily
Constituent	Units	Average	Maximum
Arsenic	µg/l	23.5	122
	lbs/day[2]	21.8	113
Cadmium	µg/l	4.1	16.4
	lbs/day[2]	3.8	15.2
Chromium[3] (hexavalent)	µg/l	8.2	32.8
	lbs/day[2]	7.6	30.4
Copper	µg/l	6.1	43
	lbs/day[2]	5.7	40
Lead	µg/l	8.2	32.8
	lbs/day[2]	7.6	30.4
Mercury	µg/l	0.162	0.654
	lbs/day[2]	0.150	0.606
Nickel	µg/l	20.5	82
	lbs/day[2]	19.0	76

Constituent	Units	Discharge Limitations 30-day Average	Daily Maximum
Selenium	µg/l	61.5	246
	lbs/day[2]	57.0	228
Silver	µg/l	2.37	10.98
	lbs/day[2]	2.20	10.17
Zinc	µg/l	57.23	303
	lbs/day[2]	53.03	281
Chronic toxicity[4]	TU_c	---	4.1
Radioactivity	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3 Article 3, Section 30269, California Code of Regulations.		

[1] Concentration limits are based on Ocean Plan objectives using a dilution ratio of 3.1 parts of seawater to 1 part effluent.

[2] Based on a flow rate of 111.1 mgd.

[3] The discharger has the option to meet the hexavalent chromium limitations with a total chromium analysis. However, if the total chromium level exceeds the hexavalent chromium limitation, it will be considered a violation unless an analysis has been made for hexavalent chromium in a replicate sample and the result show within the hexavalent chromium limits.

[4] Expressed as Chronic Toxicity Units (TU_c)

$TU_c = 100/NOEC$

where: NOEC (No Observed Effect Concentration) is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism as determined by the result of a critical life stage toxicity test listed in Appendix II of the Ocean Plan adopted and effective on March 22, 1990, pages 22-23.

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

5. The discharge of wastes from Discharge Serial No. 001 in excess of the following concentration limits is prohibited:

Constituent	Units	DISCHARGE LIMITATIONS Daily Average	Daily Maximum
Total residual chlorine[2]	mg/l	---	0.377
	lbs/day[1]	---	350
Free Available chlorine	mg/l	0.2	0.377
	lbs/day[1]	185	350

[1] Based on a flow rate of 111.1 mgd.

[2] Based on the State Board approved Ocean Plan Exception using a minimum dilution ratio of 5.8 Total Residual chlorine shall not be discharged from any single generating unit for more than 12 minutes per condenser half per shift. For chlorine discharges of up to 12 minutes, the daily maximum limit is 0.377 mg/l. For chlorine discharges exceeding 12 minutes, the applicable total residual chlorine limitations shall be that calculated using the same methodology as was used to support the Ocean Plan exceptions.

[3] Chlorine shall not be discharged from any single generating unit for more than two hours per day. If other oxidants are used, this shall be the total of all oxidants reported as residual chlorine.

6. If the USEPA Administrator does not approve the Section 301(g) variance as discussed in Finding No. 18, the effluent limitations in A-5 are not applicable, and the following effluent limitation is applicable:

Constituent	Unit	Discharge Limitation Daily Maximum
Total residual chlorine[2][3][4]	mg/l	0.2
	lbs/day[1]	185

[1] Based on a flow rate of 111.1 mgd.

[2] Chlorine shall not be discharged from any single generating unit for more than two hours per day.

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

[4] A biocide containing chlorine plus bromine may be used as long as there is an EPA registration number and an establishment number on the label of the product. The monitoring report should report total residual oxidants instead of total residual chlorine.

