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

MONITORING AND REPORTING PROGRAM NO. CI-2171 FOR

CITY OF LOS ANGELES (Terminal Island Treatment Plant) (NPDES NO. CA0053856)

The City of Los Angeles (City or Discharger) shall implement this Monitoring and Reporting Program (MRP) the first of the month following the month of the effective date of this Order.

I. SUBMITTAL OF MONITORING REPORTS

1. All monthly monitoring reports must be received by the fifteenth day of the third month following each monthly sampling period.
2. By April 15th of each year, the Discharger shall submit an annual summary report containing a discussion of the previous year's influent and effluent monitoring data, as well as graphical and tabular summaries of the data. The first annual report under this Program shall be received at the Regional Board by April 15, 2006, and will cover the monitoring period of calendar year 2005. The annual summary report shall contain a discussion of the previous year's influent/effluent analytical results, as well as graphical and tabular summaries of the monitoring analytical data. In addition, it shall also discuss the compliance record and any corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge and permit requirements.
3. A detailed Receiving Water Monitoring biennial assessment report of the data collected during the two previous calendar sampling years (January-December) shall be prepared and submitted so that it is received by the Regional Board and USEPA Region IX by August 1 of every other year. This report shall include an annual data summary and shall also include an in-depth analysis of the biological and chemical data following recommendations in "Design of 301(h) Monitoring Programs for Municipal Wastewater Discharges to Marine Water" (EPA, November 1982; 430/982-010; pages 74-91) and the Model Monitoring Program guidance document (Schiff, K.C., J.S. Brown and S.B. Weisberg. 2001. *Model Monitoring Program for Large Ocean Dischargers in Southern California*. SCCWRP Tech. Rep #357. Southern California Coastal Water Research Project, Westminster, CA. 101 pp.). Data shall be tabulated, summarized, and graphed where appropriate, analyzed, interpreted, and generally presented in such a way as to facilitate ready understanding of its significance. Spatial and temporal trends shall be examined and compared. The relation of physical and chemical parameters to biological parameters shall be evaluated. See, also, Section VII. of this Monitoring and Reporting Program. All receiving water monitoring data shall be submitted in accordance with the data submittal formats developed for the Southern California Bight Regional Monitoring Surveys.

The first assessment report shall be due August 1, 2006, and cover the sampling periods of January-December 2004 and January-December 2005. Subsequent reports shall be due August 1, 2008, and August 1, 2010, to cover sampling periods of January 2006-December 2007 and January 2008-December 2009, respectively.

4. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the 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 discharge requirements, as well as all excursions of effluent limitations.
5. Each annual monitoring report shall contain a separate section titled "Reasonable Potential Analysis" which discusses whether or not reasonable potential was triggered for pollutants which do not have a final effluent limitation in the NPDES permit. This section shall contain the following statement: "The analytical results for this sampling period did/did not trigger reasonable potential." If reasonable potential was triggered, then the following information should also be provided:
 - A. A list of the pollutant(s) that triggered reasonable potential;
 - B. The Basin Plan or CTR criteria that was exceeded for each given pollutant;
 - C. The concentration of the pollutant(s);
 - D. The test method used to analyze the sample; and,
 - E. The date and time of sample collection.
6. All monthly monitoring reports, annual summary reports, and biennial assessment reports must be addressed to the Regional Board, Attention: Information Technology Unit. Reference the reports to Compliance File No. CI-2171 to facilitate routing to the appropriate staff and file.
7. Database Management System: The Regional Board and the State Water Resources Control Board (State Board) are developing a database compliance monitoring management system that may require the Discharger to submit the monitoring and annual summary reports electronically when it becomes fully operational. The Regional Board may request electronic submittal of data contained in a CD-ROM disk or other appropriate electronic medium at any time. The submittal data must be IBM compatible, preferably using Microsoft Excel software.

II. GENERAL MONITORING REQUIREMENTS

1. All samples shall be representative of the waste discharge under conditions of peak load. Quarterly analyses and sampling shall be performed during the 1st quarter (January, February, and March), the 2nd quarter (April, May, and June), the 3rd quarter (July, August, and September), and the 4th quarter (October, November, and December). Semiannual analyses and sampling shall be performed during the 1st quarter (January, February, and March) and the 3rd quarter (July, August, and

September). Annual analyses and sampling shall be performed during the 3rd quarter (July, August, and September). Should there be instances when monitoring could not be done during these specified months, the Discharger must notify the Regional Board, state the reason why monitoring could not be conducted, and obtain approval from the Executive Officer for an alternate schedule. Results of quarterly, semiannual, and annual analyses shall be reported in the monthly monitoring report following the analysis.

2. Pollutants shall be analyzed using the analytical methods described in 40 CFR, Part 136; or where no methods are specified for a given pollutant, by methods approved by the Regional Board or State Board. The laboratory conducting analyses shall be certified by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP) or approved by the Regional Board for that particular parameter. A copy of the laboratory certification shall be submitted with the annual summary report.
3. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR, Part 136.3. All QA/QC analyses must be run on the same dates that samples are actually analyzed. The Discharger shall retain the QA/QC documentation in its files and make available for inspection and/or submit them when requested by the Regional Board. Proper chain of custody procedures must be followed and a copy of that documentation shall be submitted with the monthly report.
4. For all bacteriological 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 methods used for each analysis shall be reported with the results of the analyses.

Detection methods used for coliforms (total and fecal) shall be those presented in Table 1A of 40 CFR, Part 136 (revised May 14, 1999), unless alternate methods have been approved in advance by the United State Environmental Protection Agency (USEPA) pursuant to 40 CFR Part 136, or improved methods have been determined by the Executive Officer and/or USEPA.

Detection methods used for enterococcus shall be those presented in the USEPA publication EPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water By Membrane Filter Procedure* or any improved method determined by the Executive Officer and/or USEPA to be appropriate.

III. REPORTING REQUIREMENTS

1. The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL), the minimum level (ML) and the reported Minimum Level (RML) for each pollutant. The MLs are those published by the State Board in the *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, March 2, 2000, Appendix 4. The ML represents the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix

interference. When all specific analytical steps are followed and after appropriate application of method specific factors, the ML also represents the lowest standard in the calibration curve for that specific analytical technique. When there is deviation from the method analytical procedures, such as dilution or concentration of samples, other factors may be applied to the ML depending on the sample preparation. The resulting value is the reported minimum level.

2. The Discharger shall select the analytical method that provides a ML lower than the permit limit established for a given parameter, unless the Discharger can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR, Part 136, and obtains approval for a higher ML from the Executive Officer, as provided for in III.5. of this section. If the effluent limitation is lower than all the MLs in Appendix 4, SIP, the Discharge must select the method with the lowest ML for compliance purposes. The Discharger shall include in the Annual Summary Report a list of the analytical methods employed for each test.
3. The Discharger shall instruct its laboratories to establish calibration standards so that the ML (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. In accordance with Section III.5., below, the Discharger's laboratory may employ a calibration standard lower than the ML in Appendix 4 of the SIP.
4. For the purpose of reporting compliance with numerical effluent limitations and receiving water limitations, analytical data shall be reported using the following reporting protocols:
 - A. Sample results greater than or equal to the RML must be reported "as measured" by the laboratory (i.e., the measured chemical concentration in the sample); or
 - B. Sample results less than the RML, but greater than or equal to the laboratory's MDL, must be reported as "Detected, but Not Quantified", or DNQ; or
 - C. Sample results less than the laboratory's MDL must be reported as "Not-Detected", or ND.
5. In accordance with Section 2.4.3 of the SIP, the Regional Board Executive Officer, in consultation with the State Board's Quality Assurance Program Manager, may establish an ML that is not contained in Appendix 4 of the SIP to be included in the discharger's permit in any of the following situations:
 - A. When the pollutant under consideration is not included in Appendix 4, SIP;
 - B. When the discharger and the Regional Board agree to include in the permit a test method that is more sensitive than those specified in 40 CFR, Part 136 (revised as of May 14, 1999);
 - C. When a discharger agrees to use an ML that is lower than those listed in Appendix 4;

- D. When a discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Appendix 4 and proposes an appropriate ML for the matrix; or,
- E. When the discharger uses a method, which quantification practices are not consistent with the definition of the ML. Examples of such methods are 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 Board, and the State Water Resources Control Board shall agree on a lowest quantifiable limit and that limit will substitute for the ML for reporting and compliance determination purposes.