7. Effluent Limitations for Inplant Waste Streams:

a. The discharge of metal cleaning wastes[1] with constituents in excess of the following limits is prohibited:

		DISCHARGE LIMITATIONS[2]	
Constituents	Units	30-day Average	Daily Maximum
Suspended solids	mg/l	30	100
Oil and grease	mg/l	15	20
Copper, total	mg/l	1.0	1.0
Iron, total	mg/l	1.0	1.0

[1] For the purpose of these limitations, metal cleaning wastes shall mean any wastewater resulting from chemical cleaning of any metal process equipment including, but not limited to boiler acid rinses.

[2] The daily mass emission limits (in lbs per day) shall be determined using the tabulated concentration limits and the actual volume of metal cleaning wastes.

b. The discharge of low volume wastes with constituents in excess of the following limits is prohibited:

		DISCHARGE LIMITATIONS[1]	
Constituents	Units	30-day Average	Daily Maximum
Suspended solids	mg/l	30	100
Oil and grease	mg/l	15	20

[1] The daily mass emission limits (in lbs/day) shall be determined using the tabulated concentration limits and actual flow rate.

c. In the event that waste streams from various sources (7.a and 7.b) are combined for treatment or discharge, the quantity of each pollutant properly controlled attributable to each controlled waste source shall not exceed the specified limitation for that waste source.

B. RECEIVING WATER LIMITATIONS

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

2. Wastes discharged 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. The transmittance of natural light shall not be significantly reduced at any point outside the zone of initial dilution as a result of wastes discharged.

4. The rate of deposition and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded as a result of wastes discharged.

5. The wastes discharged shall not depress the dissolved oxygen concentration outside the zone of initial dilution at any time by more than 10 percent from that which occurs naturally, excluding effects of naturally induced upwelling.

6. The wastes discharged shall not change the pH of the receiving waters at any time by more than 0.2 units from that which occurs naturally outside the zone of initial dilution.

7. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions as a result of wastes discharged.

8. The wastes discharged shall not increase the concentrations, in marine sediments of toxic substances listed in Table B of the Ocean Plan, to levels which would degrade indigenous biota.

9. The concentration of organic materials in marine sediments shall not be increased above that which would degrade marine life as result of wastes discharged.

10. The wastes discharged shall not cause objectionable aquatic growths or degrade indigenous biota.

11. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded as a result of wastes discharged.

12. 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 as a result of wastes discharged.

13. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered as a result of wastes discharged.

14. The wastes discharged shall not cause objectionable odors to emanate from the receiving waters.

15. The wastes discharged shall not cause receiving waters to contain any substance in concentrations toxic to human, animal, plant, or fish life.

16. No physical evidence of wastes discharged shall be visible at any time in the water or on beaches, shores, rocks, or structures.

17. The salinity of the receiving waters shall not be changed by the wastes discharged to an extent such as to be harmful to marine biota.

18. The wastes discharged shall not contain individual pesticide or combination of pesticides in concentrations that adversely affect beneficial uses.

II. REQUIREMENTS AND PROVISIONS

A. The discharger must develop and implement a Storm Water Pollution Prevention Plan in accordance with Attachment A (Storm Water Pollution Prevention Plan) within 120 days of the effective date of this Order. An existing SWPPP which complies with the requirements in Attachment A is acceptable.

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 municipal storm water management programs developed to comply with NPDES general permits issued by the Regional Water Board to local agencies.

C. The wastes discharged shall comply with all Ocean Plan objectives.

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, and 423 of the Federal Clean Water Act and amendments thereto.

E. 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. This requirement is not applicable to products used for lawn and agricultural purposes. Discharge of chlorine for disinfection in plant potable and service water systems and in sewage treatment is authorized.

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

G. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

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

1. Name and general composition of the chemical,
2. Frequency of use,
3. Quantities to be used,
4. Proposed discharge concentrations, and
5. EPA registration number, if applicable.

No discharge of such chemical shall be made prior to the Executive Officer's approval.

I. The Regional Board and USEPA shall be notified immediately by telephone, of the presence of adverse conditions in the receiving waters or on beaches and shores as a result of wastes discharge; written confirmation shall follow as soon as possible but not later than five working days after occurrence.

J. This Order may be modified, revoked and reissued, or terminated in accordance with the provisions of 40 CFR Parts 122.44, 122.62 to 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 and permit, 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 and issuance.

The filing of a request by the Discharger for an order and permit modification, revocation and issuance, or termination; or a notification of planned changes or anticipated noncompliance does not stay any condition of this order and permit.

K. This Order may also be modified, in accordance with the provisions set forth in 40 CFR Part 122 and 124, to include requirements for the implementation of the watershed protection management approach.

L. This Order includes the attached "Standard Provisions and General Monitoring and Reporting Requirements" ("Standard Provisions", Attachment B). If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail.

III. EXPIRATION DATE

This Order expires on January 10, 2000.

The Discharger must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

IV. RESCISSION

Order No. 90-098, adopted by this Board on July 30, 1990, is hereby rescinded except for enforcement purposes.

I, Robert P. Ghirelli, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on February 27, 1995.

Robert P. Ghirelli

ROBERT P. GHIRELLI, D.Env.
Executive Officer

/avc

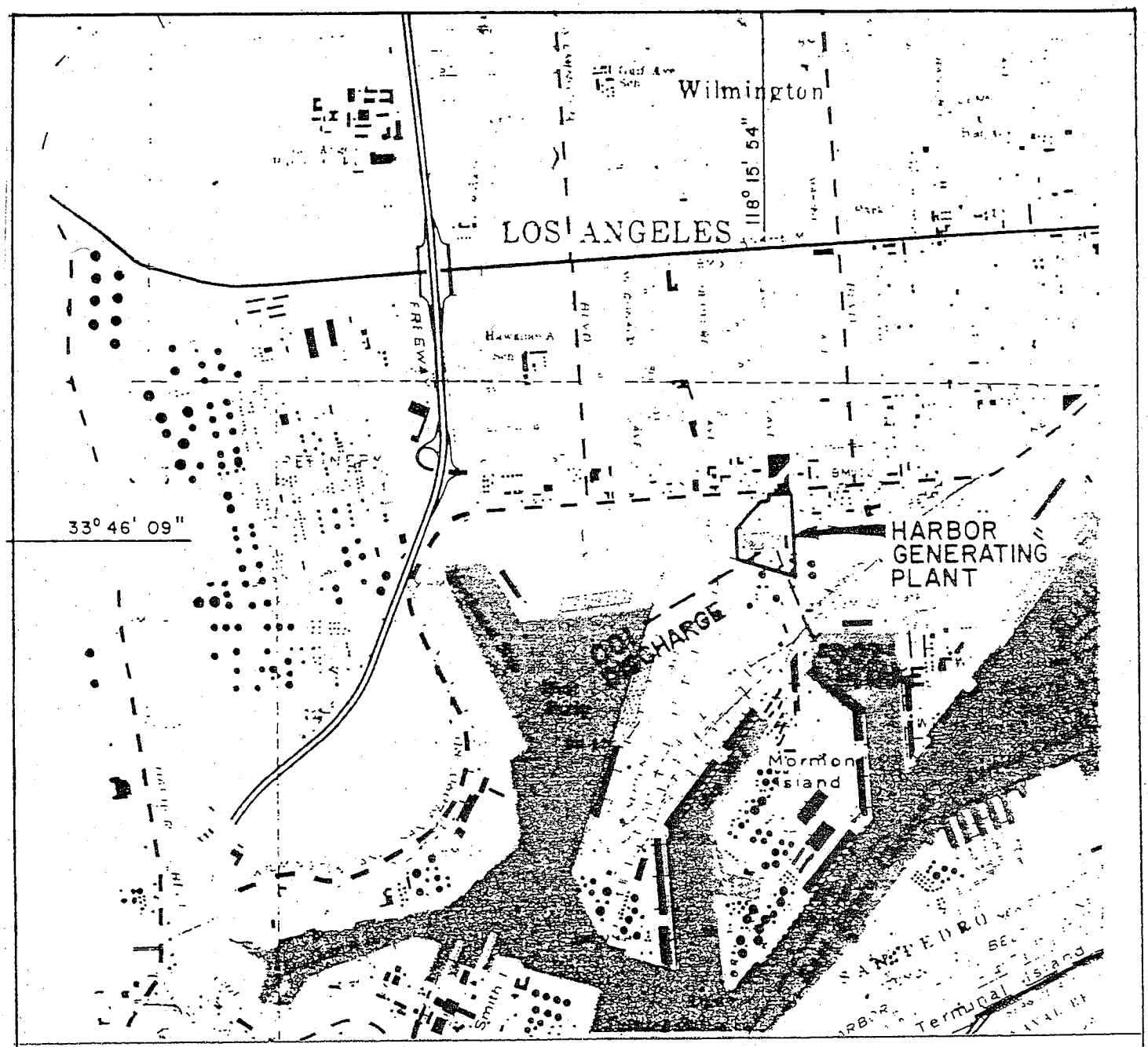
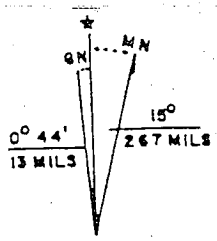