If there is any conflict between foregoing provisions and the State Implementation Policy (SIP), the provisions stated in the SIP (Section 2.4) shall prevail.

- 6. If the Discharger samples and performs analyses (other than for process/operational control, startup, research, or equipment testing) on any influent, effluent, or receiving water constituent more frequently than required by this Program using approved analytical methods, the results of those analyses shall be included in the report. These results shall be reflected in the calculation of the average used in demonstrating compliance with average effluent, receiving water, etc., limitations.
- 7. The Discharger shall develop and maintain a record of all spills, overflows, or bypasses of raw or partially treated sewage from its collection system or treatment plant. This record shall be made available to the Regional Board upon request. On the fifteenth day of January, April, July, and October (15 days after the end of the fiscal quarter) of each year, the Discharger shall submit to the Regional Board and USEPA a report listing all spills, overflows or bypasses occurring during the previous quarter. For certain spills, overflows and bypasses, the Discharger shall make reports and conduct monitoring as required below:
 - A. For spills, overflows, or bypass of 500 gallons or more that flowed to receiving waters or entered a shallow ground water aquifer or have public exposure and all spills, overflows, or bypasses of 1000 gallons or more, the Discharger shall report such spills to the Regional Board, the State Office of Emergency Services and the local agency by telephone or electronically as soon as possible but no later than 24 hours of knowledge of the incident. The following information shall be included in the report: location; date and time of spill; volume and nature of the spill; cause(s) of the spill; mitigation measures implemented; and corrective measures implemented or proposed to be implemented to prevent/minimize future occurrences.
 - B. For spills, overflows, or bypasses of 500 gallons or more that flowed to receiving waters, the Discharger shall obtain and analyze grab samples for total and fecal coliforms or E. coli, and enterococcus, upstream and downstream of the point of entry of the spill if feasible, accessible and safe. This monitoring shall be on a daily basis from time the spill is known until the results of two consecutive sets of bacteriological monitoring indicate the return to the background level or cessation of monitoring is authorized by the County Department of Health Services.

- C. For spills, overflows, or bypasses of 500 gallons or more that flowed to receiving waters or entered a shallow ground water aquifer, and all spills, overflows and bypasses of 1,000 gallons or more, the Discharger shall make a good faith effort to analyze a grab sample of the spill or overflow for total and fecal coliforms or E. coli, and enterococcus, and relevant pollutants of concern depending on the area and nature of spills or overflows.
 - D. Regional Board notification shall be followed by a written preliminary report five working days after verbal/electronic notification of the incident. Within 10 days after submitting preliminary report, the Discharger shall submit the final written report to this Regional Board. The written report shall document the information required in subparagraphs A, B, and C above, monitoring results and any other information required in Provision E.3 of the Standard Provisions.
8. The Discharger shall inform the Regional Board well in advance of any construction activity that could potentially affect compliance with applicable requirements.

IV. REGIONAL MONITORING REQUIREMENTS

- 1. Pursuant to the Code of Federal Regulations [40 CFR, Section 122.41(j) and Section 122.48(b)], the monitoring program for a discharger receiving an NPDES permit must be designed to determine compliance with NPDES permit terms and conditions, and demonstrate that State water quality standards are met.
- 2. 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.
- 3. The Regional Board and USEPA, working with other groups, have developed a comprehensive basis for effluent and receiving water monitoring appropriate to large publicly owned treatment works (POTWs) discharging to waters of the Southern California Bight. This effort has culminated in the publication by the SCCWRP of the Model Monitoring Program guidance document (Schiff, K.C., J.S. Brown and S.B. Weisberg. 2001. *Model Monitoring Program for Large Ocean Dischargers in Southern California*. SCCWRP Tech. Rep #357. Southern California Coastal Water Research Project, Westminster, CA. 101 pp.). This guidance provides the principles, framework and recommended design for effluent and receiving water monitoring elements which have guided development of the monitoring program described below.
- 4. The conceptual framework for the Model Monitoring Program has three components that comprise a range of spatial and temporal scales: (A) core monitoring; (B) regional

monitoring; and (C) special studies.

- A. Core monitoring is local in nature and focused on monitoring trends in quality and effects of the point source discharge. This includes effluent monitoring as well as some aspects of receiving water monitoring. In the monitoring program described below these core components are typically referred to as local monitoring.
- B. Regional monitoring is focused on questions that are best answered by a region-wide approach that incorporates coordinated survey design and sampling techniques. The major objective of regional monitoring is to collect information required to assess how safe it is to swim in the ocean, how safe it is to eat seafood from the ocean, and whether the marine ecosystem is being protected. Key components of regional monitoring include elements to address pollutant mass emission estimations, public health concerns, monitoring of trends in natural resources, assessment of regional impacts from all contaminant sources, and protection of beneficial uses. The final design of regional monitoring programs is developed by means of steering committees and technical committees comprised of participating agencies and organizations, and is not specified in this permit. Instead, for each regional component, the degree and nature of participation of the Discharger is specified. For this permit, these levels of effort are based upon past participation of the City of Los Angeles in regional monitoring programs.

The Discharger shall participate in regional monitoring activities coordinated by the SCCWRP or any other appropriate agency approved by the Regional Board and USEPA. The procedures and time lines for the Regional Board and USEPA approval shall be the same as detailed for special studies, below.

- C. Special studies are focused on refined questions regarding specific effects or development of monitoring techniques and are anticipated to be of short duration and/or small scale, although multiyear studies also may be needed. Questions regarding effluent or receiving water quality, discharge impacts, ocean processes in the area of the discharge, or development of techniques for monitoring the same, arising out of the results of core or regional monitoring, may be pursued through special studies. These studies are by nature ad hoc and cannot be typically anticipated in advance of the five-year permit cycle.

The Discharger, Regional Board and USEPA shall consult annually to determine the need for special studies. Each year, the Discharger shall submit proposals for any proposed special studies to the Regional Board and USEPA by December 30, for the following year's monitoring effort (July through June). The following year, detailed scopes of work for proposals, including reporting schedules, shall be presented by the Discharger at a Spring Regional Board meeting, to obtain the Regional Board and USEPA approval and to inform the public. Upon approval by the Regional Board and USEPA, the Discharger shall implement its special study or studies.

5. Discharger participation in regional monitoring programs is required as a condition of this permit. The Discharger shall complete collection and analysis of samples in accordance with the schedule established by the Steering Committee directing the Bight-wide regional monitoring surveys. The level of participation shall be similar to that provided by the Discharger in previous regional surveys conducted in 1994, 1998, and 2003. The regional programs which must be conducted under this permit include:
 - A. Future Southern California Bight regional surveys, including benthic infauna, sediment chemistry, fish communities, fish predator risk.
 - B. Santa Monica Bay Restoration Project's Seafood Safety Survey – the level of participation shall be equivalent to that outlined by the Santa Monica Bay Restoration Commission's Local Seafood Safety monitoring design.
6. Regular regional monitoring for the Southern California Bight has been established, occurring at four- to five-year intervals, and coordinated through SCCWRP with discharger agencies and numerous other entities. The third regional monitoring program (Bight'03) occurred during summer 2003 and winter 2003-4. While participation in regional programs is required under this permit, revisions to the Terminal Island monitoring program at the direction of the Regional Board and USEPA may be necessary to accomplish the goals of regional monitoring or to allow the performance of special studies to investigate regional or site-specific water issues of concern. These revisions may include a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples to be collected. Such changes may be authorized by the Executive Officer and USEPA upon written notification to the Discharger.

V. INFLUENT MONITORING REQUIREMENTS

1. Influent monitoring is required:
 - A. To determine compliance with the permit conditions for BOD₅ 20°C and suspended solids removal rates;
 - B. To assess treatment plant performance;
 - C. To assess the effectiveness of the pretreatment program; and,
 - D. As a requirement of the Pollution Minimization Program.
2. Sampling stations shall be established at each point of inflow to the sewage treatment plant and shall be located upstream of any in-plant return flows and/or where representative samples of the influent can be obtained. The date and time of sampling shall be reported with the analytical results.
3. Samples for influent BOD₅20°C and suspended solids analysis shall be obtained on the same day that the effluent BOD₅20°C and suspended solids samples are obtained to demonstrate percent removal. Similarly, sampling for other constituents shall also

be coordinated with effluent sampling.

4. The following shall constitute the influent monitoring program:

CTR # ^[1]	Constituents	Units	Type of Sample	Minimum Frequency of Analysis
	Flow	mgd	recorder	continuous
	pH	pH units	grab	weekly
	Suspended solids	mg/L	24-hour composite	weekly
	BOD ₅ 20°C	mg/L	24-hour composite	weekly
6	Copper	µg/L	24-hour composite	quarterly
7	Lead	µg/L	24-hour composite	quarterly
8	Mercury	µg/L	24-hour composite	quarterly
9	Nickel	µg/L	24-hour composite	quarterly
11	Silver	µg/L	24-hour composite	quarterly
14	Cyanide	µg/L	grab	quarterly
68	Bis(2-ethylhexyl)phthalate	µg/L	24-hour composite	quarterly
111	Dieldrin	µg/L	24-hour composite	quarterly
	Pesticides ^[2]	µg/L	24-hour composite	semiannually
	Remaining EPA priority pollutants excluding asbestos	µg/L	24-hour composite/ grab for VOCs and Chromium VI	semiannually

Footnote:

- [1]. This number corresponds to the compound number found in Table 1 of CTR. It is simply the order in which the 126 priority pollutants were listed 40 CFR section 131.38 (b)(1).
- [2]. Pesticides are, for purposes of this order, those six constituents referred to in 40 CFR, Part 125.58 (m) (demeton, guthion, malathion, methoxychlor, mirex, and parathion).

VI. EFFLUENT MONITORING REQUIREMENTS

1. Effluent monitoring is required to:
 - A. Determine compliance with NPDES permit conditions;
 - B. Identify operational problems and aid in improving plant performance;
 - C. Provide information on wastewater characteristics and flows for use in interpreting water quality and biological data; and,
 - D. Determine Reasonable Potential Analysis for toxic pollutants.

2. An effluent sampling station shall be established for each point of discharge and shall be located downstream of any in-plant return flows where representative samples of the effluent can be obtained. Effluent samples may be obtained at a single* station provided that such station is representative of the effluent quality at all discharge points. Any changes in sampling station locations must be approved by the Executive Officer.

*. There is no such single station representative of the effluent quality at all discharge points. The brine discharge from AWTF is downstream of the existing effluent sampling station, which currently only captures the tertiary treated effluent. Therefore, within 90 days from this Order adopted, the City needs to submit a plan of constructing new sampling station to the Regional Board to obtain an approval by the Executive Officer. An extension may be granted by the Executive Officer for good cause.

3. The following shall constitute the effluent monitoring program:

CTR # ^[1]	Constituents	Units	Type of Sample	Minimum Frequency of Analysis
	Total waste flow	mgd	recorder	continuous
	Turbidity	NTU	recorder	continuous
	Total residual chlorine	mg/L	recorder	continuous
	Temperature ^[2]	°F	grab	weekly
	pH	pH units	grab	weekly
	Settleable solids	ml/L	grab	weekly
	Suspended solids	mg/L	24-hour composite	weekly
	BOD ₅ 20°C ^[3]	mg/L	24-hour composite	weekly
	Oil and grease	mg/L	grab	weekly
	Dissolved oxygen	mg/L	grab	weekly
	Ammonia nitrogen	mg/L	24-hour composite	monthly
	Nitrate + nitrite nitrogen	mg/L	24-hour composite	monthly
	Organic nitrogen	mg/L	24-hour composite	monthly
	Total nitrogen	mg/L	24-hour composite	monthly
	Surfactants (MBAS) ^[4]	mg/L	24-hour composite	monthly
	Surfactants (CTAS) ^[4]	mg/L	24-hour composite	monthly
	Chronic toxicity ^[5]	TUc	24-hour composite	monthly
	Acute toxicity ^[6]	% Survival	24-hour composite	monthly
6	Copper	µg/L	24-hour composite	monthly
7	Lead	µg/L	24-hour composite	monthly
8	Mercury	µg/L	24-hour composite	monthly
9	Nickel	µg/L	24-hour composite	monthly
11	Silver	µg/L	24-hour composite	monthly
14	Cyanide	µg/L	grab	monthly
68	Bis(2-ethylhexyl)phthalate	µg/L	24-hour composite	monthly
111	Dieldrin	µg/L	24-hour composite	monthly

CTR # ^[1]	Constituents	Units	Type of Sample	Minimum Frequency of Analysis
	Tributyltin	µg/L	24-hour composite	semiannually
	Pesticide ^[7]	µg/L	24-hour composite	semiannually
	TCDD ^[8]	µg/L	24-hour composite	semiannually
	Remaining EPA priority pollutants ^[9] excluding asbestos	µg/L	24-hour composite/ grab for VOCs	semiannually
	Radioactivity ^[10]	PCi/L	24-hour composite	semiannually

Footnote:

- [1]. This number corresponds to the compound number found in Table 1 of CTR. It is simply the order in which the 126 priority pollutants were listed 40 CFR section 131.38 (b)(1).
- [2]. The discharger has the option of collecting grab temperature samples on a daily basis or using a recorder to take continuous temperature readings.
- [3]. If any result of a weekly BOD analysis yields a value greater than the 30-day average limit, the frequency of analysis shall be increased to daily within one week of knowledge of the test result for at least 30 days and until compliance with the 7-day and 30-day average BOD limits is demonstrated; after which the frequency shall revert to weekly.
- [4]. MBAS is Methylene blue active substances and CTAS is cobalt thiocyanate active substances. These substances disturb the surface tension, which affects insects and can affect gills in aquatic life.
- [5]. See Section VI.4.B.
- [6]. See Section VI.4.A.
- [7]. Pesticides are, for purposes of this order, those six constituents referred to in 40 CFR, Part 125.58 (m) (demeton, guthion, malathion, methoxychlor, mirex, and parathion).
- [8]. In accordance with the SIP, the Discharger shall conduct monitoring for the seventeen 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD or dioxin) congeners in the effluent and in receiving water stations HW23 and HW33, surrounding the discharge point. The Discharger shall use the appropriate Toxicity Equivalence Factor (TEF) to determine Toxic Equivalence (TEQ). Where TEQ equals the product between each of the 17 individual congeners' (i) concentration analytical result (C_i) and their corresponding Toxicity Equivalence Factor (TEF_i), (i.e., $TEQ_i = C_i \times TEF_i$). Compliance with the Dioxin limitation shall be determined by the summation of the seventeen individual TEQs, or the following equation:

$$\text{Dioxin concentration in effluent} = \sum_{i=1}^{17} (TEQ_i) = \sum_{i=1}^{17} (C_i)(TEF_i)$$
- [9]. Please see Attachment B-1.
- [10]. 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 the stipulated criteria, analyze for Tritium, Strontium-90 and Uranium.