FIGURE 1



UTM GRID AND 1972 MAGNETIC NORTH DECLINATION AT CENTER USGS MAP

SCALE 1:24000

REPRODUCED FROM USGS MAP
TORRANCE, CALIF 1972

FACILITY LOCATION:
STATE OF CALIFORNIA
COUNTY OF LOS ANGELES
CITY OF LOS ANGELES

LOCATION MAP

HARBOR GENERATING STATION
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

SB-CD19

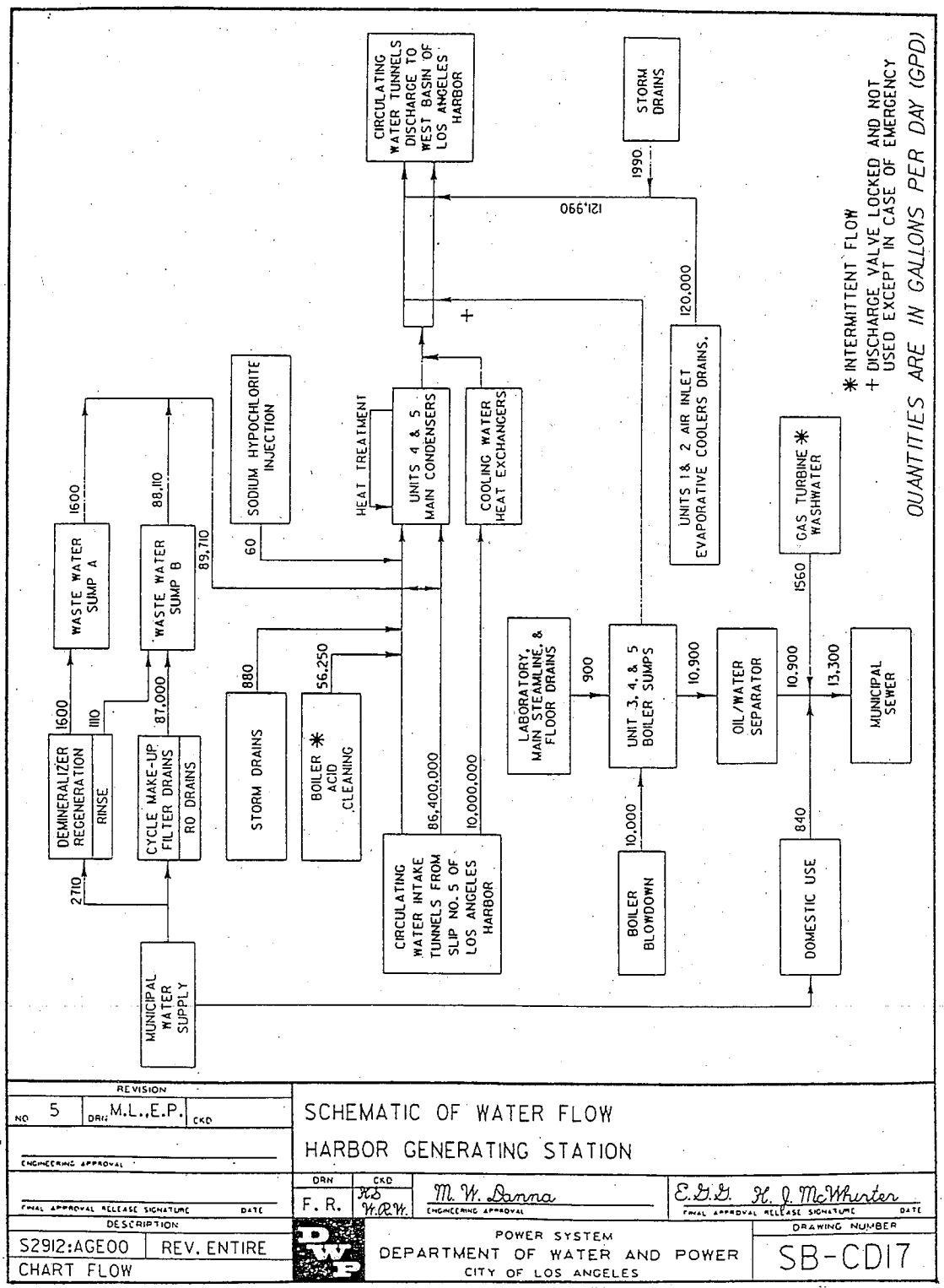

CIRCULATING WATER TUNNELS DISCHARGE TO WEST BASIN OF LOS ANGELES HARBOR
STORM DRAINS
1990
121,990
120,000
UNITS 1 & 2 AIR INLET EVAPORATIVE COOLERS DRAINS.
GAS TURBINE * WASHWATER
1560
13,300
MUNICIPAL SEWER
* INTERMITTENT FLOW
+ DISCHARGE VALVE LOCKED AND NOT USED EXCEPT IN CASE OF EMERGENCY
QUANTITIES ARE IN GALLONS PER DAY (GPD)
SODIUM HYPOCHLORITE INJECTION
60
HEAT TREATMENT
UNITS 4 & 5 MAIN CONDENSERS
COOLING WATER HEAT EXCHANGERS
+
1600
WASTE WATER SUMP A
88,110
WASTE WATER SUMP B
89,710
880
STORM DRAINS
56,250
BOILER * ACID CLEANING
LABORATORY, MAIN STEAMLINE, & FLOOR DRAINS
900
UNIT 3, 4, & 5 BOILER SUMPS
10,900
OIL/WATER SEPARATOR
10,900
1600
DEMINERALIZER REGENERATION
RINSE
110
87,000
CYCLE MAKE-UP FILTER DRAINS
RO DRAINS
86,400,000
10,000,000
CIRCULATING WATER INTAKE TUNNELS FROM SLIP NO. 5 OF LOS ANGELES HARBOR
10,000
BOILER BLOWDOWN
840
DOMESTIC USE
2710
MUNICIPAL WATER SUPPLY
REVISION
NO 5
DRN M.L.,E.P.
CKD
ENGINEERING APPROVAL
FINAL APPROVAL RELEASE SIGNATURE
DATE
DESCRIPTION
S2912:AGE00
REV. ENTIRE
CHART FLOW
SCHEMATIC OF WATER FLOW
HARBOR GENERATING STATION
DRN F. R.
CKD K.S. W.R.W.
M. W. Danna
ENGINEERING APPROVAL
E.G.G. K. J. McWhirter
FINAL APPROVAL RELEASE SIGNATURE
DATE
POWER SYSTEM
DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES
DRAWING NUMBER
SB-CD17