4. Effluent Toxicity Testing

A. Acute Toxicity Testing

- a. **Methods and Test Species** - The Discharger shall conduct the acute toxicity tests on 24-hour composite effluent samples in accordance with the following protocols. The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA 821-R-02-012, 2002), or *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA 821-R-02-014, 2002) using mysid (*Mysidopsis bahia*) or topsmelt (*Atherinops affinis*); and *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) using topsmelt (*Atherinops affinis*). If topsmelt in the West Coast chronic test methods manual is not available, the presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA 821-R-02-012, 2002), or *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA 821-R-02-014, 2002) using silversides (*Menidia beryllina*).

In lieu of conducting the standard acute toxicity testing with topsmelt, the Discharger may elect to report the results or endpoint from the first 48 hours of the chronic toxicity test as the results of the acute toxicity test, but only if the Discharger uses USEPA's August 1993 protocol (EPA/600/4-90/027F) to conduct the chronic toxicity test.

If the effluent toxicity requirements in Section I.2.H.b.i. or I.2.H.b.ii. of this Order is not met, the Discharger shall conduct six additional tests over a 12-week period. The Discharger shall ensure that results of a failing acute toxicity test are received by the Discharger within 24 hours of completion of the test and the additional tests shall begin within 5 business days of receipt of the result. If the additional tests indicate compliance with acute toxicity limitation, the Discharger may resume regular testing. However, if the results of any two of the six accelerated tests are less than 90% survival, then the Discharger shall begin a Toxicity Identification Evaluation (TIE). The TIE shall include all reasonable steps to identify the sources of toxicity. Once the sources are identified, the Discharger shall take all reasonable steps to reduce toxicity to meet the objective.

If the initial test and any of the additional six acute toxicity bioassay tests results are less than 70% survival, the Discharger shall immediately implement Initial Investigation Toxicity Reduction Evaluation (TRE)

Workplan. Once the sources are identified the Discharger shall take all reasonable steps to reduce toxicity to meet the requirements.

b. **Frequency**

- i. Screening - The Discharger shall conduct acute toxicity test screening every 2 years for three consecutive months, with the first screening under this Monitoring Program to be conducted in 2005. Re-screening shall be conducted at a different time of year from the previous screening. Screening tests shall be conducted using a marine vertebrate species and a marine invertebrate species.
- ii. Regular toxicity tests - After the screening period, monitoring shall be conducted monthly using the most sensitive marine species.

B. **Chronic Toxicity Testing**

- a. **Methods and Test Species** - The Discharger shall conduct the critical life stage chronic toxicity tests on 24-hour composite 60% or 100%* effluent samples in accordance with EPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995), EPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, October 2002 (EPA-821-R-02-014), or current version.

- * If either the red abalone (*Haliotis rufescens*) or the giant kelp (*Macrocystis pyrifera*) is chosen as one of final test species, then **60%** effluent is allowed to be used, then the chronic toxicity shall not exceed the monthly median of 1.67 TUC trigger (see Section I.2.I.c.i. of the accompanying Permit). For the red abalone and the giant kelp the highest concentration to be tested is **60%** effluent, because they cannot survive in 100% effluent. If topsmelt is selected as the most sensitive species (see Section I.2.I.c.ii. of the accompanying Permit), then 100% effluent shall be used in the chronic toxicity test procedures. Then, the chronic toxicity shall not exceed the monthly median of 1.0 TUC trigger in the 100% effluent tests.

Effluent samples shall be collected after all treatment processes and before discharge to the receiving water. Where a sample has been dechlorinated prior to submittal to the laboratory, a statement to that effect must be made in the report.

b. **Frequency**

- i. Screening - The Discharger shall conduct chronic toxicity test screening every two years for three consecutive months, with the first screening under this Monitoring Program to be conducted in 2005.

Re-screening shall be conducted at a different time of year from the previous screening. If the first suite of re-screening tests demonstrates that the same species is the most sensitive then the re-screening 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. Screening and re-screen tests shall be conducted using a vertebrate, an invertebrate, and a plant.

- ii. Regular toxicity tests - After the screening period, monitoring shall be conducted monthly using the most sensitive species.
- c. Toxicity Units - The chronic toxicity of the effluent shall be expressed and reported in Chronic Toxic Units, TU_c, where,

$$TU_c = \frac{100}{NOEC}$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent concentration that causes no observable effect on test organisms, as determined by the results of a critical life stage toxicity test.

- d. Accelerated Monitoring

If toxicity is detected as defined in Order No. R4-2005-0024, Section I.2.J.c., then the Discharger shall conduct six additional tests, approximately every 7 days, over a six-week period. The samples shall be collected and the tests initiated no less than 7 days apart. The Discharger shall ensure that they receive results of a failing chronic toxicity test within 24 hours of the completion of the test and the additional tests shall begin within 3 business days of the receipt of the result.

- i. If any three out of the initial test and the six additional tests results exceed 1.0 (topsmelt) or 1.67 (red abalone or giant kelp) TU_c trigger, the Discharger shall immediately implement the Initial Investigation of the TRE.
- ii. If implementation of the initial investigation TRE Workplan indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger shall return to the normal sampling frequency required in Sections VI.3 of this MRP.
- iii. If all of the six additional tests required above do not exceed 1.0 (topsmelt) or 1.67 (red abalone or giant kelp) TU_c, then the Discharger may return to the normal sampling frequency required in Sections VI.3. of this MRP.

- iv. If a TRE/TIE is initiated prior to completion of the accelerated testing schedule required, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer.

C. Quality Assurance

- a. Concurrent testing with a reference toxicant shall be conducted. Reference toxicant tests shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).
- b. If either the reference toxicant test or effluent test or receiving water does not meet all test acceptability criteria (TAC) as specified in the test methods manuals (EPA-821-R-02-012 and EPA-821-R-02-014), then the Discharger must re-sample and re-test within 14 days.
- c. Because the freshwater whole effluent sample will be diluted by hypersaline brine (prepared from natural seawater, in accordance with the test methods manual) prior to conducting the marine chronic toxicity test, a hypersaline brine control shall also be used.

D. Steps in TRE and TIE

- a. Following a TRE trigger, the Discharger shall initiate a TRE in accordance with the facility's initial investigation TRE Workplan. At a minimum, the Discharger shall use EPA manuals EPA/600/2-88/070 (industrial) or EPA/833B-99/002 (municipal) as guidance, or current version. The Discharger shall expeditiously develop a more detailed TRE Workplan for submittal to the Executive Officer within 15 days of the trigger, that will include but not limited to:
 - i. Further actions to investigate and identify the cause of toxicity;
 - ii. Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity;
 - iii. Standards the Discharger will apply to consider the TRE complete and for the return to normal sampling frequency; and,
 - iv. A schedule for these actions.
- b. The following is a stepwise approach in conducting the TRE:
 - i. Step 1 includes basic data collection. Data collected as part of the accelerated monitoring required may be used to conduct the TRE.
 - ii. Step 2 evaluates optimization of the treatment system operation, facility housekeeping, and the selection and use of in-plant process chemicals.

- iii. If Steps 1 and 2 are unsuccessful, Step 3 implements a TIE employing all reasonable efforts, and using currently available TIE methodologies. The objective of the TIE is to identify the substance or combination of substances causing the observed toxicity.
- iv. Assuming successful identification or characterization of the toxicant(s), Step 4 evaluates final effluent treatment options;
- v. Step 5 evaluates within plant treatment options; and,
- vi. Step 6 consists of confirmation once a toxicity control method has been implemented.

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of implementation of these control measures may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring finds there is no longer toxicity (or six consecutive chronic toxicity results less than or equal to monthly median of 1.0 (topsmelt) or 1.67 (red abalone or giant kelp) TUC).