FIGURE 2

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
MONITORING AND REPORTING PROGRAM NO. 2020
FOR
CITY OF LOS ANGELES, DEPARTMENT OF WATER AND POWER
(Harbor Generating Station)
(CA0000361)

I. Monitoring and Reporting Requirements

A. The discharger shall implement this monitoring program on the effective date of this Order. Effluent monitoring reports shall be submitted monthly, by the first day of the second month following each monthly sampling period. The first monitoring report under this program is due by April 1, 1995, covering the monitoring period of February 1995.

B. By March 1st of each year, the discharger shall submit an annual report to the Board. The report shall contain both tabular and graphical summaries of the effluent and receiving water monitoring data obtained during the previous calendar year. In addition, the discharger shall discuss the compliance record and the corrective actions taken or planned which may be needed to bring the discharge into full compliance with waste discharge requirements.

C. Laboratory analyses - all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory approved by the Executive Officer or certified for such analyses by the State Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of laboratory certification shall be provided each time a new and/or renewal is obtained from ELAP.

D. Analytical data shall be reported on Regional Board Laboratory Report Forms. These forms contain the requirements for analytical test results and Quality Assurance/Quality Control (QA/QC) reports for all water/wastewater samples analyzed for volatile organic compounds, petroleum hydrocarbons, and metals. Analytical results for major wastewater constituents and other toxic materials for which the Regional Board has not yet developed laboratory forms shall be reported separately but with similar information as in the Regional Board's laboratory forms.

E. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136.3. All QA/QC items must be run on the same dates when samples were actually analyzed, and the results shall be reported on

Regional Board format and submitted with the laboratory reports. Proper chain of custody procedures must be followed and a copy shall be submitted with the report. The data shall be submitted to the Regional Board on hard copy and on 3 1/2" or 5 1/4" computer diskette. Submitted data must be IBM compatible, preferably using Lotus 123, dBase, or Quattro Pro software.

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

II. EFFLUENT MONITORING

A. Sampling stations shall be established at each point of discharge and shall be located where representative samples of the effluent can be obtained. The following shall constitute the effluent monitoring program for Discharge Serial No. 001:

1. Wastewater Constituents/Parameters

Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Total waste flow[1]	gal/day	---	daily
Temperature[1]	^{0}F	continuous	---
pH	pH units	grab	weekly
Total residual chlorine[2]	mg/l	grab[3]	daily
Free available chlorine[2]	mg/l	grab[3]	daily
Nitrate nitrogen	mg/l	grab	annually
Radioactivity[4]	pCi/ml	grab	annually
Toxicity, chronic[5,6,7,]	TU_c	grab	quarterly
Priority pollutants (page T-12)	ug/l	grab	[8]

[1] Where continuous monitoring of temperature, and flow is required, the following shall be included in the report:

Temperature: Only the maximum temperature for each calendar day shall be reported, except when temperatures exceed 105°F, the reason(s), time of day, and duration of such events shall be reported.

Flow: Total daily flow.

[2] 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.

[3] Multiple grab samples with at least four equally spread grab samples during each hour of chlorine addition. The maximum and average concentrations on the duration of chlorine addition shall be reported. Alternatively, a single grab sample may be collected at the time of peak residual chlorine concentration. The discharger shall conduct a study on the plant's chlorination cycle to determine the time of peak residual chlorine concentration. The study plan shall be subject to the Executive Officer's approval.

[4] Radioactivity determinations of gross and net beta activity, in picocuries per liter, shall be made within 48 hours following preparation of composite samples. The overall efficiency of the counting system, size of sample and counting time shall be such that radioactivity can be determined to a sensitivity of ten picocuries per liter with a 95% confidence limit not to exceed 50 percent.