- c. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the EPA acute and chronic manuals, EPA/600/6-91/005F (Phase I) /EPA/600/R-96-054 (for marine), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III) as guidance.
- d. If a TRE/TIE is initiated prior to completion of the accelerated testing schedule required, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer.
- e. Toxicity tests conducted as part of a TRE/TIE may also be used for compliance, if appropriate.
- f. The Board recognizes that toxicity may be episodic and identification of causes of and reduction of sources of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.
 - i. If all the results of the six additional tests are in compliance with the chronic toxicity 1.0 (topsmelt) or 1.67 (red abalone or giant kelp) TUC trigger, the Discharger may resume regular monthly testing.

- ii. If the results of any of the six accelerated tests exceeds 1.0 (topsmelt) or 1.67 (red abalone or giant kelp) TUc, the Discharger shall continue to monitor weekly until six consecutive weekly tests are in compliance. At that time, the Discharger may resume regular monthly testing.
- iii. If the results of two of the six tests, or any two tests in a six-week period, exceed 1.0 (topsmelt) or 1.67 (red abalone or giant kelp) TUc, the Discharger shall initiate a TRE.
- iv. If implementation of the initial investigation TRE workplan (see item E, below) indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger shall return to the regular testing frequency.

E. Preparation of an Initial Investigation TRE Workplan

Within 90 days of the effective date of this Order and permit, the Discharger shall submit a copy of its initial investigation TRE workplan to the Executive Officer of the Regional Board for approval. The Discharger shall use the USEPA manual, *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833B-99/002, as guidance. This workplan shall describe the steps the Discharger intends to follow if the toxicity exceeds 1.0 (topsmelt) or 1.67 (red abalone or giant kelp) TUc, and should include, at a minimum, the following:

- a. Description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency;
- b. Description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and,
- c. If a TIE is necessary, an indication of the person who will conduct the TIE (i.e., an in-house expert or an outside contractor), or current version.

F. Reporting

- a. The Discharger shall submit a full report of the toxicity test results, including any accelerated testing conducted during the month as required by this permit. Test results shall be reported in Toxicity Units (TUc) for chronic toxicity and in percent survival for acute toxicity with the discharge monitoring reports (DMR) for the month in which the test is conducted.
- b. If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, pursuant to Section VI.4.D.f.iv. of this MRP, then those results also shall be submitted with the DMR for the period in which the Investigation occurred.
 - i. The full report shall be submitted by the fifteenth day of the third month following each monthly sampling period.

- ii. The full report shall consist of (1) the results; (2) the dates of sample collection and initiation of each toxicity test; (3) the acute toxicity average limit or chronic toxicity limit; and (4) printout of the toxicity program (ToxCalc or CETIS) results.
- iii. Test results for toxicity tests also shall be reported according to the appropriate manual chapter on Report Preparation and shall be attached to the DMR. Routine reporting shall include, at a minimum, as applicable, for each test:
 - sample date(s)
 - test initiation date
 - test species
 - end point values for each dilution (e.g. number of young, growth rate, percent survival)
 - NOEC value(s) in percent effluent
 - TUc values $\left(TU_c = \frac{100}{NOEC}\right)$
 - mean percent mortality (+standard deviation) after 96 hours (or applicable test duration) in 100% effluent (if applicable)
 - NOEC and LOEC (Lowest Observable Effect Concentration) values for reference toxicant test(s)
 - available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia).
- iv. The Discharger shall provide a compliance summary, which includes a summary table of toxicity data from at least eleven of the most recent samples.
- v. The Discharger shall notify this Regional Board immediately of any toxicity exceedance and in writing 14 days after the receipt of the results of a monitoring limit or trigger. The notification will describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by the permit, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

5. Tertiary Filter Treatment Bypasses

- A. During any day that the filters are bypassed (also see Section VII.5 of this MRP), the Discharger shall monitor the effluent for BOD, suspended solids, settleable solids, and oil and grease, on a daily basis, until it is demonstrated that the filter “bypass” has not caused an adverse impact on the receiving water.
- B. The Discharger shall maintain a chronological log of tertiary filter treatment process bypasses, to including the following:
 - a. Date and time of bypass start and end;
 - b. Total duration time; and,
 - c. Estimated total volume bypassed.
- C. The Discharger shall notify Regional Board staff by telephone within 24 hours of the filter bypass event.
- D. The Discharger shall submit a written report to the Regional Board, according to the corresponding monthly self-monitoring report schedule. The report shall include, at a minimum, the information from the chronological log. Results from the daily effluent monitoring, required by Section VI.5.A. above, shall be submitted to the Regional Board in the Discharger’s self-monitoring report as soon as the results become available.

VII. RECEIVING WATER MONITORING REQUIREMENTS

(Footnotes are on pages T-30 and T-32)

- 1. All receiving water stations, except the CB-1 and CB-2 stations (shoreline stations, at Cabrillo Beach), shall be located by state of the art navigational methods (e.g., DGPS); other means (e.g., visual triangulation, fathometer readings) may be used to improve the accuracy of locating stations. Forty-five stations are located around the Outfall, Harbor, Shallow Water Habitat, near Cabrillo Beach, and outside of Harbor. These stations are used to collect samples of water quality, bacteria, benthos, sediment chemicals, and fish tissue.

In the event that a sampling station is temporarily or permanently obstructed due to construction activities for creating new habitat, storage sites, or pier, the station may be abandoned upon notification to the Regional Board once final determination is made regarding the status of such station.

The permittee shall report the locations (latitude and longitude) of any relocated stations to this Regional Board within 15 days of the effective date of this Order. All receiving water stations may be subject to redesignation by this Regional Board.

A. Water Quality Monitoring Stations (Figure M1) –

<u>Station Number</u>	<u>Latitude</u>	<u>Longitude</u>
HW20	33° 43' 38.5" N	118° 13' 58.5" W
HW21	33° 43' 34.9" N	118° 14' 12" W
HW23	33° 43' 27" N	118° 14' 38.5" W
HW24	33° 43' 23.1" N	118° 14' 52" W
HW33	33° 43' 19.6" N	118° 14' 36.2" W
HW40	33° 43' 29.5" N	118° 13' 51.8" W
HW41	33° 43' 25.6" N	118° 14' 4.9" W
HW43	33° 43' 17.7" N	118° 14' 32" W
HW44	33° 43' 14.8" N	118° 14' 44.9" W
HW47	33° 42' 56.8" N	118° 15' 55.8" W
HW49	33° 42' 40" N	118° 16' 43" W
HW50	33° 43' 19.5" N	118° 13' 45" W
HW51	33° 43' 15.8" N	118° 13' 57.8" W
HW53	33° 43' 7.3" N	118° 14' 24.3" W
HW54	33° 43' 3.3" N	118° 14' 38" W
HW56	33° 42' 44" N	118° 15' 32.7" W
HW62	33° 43' 2.3" N	118° 14' 4.2" W
HW63	33° 42' 58" N	118° 14' 17.2" W
HW64	33° 42' 53.5" N	118° 14' 30.7" W
HW65	33° 42' 33.4" N	118° 15' 11.7" W

B. Microbiological Monitoring Stations (Figure M2) --

<u>Station Number</u>	<u>Latitude</u>	<u>Longitude</u>
CB-1	33° 42' 48" N	118° 16' 57" W
CB-2	33° 42' 41" N	118° 16' 57" W
HW07	33° 43' 21" N	118° 16' 12" W
HW16	33° 43' 20" N	118° 15' 42" W
HW20	33° 43' 38.5" N	118° 13' 58.5" W
HW24	33° 43' 23.1" N	118° 14' 52" W
HW29	33° 42' 57" N	118° 16' 38" W
HW33	33° 43' 19.6" N	118° 14' 36.2" W
HW44	33° 43' 14.8" N	118° 14' 44.9" W
HW49	33° 42' 40" N	118° 16' 43" W
HW50	33° 43' 19.5" N	118° 13' 45" W
HW53	33° 43' 7.3" N	118° 14' 24.3" W
HW54	33° 43' 3.3" N	118° 14' 38" W
HW56	33° 42' 44" N	118° 15' 32.7" W
HW62	33° 43' 2.3" N	118° 14' 4.2" W
HW64	33° 42' 53.5" N	118° 14' 30.7" W

C. Benthic and Sediment Monitoring Stations (Figure M3) –

<u>Station Number</u>	<u>Latitude</u>	<u>Longitude</u>
HM2	33° 43' 23" N	118° 14' 41.5" W
HM3	33° 43' 21.8" N	118° 14' 33.4" W
HM4	33° 43' 33.3" N	118° 13' 55.7" W
HM6	33° 43' 16.8" N	118° 14' 38" W
HM7	33° 43' 19.5" N	118° 13' 45" W
HM8	33° 43' 7.3" N	118° 14' 24.3" W
HM9	33° 42' 57.8" N	118° 14' 17.5" W
HM10	33° 42' 48.8" N	118° 14' 43" W
HM11	33° 42' 44.2" N	118° 15' 32.5" W
HM12	33° 42' 46" N	118° 16' 15.3" W
HM13	33° 42' 39" N	118° 14' 4.8" W

D. Trawl Sampling Stations (Figure M4) –

<u>Station Number</u>	<u>Latitude</u>	<u>Longitude</u>
HT5	33° 42' 39" N	118° 14' 4.8" W
HT7	33° 43' 21.8" N	118° 14' 33.4" W
HT9	33° 43' 33.5" N	118° 14' 6" W
HT10	33° 42' 51.9" N	118° 14' 36.3" W
HT12*	33° 42' 51.9" N	118° 14' 36.3" W
HT13*	33° 43' 15.5" N	118° 13' 58" W

*: Obstructed stations of HT8 and HT11 due to the Pier 400 Submerged Sediment Storage Site have been relocated and replaced with HT12 and HT13.

E. Acute Toxicity Sampling Stations (M5) --

<u>Station Number</u>	<u>Latitude</u>	<u>Longitude</u>
HW23	33° 43' 27" N	118° 14' 38.5" W
HW33	33° 43' 21.8" N	118° 14' 33.4" W

F. Chronic Toxicity Sampling Stations (M5) --

<u>Station Number</u>	<u>Latitude</u>	<u>Longitude</u>
HW24	33° 43' 23.1" N	118° 14' 52" W
HW43	33° 43' 17.7" N	118° 14' 32" W

2. Type and frequency of sampling

A. Water Quality Monitoring

- a. Sampling shall consist of quarterly water quality surveys for water quality profiles, weather and sea-surface observations, and discrete samples conducted during the 1st quarter (January, February, and March), the 2nd quarter (April, May, and June), the 3rd quarter (July, August, and September), and the 4th quarter (October, November, and December). Surface discrete samples shall be taken at 12 stations (HW20, HW23, HW24, HW33, HW44, HW49, HW50, HW53, HW54, HW56, HW62, and HW64, Figure M1) for fecal coliform microbiological and ammonia^[14] analysis. Depth profiles^[1] for salinity, temperature, transmissivity, density, dissolved oxygen, chlorophyll, and pH shall be conducted monthly at all 20 harbor stations (HW20, HW21, HW23, HW24, HW33, HW40, HW41, HW43, HW44, HW47, HW49, HW50, HW51, HW53, HW54, HW56, HW62, HW63, HW64, and HW65, Figure M1). Profiles shall be extended from the surface to as close to the bottoms as practicable using standard oceanographic sampling procedures. The monitoring parameter shall be coordinated with conductivity-temperature-depth (CTD) operations in order to obtain discrete samples simultaneously with commencement of the CTD cast.

Parameter	Unit	Type of Sample	Sample Frequency
Salinity	psu	Discrete sampling at specified depths ^[1]	quarterly
Temperature	°C	Discrete sampling at specified depths ^[1]	quarterly
Transmissivity	% transmission	Discrete sampling at specified depths ^[1]	quarterly
Density	Kg/m ³	Discrete sampling at specified depths ^[1]	quarterly
Dissolved oxygen	mg/L	Discrete sampling at specified depths ^[1]	quarterly
Chlorophyll	µg/L	Discrete sampling at specified depths ^[1]	quarterly
pH	pH unit	Discrete sampling at specified depths ^[1]	quarterly
Fecal coliform/E. coli	MPN or CFU/100mL	Discrete surface sample ^[5]	quarterly
Ammonia ^[14]	µg/L	Discrete surface sample ^[5]	quarterly
Observations ^[2]	---	---	quarterly

- b. In the event of stormy weather that makes sampling hazardous or impractical, these samples can be omitted, provided that such omissions do not occur in consecutive weeks or in more than four weeks in a calendar year.
- c. If a kelp bed is present at any of the 23 harbor stations, sampling shall be conducted at the edge of the kelp bed. The actual locations of all sampling

stations shall be reported in the monthly monitoring reports.

- d. Monthly depth profiling shall be conducted at the harbor stations on the same day, if practical.

B. Microbiological Monitoring Stations:

- a. Microbiological monitoring shall be conducted at CB-1 and CB-2 (shoreline stations, Figure M2) as follows:

Parameter	Unit	Type of Sample	Sample Frequency
Total coliform ^[3]	MPN or CFU/100 mL	Ankle-deep water	5 times/week
Enterococcus ^[3]	MPN or CFU/100 mL	Ankle-deep water	5 times/week
Fecal coliform/E. coli ^[3]	MPN or CFU/100 mL	Ankle-deep water	5 times/week
Observations ^[4]	---	---	5 times/week

In the event of stormy weather that makes sampling hazardous or impractical, these samples can be omitted, provided that such omissions do not occur more than 10 days in any calendar year.

- b. Microbiological monitoring shall be conducted at 7 stations (HW07, HW16, HW29, HW33, HW49, HW56, and HW64, Figure M2) as follows:

Parameter	Unit	Type of Sample	Sample Frequency
Total coliform ^[3]	MPN or CFU/100 mL	Surface ^[5]	5 times/month
Enterococcus ^[3]	MPN or CFU /100 mL	Surface ^[5]	5 times/month
Fecal coliform/E. coli ^[3]	MPN or CFU /100 mL	Surface ^[5]	5 times/month
Observations ^[6]	---	---	5 times/month

- c. Microbiological monitoring shall be conducted at 10 stations (HW 20, HW24, HW44, HW50, HW53, HW54, and HW62, Figure M2) as follows:

Parameter	Unit	Type of Sample	Sample Frequency
Fecal coliform/E. coli ^[3]	MPN or CFU /100 mL	Surface ^[5]	monthly
Observations ^[6]	---	---	monthly

In the event of stormy weather that makes sampling hazardous or impractical, these samples can be omitted, provided that such omissions do not occur in consecutive weeks or in more than four weeks in a calendar year.

If a kelp bed is present at any 17 harbor stations, sampling shall be conducted at the edge of the kelp bed. The actual locations of all sampling stations shall be reported in the monthly monitoring reports.

If another stakeholder, or interested party in the watershed conducts a similar study or similar monitoring as that which is specified in this MRP, then the Discharger may, in lieu of duplicative sampling, submit the results of the study and other relevant information, such as raw data, related QA/QC documentation, etc., in the corresponding monitoring report.