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

[5] Initial screening shall be conducted using a minimum of three test species with approved test protocols listed in the California Ocean Plan (State Water Resources Control Board, 1990) to determine the most sensitive test organism for chronic toxicity testing (other test species may be added to the Ocean Plan list when approved by the State Board). The initial screening process shall be conducted for a minimum of three months, but not to exceed five months, to account for potential variability of the effluent. If possible, the test species used during the screening process should include a fish, an invertebrate and an aquatic plant.

After the initial screening period, chronic toxicity testing may be limited to the most sensitive test species. However, the initial screening process shall be repeated annually, with a minimum of three test species with approved test protocols to ensure use of the most sensitive species for chronic toxicity testing. One month would be sufficient if it indicates that the most sensitive species is the same as the previous one. However, if the first month screening indicates another species as the most sensitive, then the three month screening period must be completed.

Dilution and control waters should be obtained from an unaffected area of the receiving waters. Standard dilution water may be used if the above source exhibits toxicity greater than 1.0 tu_c. The

sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each batch of bioassay tests and reported with the test results.

[6] Chronic toxicity shall be expressed and reported as toxic units, where:

$$tu_c = 100/NOEC$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed on Pages 22-23 of the Ocean Plan.

The effluent tests shall be conducted with concurrent reference toxicant tests. Both the reference toxicant and effluent test must meet all protocols. If the test acceptability criteria is not achieved, then the discharger must re-sample and re-test within 14 days. The discharger shall submit the data on hard copy and on electronic disk as specified in Suggested Standard Reporting Requirements for Monitoring Chronic Toxicity (SWRCB, August 1993).

[7] In the event of an exceedance of the chronic toxicity effluent limitation, the sampling frequency shall convert to monthly until compliance has been demonstrated for three consecutive months.

[8] Once every five years beginning in 1996. If Priority Pollutants tests coincides with discharge event test, and the test parameters duplication exists, only one test is needed per duplication.

2. Metals

Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Antimony	µg/l	grab	semi-annually
Arsenic	µg/l	grab	semi-annually
Beryllium	µg/l	grab	semi-annually
Chromium (III)	µg/l	grab	semi-annually
Hexavalent chromium	µg/l	grab	semi-annually
Cadmium	µg/l	grab	semi-annually
Copper	µg/l	grab	semi-annually
Lead	µg/l	grab	semi-annually
Mercury	µg/l	grab	semi-annually
Nickel	µg/l	grab	semi-annually
Selenium	µg/l	grab	semi-annually
Silver	µg/l	grab	semi-annually
Thallium	µg/l	grab	semi-annually
Zinc	µg/l	grab	semi-annually

B. The effluent monitoring program for Inplant Waste Stream is as follows:

1. Metal Cleaning Wastes:

Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Flow[1]	mgd	---	monthly
Suspended solids	mg/l	grab	monthly
Oil and grease	mg/l	grab	monthly
Copper, total	mg/l	grab	monthly
Iron, total	mg/l	grab	monthly

[1] If no flow occurred during the month the report shall so state.

2. Low Volume Wastes:

Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Flow[1]	mgd	---	monthly
Suspended solids	mg/l	grab	monthly
Oil and grease	mg/l	grab	monthly

[1] If no flow occurred during the month, the report shall so state.

III. RECEIVING WATER MONITORING

A. Regional Monitoring Program

1. Pursuant to the Code of Federal Regulation [40 CFR §122.41(j) and §122.48(b)], the monitoring program for a discharger receiving a National Pollutant Elimination System (NPDES) permit must determine compliance with NPDES permit terms and conditions, and demonstrate that State water quality standards are met.

2. Since compliance monitoring focuses on the effects of the point source discharge, it is not designed to assess impacts from other sources of pollution (e.g., non-point source run-off, aerial fallout) nor to evaluate the current status of important ecological resources on a regional basis.