C. Toxicity Monitoring:

- a. Acute and chronic toxicity monitoring shall be conducted as follows:

Parameter	Unit	Type of Sample	Sample Frequency
Acute Toxicity (HW23 and HW33)	% Survival	mid-depth	quarterly/ semiannually
Chronic Toxicity (HW24 and HW43)	TUc	mid-depth	quarterly/ semiannually

- b. In the event of stormy weather that makes sampling hazardous or impractical, these samples can be omitted.
- c. If a kelp bed is present at any of the 5 harbor stations, sampling shall be conducted at the edge of the kelp bed. The actual locations of all sampling stations shall be reported in the monitoring reports.
- d. Toxicity monitoring and the other monitoring shall be conducted at the harbor stations on the same day, if practical.
- e. If the first 2-year data do not show any exceedances, then the sample frequency will be reduced from quarterly to semiannually. In case of any exceedances, the sample frequency shall be immediately resumed to quarterly, until 2-year data no longer show any exceedances.

D. Harbor Bottom Monitoring:

- a. Local Benthic Trends Survey:

This survey addresses the question: "Are benthic conditions under the influence of the discharge changing over time?" The data collected are used for regular assessment of trends in sediment contamination and

biological response along a fixed grid of sites within the influence of the discharge.

- i. Eleven harbor stations (HM2 to HM4 and HM6 to HM13, Figure M3) shall be sampled annually during the 3rd quarter (July, August, and September) for benthic monitoring following protocol described in the most current edition of the Field Operations Manual for Marine Water-Column, Benthic and trawl Monitoring in southern California. One sample shall be taken at each station for benthic infauna for community analyses by means of a 0.1 m² (1.1 ft²) modified VanVeen sediment grab sampler. The entire contents of each sample shall be passed through a 1.0-mm screen to retrieve the benthic organisms.
- ii. The following determinations shall be made for each station, where appropriate: identification of all organisms to lowest possible taxon; community structure analysis for each station^[7]; mean, range standard deviation, and 95% confidence limits, if appropriate, for value determined in the community analysis. The discharger may be required to conduct additional "statistical analyses" to determine temporal and spatial trends in the marine environment.

If a kelp bed is present at any of the 11 harbor stations, sampling shall be conducted at the edge of the kelp bed. The actual locations of all sampling stations shall be reported in the monitoring reports.

b. Sediment/Chemical Monitoring

One sample (upper two centimeters) shall be collected at 11 harbor stations (HM2 to HM4 and HM6 to HM13) with a VanVeen sediment grab and analyzed for the following parameters:

- i. Annual samples during the 2nd quarter (July, August, and September) - arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, cyanide, phenolic compounds (chlorinated), phenolic compounds (non-chlorinated), total halogenated organic compounds, aldrin and dieldrin, endrin, HCH, chlordane, total DDT, DDT derivatives^[8], total PCB, PCB derivatives^[9], toxaphene, total PAH, PAH derivatives^[10], detected priority pollutants^[11], and compounds on the local 303(d) list.
- ii. Annual samples during the 3rd quarter (July, August, and September) - dissolved sulfides (pore water), TOC and grain size (sufficiently detailed to calculate percent weight in relation to phi size).

If a kelp bed is present at any of the 11 harbor stations, sampling shall be conducted at the edge of the kelp bed. The actual locations of all sampling stations shall be reported in the monitoring reports.

c. Local Demersal Fish and Invertebrate Survey:

This survey addresses the question: “Is the health of demersal fish and epibenthic invertebrate communities in the vicinity of the discharge changing over time?” The data collected are used for regular assessment of temporal trends in community structure along an array of sites within the influence of the discharge. Data will also be collected on trash and debris to contribute to the Santa Monica Bay Restoration Project’s Sources and Loadings Program.

- i. Six trawling stations (HT5 to HT11, Figure M4) shall be sampled biannually in the 3rd quarter (July, August, and September) and the 1st quarter (January, February, and March) for demersal fish and epibenthic invertebrates following protocol described in the most current edition of the Field Operations Manual for Marine Water-Column, Benthic and Trawl Monitoring in Southern California. Trawling shall be conducted at each station with a standard 7.62-meter head rope otter trawl (1.5-inch mesh in the body at the net and 0.5-inch mesh in the cod end), towed parallel to the specified depth contour for a duration of 5 minutes (elapsed bottom time) at a uniform speed approximately 2.0 knots.
- ii. Fish and invertebrates collected by trawls shall be identified to the lowest possible taxon. Fish shall be size-classed*. Wet-weight biomass shall be estimated for all species. Community structure analyses shall be conducted for each station^[12]. Abnormalities and disease symptoms shall be described and recorded (e.g. Fin erosion, lesions, tumors, parasites and color abnormalities).

- *. An attempt should be made to size-class all fish. For the rare occasions when size classing is not possible (e.g., a huge catch of a single species), a subsample of several hundred fish should be measured. When this occurs, the reason should be noted on the data sheet.

d. Local Bioaccumulation Trends Survey:

This survey addresses the question: “Is fish tissue contamination in the vicinity of the outfall changing over time?” The data collected are used for regular assessment of temporal trends in white croaker (*Genyonemus lineatus*) tissue.

- i. Muscle and liver tissue analyses for selected priority pollutants and lipids shall be conducted annually on white croaker. Ten individuals^[13] shall be collected by divers with spear guns or by hand, hook and line, or trawl, from the vicinity of the TITP discharge area.
- ii. Each individual muscle tissue sample shall be analyzed separately. Liver tissue samples from each site may be combined to form two

composites representing five individuals each or each individual liver tissue may be analyzed separately.

- iii. Tissue samples from white croaker shall be analyzed for the following priority pollutants and other parameters: total DDT, DDT derivatives^[8], total PCB, PCB derivatives^[9], wet weight, and % lipid.

e. Local Seafood Safety Survey:

This survey addresses the question: "Are seafood tissue concentrations below levels that will ensure public safety?"

- i Muscle tissue analyses for selected priority pollutants and lipids shall be conducted annually on a sport fish other than white croaker. Ten individuals^[13] shall be collected by divers with spear guns or by hand, hook and line, or trawl.
- ii Each individual muscle tissue sample shall be analyzed separately.
- iii Tissue samples from the sport fish shall be analyzed for the following priority pollutants and other parameters: total DDT, DDT derivatives^[8], total PCB, PCB derivatives^[9], wet weight, and % lipid."

f. Regional Monitoring:

Regional monitoring may include benthic surveys, demersal fish and invertebrate surveys, and predator risk surveys, but may add or delete surveys as directed by the Steering Committee.

i. Regional Benthic survey

- * This regional survey addresses the questions: 1) "What is the extent, distribution, magnitude and trend of ecological change in soft-bottom benthic habitats within the Southern California Bight?"; and 2) "What is the relationship between biological response and contaminant exposure?" The data collected will be used to assess the condition of the sea-floor environment and the health of the biological communities in the Bight.
- * Sampling Design - A regional survey of benthic conditions within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by participants represented on the Regional Steering Committee. The Discharger provided support to the Bight'03 benthic survey by participating in or performing the following activities:

Participation on the Steering Committee
Participation on relevant Technical Committees (e.g.,
Information Management, Field Methods & Logistics, Benthos,
and Chemistry)
Field sampling at sea
Infaunal sample analysis
Sediment chemistry analysis
Data management
This level of participation was consistent with that provided by
the Discharger during the 1998 Regional Benthic Survey. The
next regional survey is expected to take place in 2008.

ii. Regional Demersal Fish and Invertebrate Survey

- * This regional survey addresses the questions: 1) "What is the extent, distribution, magnitude and trend of ecological change in demersal fish and epibenthic invertebrate communities within the Southern California Bight?" and 2) "What is the relationship between biological response and contaminant exposure?" The data collected will be used to assess the condition of the sea-floor environment and health of biological resources in the Bight.
- * Sampling Design - A regional survey of trawl-caught demersal fish and epibenthic invertebrates within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by the participants as represented in the Regional Steering Committee. The Discharger provided support to the Bight'03 survey by participating in or performing the following activities:

Participation on the Steering Committee
Participation on relevant Technical Committees (e.g.,
Information Management, Field Methods & Logistics, Fish &
Invertebrates)
Field sampling at sea
Tissue chemical analysis
Data management

This level of participation was consistent with that provided by
the Discharger to the 1998 Regional Benthic Survey. The next
regional survey is expected to occur in 2008.

iii. Regional Seafood Safety Survey

- * This regional survey addresses the question: "Are seafood tissue levels within the Southern California Bight below levels that ensure public safety?" The data collected will be used to

assess levels of contaminants in the edible tissue of commercial or recreationally important fish within the Bight relative to Advisory Tissue Concentrations.