Several efforts are underway to develop and implement a comprehensive regional monitoring program for the Southern California Bight. These efforts have the support and participation from regulatory agencies, dischargers, and environmental groups. The goal is to establish a regional program to address public health concerns, monitor trends in natural resources, and nearshore habitats, and assess regional impacts from all contaminant sources.

3. A pilot regional monitoring program was conducted during the summer of 1994 to test an alternative sampling design that combines elements of compliance monitoring with a broader regional assessment approach. This pilot program was designed by USEPA, the State Water Resources Control Board, and three Regional Water Quality Control Boards (Los Angeles, Santa Ana, San Diego) in conjunction with the Southern California Coastal Water Research Project and participating discharger agencies.

4. The results of the pilot program will be evaluated and used to redesign the current monitoring program and to develop a comprehensive regional monitoring program for the Southern California Bight. At the same time, the monitoring programs conducted by other dischargers and agencies will be integrated into this regional program. If predictable relationships among the biological, water quality, and effluent monitoring variables can be demonstrated, it may be appropriate to decrease the sampling effort. Conversely, the monitoring program may be intensified if it appears that the objectives cannot be achieved through the existing monitoring program. In general, the goal is a more efficient monitoring program that can be used for both compliance and regional bight-wide assessments.

5. Substantial changes to the compliance monitoring program for this generating station may be required over the next few years to fulfill the goals of regional monitoring, while retaining the compliance monitoring component required to evaluate the potential impacts from the NPDES discharge. Revisions to the existing program will be made under the discretion of the USEPA and the Los Angeles Regional Board as necessary to accomplish this goal; and may include a reduction or increase in the

receiving monitoring to a minimum level required for compliance monitoring purposes, provided that Southern California Edison and the City of Los Angeles Department of Water Power devote the majority of their cost savings to the creation of a regional database.

C. Receiving Water Monitoring

The receiving water monitoring program shall consist of periodic biological surveys of the area surrounding the discharge, and shall include studies of those physico-chemical characteristics of the receiving waters which may be impacted by the discharge.

Location of Sampling Stations (see attached figure 3):

1. Receiving water stations shall be located as follows:

   a. Station RW1 - 492 feet from the discharge point and equidistant from Berths 138 and 143.

   b. Station RW2 - in the middle of West Basin and approximately 590 feet from the perpendicular to Berth 144.

   c. Station RW3 - mid-channel in the entrance to West basin, off Berth 147.

2. Benthic stations shall be located as follows:

   Stations B1 through B3 shall be located directly beneath Stations RW1 through RW3, respectively.

3. Trawling stations shall be located as follows:

   a. Station T1 - beginning at Station RW1 and extending toward Station RW2.

   b. Station T2 - beginning at Station RW3 and extending toward Berth 100.

D. Type and Frequency of Sampling:

1. Temperature profiles shall be measured semi-annually (summer and winter) each year at Stations RW1 through RW3

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

SUMMARY OF RECEIVING WATER MONITORING

Parameter	Units	Stations	Type of Sample	Minimum Frequency
Temperature	°C	RW1-RW3	vertical profile	semi-annually (flood, ebb)
Dissolved oxygen	mg/L	RW1-RW3	vertical profile	semi-annually (flood, ebb)
pH	pH units	RW1-RW3	vertical profile	semi-annually (flood, ebb)
Fish and macro invertebrates	---	T1-T2	trawling	semi-annually
Benthic infauna	---	B1-B3	grab	annually
Sediments	---	B1-B3	grab	annually

IV. Stormwater Monitoring and Reporting Program

The discharger shall implement the attached Stormwater Monitoring and Reporting Program (Attachment 1).

Ordered by: Robert P. Ghirelli
ROBERT P. GHIRELLI, D.Env.
Executive Officer

Date: February 27, 1995