- * Sampling Design - A regional survey of edible tissue contaminant levels in fish within the Southern California Bight shall be conducted at least once every ten years, encompassing a broader set of sampling sites and target species than those addressed in the local seafood survey. The objective is to determine whether any unexpected increases or decreases in contaminant levels have occurred in non-target species and/or at unsampled sites. The final survey design may be determined cooperatively by participants represented on a Regional Steering Committee or by the State of California's Office of Environmental Health and Hazard Assessment. The Discharger shall provide support to a Regional Seafood Safety Survey by participating in or performing the following activities:

Participation on a Steering Committee

Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, and Chemistry)

Field sampling at sea

Tissue chemical analysis

Data management

The Discharger's participation shall be consistent with that provided by the Discharger to similar regional bioaccumulation surveys.

iv. Regional Predator Risk Survey

- * This regional survey addresses the question: "Are fish body burdens within the Southern California Bight a health risk to higher trophic levels in the marine food web?" The data collected will be used to estimate health risk to marine birds, mammals and wildlife from the consumption of fish tissue.
- * Sampling Design - A regional survey of whole fish body burdens of contaminants within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by participants represented on the Regional Steering Committee. The Discharger provided support to the Bight'03 Predator Risk Survey by participating in or performing the following activities:

Participation on the Steering Committee
Participation on relevant Technical Committees (e.g.,
Information Management, Field Methods & Logistics, and
Chemistry)
Field sampling at sea
Tissue chemical analysis

This level of participation was consistent with that provided by
the Discharger to the 1998 Regional Predator Risk Survey. The
next regional survey is expected to occur until in 2008.

- g. The outfall shall be inspected a minimum of once every five years. Inspections shall include general observations and photographic records of the outfall pipes and surrounding ocean bottom. A detailed structural analysis of the pipes shall be conducted using underwater television/videotape and submarine visual inspection, where appropriate, to provide a comprehensive, report on the discharge pipe system from shallow water to its respective terminus.

Additional parameters for analysis may be added to this list by the Executive Officer.

Footnotes for Receiving Water Monitoring Program

- [1]. Depth profile measurement shall be obtained by using multiple sensors to measure parameters throughout the entire water column (from the surface within the first 0.5 m to 2 m above the seabed).
- [2]. Receiving Water Observations of water color, turbidity, odor, and unusual or abnormal amounts of floating or suspended matter in the water or on the beach, rocks and jetties, or beach structures shall be made and recorded at stations. The character and extent of such matter shall be described. The dates, times and depths of sampling and these observations shall also be reported.
- [3]. In addition to reporting the actual concentration of bacterial organisms in each sample collected from shoreline and harbor stations, the median of the latest 6-month period shall also be determined and reported. During a wet-weather event, stormwater runoff will impact inshore and offshore stations. The day of rain (0.1 inch and greater) plus three following days worth of bacteriology data should be expected from Single Sample and Geomean limits.
- [4]. Observations at CB-1 and CB-2 consist of tallying items of sewage origin (plastic goods – feminine tampon applications, or rubber goods – rings from male condoms) and non-sewage origin (ocean debris, seaweed, refuse, tar, and dead marine organisms) along 1 50-foot reach of shoreline, centered around the station. Other observations at CB-1 and CB-2 include any unusual odors, particularly those that could be of sewage origin, the volume of flow from storm drains, change in water color due to plankton, and the presence of oil or tar. Additionally, at S2, observations include water and air temperature, weather, and sea conditions. Harbor observations at HW07, HW16, HW29, HW33, HW49, HW56, and HW64

include water color, turbidity, presence of items of sewage and non-sewage origin, and weather. Daily rainfall data should be obtained from the National Weather Service for the Los Angeles Civic Center.

- [5]. All Harbor bacteriological samples shall be collected just below the surface within the first 0.5 meter.
- [6]. Receiving Water Observations of water color, turbidity, odor, and unusual or abnormal amounts of floating or suspended matter in the water or on the beach, rocks and jetties, or beach structures shall be made and recorded at stations. The character and extent of such matter shall be described. The dates, times and depths of sampling and these observations shall also be reported. Daily rainfall data should be obtained from the National Weather Service for the Los Angeles Civic Center.
- [7]. 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.
- [8]. At a minimum, 4,4' DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.
- [9]. At a minimum, chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.
- [10]. At a minimum 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.
- [11]. Detected priority pollutants are those previously measured in detectable concentrations in effluent, sludge, sediment and tissue analyses. A tentative list of detected priority pollutants shall be submitted to the Executive Officer for approval prior to conducting the priority pollutant analyses.
- [12]. Including wet weight of fish and invertebrate species (all individuals of a species should be collectively weighted to the nearest 0.1Kg), number of species, number of individuals per species, total numerical abundance per station, number of individuals in each 1-centimeter size class for each species of fish, species of richness, species diversity (e.g., Sjammppm-Wiener), species evenness and dominance, similarity analysis (e.g., Bray-Curtis, Jacquard, or Sorenson) cluster analyses or other appropriate multivariate statistical techniques approved by the Executive Officer. Mean, standard, deviation, and 95% confidence limits, if appropriate, shall be calculated for these values.
- [13]. The ten largest individuals of each fish species collected shall be analyzed. All white croaker shall be larger than 125 millimeters (standard length). Standard length, weight, and gonadal index shall be recorded.
- [14]. Regional Board staff request that the City conduct monthly ammonia sampling of the receiving water for the first year. The results will be used to evaluate if the

dilution credit of 61 is applicable to ammonia. The monitoring frequency at the beginning of the second year will be reduced from monthly to quarterly.

3. In the event of a spill or bypass of raw or partially treated sewage from the TITP into the Harbor, total and fecal coliform analyses shall be made on grab samples collected at all potentially affected receiving water stations and at least one unaffected ambient receiving water station.

Coliform samples shall be collected at each station on the date of the spill or bypass, and daily on each of the following four days or until coliform levels in the receiving water are within normal range and the bypass or spill has ceased.

4. At the same time the receiving waters are sampled, observations shall be made in the reach bounded by the Stations, and a log shall be maintained thereof.

A. The following shall also be noted in the log:

- a. date and time of observation;
- b. weather days conditions (including air temperature);
- c. flow measurement (estimate);
- d. exact sampling location;
- e. users of water in the River (i.e. people washing, swimming and playing in the river, etc.);
- f. non-contact users (i.e. bikers, joggers, etc.); and,
- g. wildlife (i.e. birds, mammals, reptiles, estimated amount of vegetation).

B. A summary of these observations noted in the log shall be submitted with the monitoring reports.

5. The Discharger shall monitor the receiving water, during any day that the filters are bypassed, for BOD, suspended solids, settleable solids, and oil and grease, until it is demonstrated that the filter "bypass" has not caused an adverse impact on the receiving water. The Discharger shall submit a written report to the Regional Board, according to the corresponding monthly self monitoring report schedule. The report shall include, the results from the daily receiving water monitoring. However, if the results are not available in time to be submitted with the corresponding monthly report, then, the results shall be submitted to the Regional Board as soon as the results become available.
6. Receiving water samples shall not be taken during or within 72 hours following the flow of rainwater runoff into Harbor.

7. Sampling may be rescheduled at receiving water stations, if weather and flow conditions would endanger personnel collecting receiving water samples. The monthly monitoring report shall note such occasions.

VIII. COMPLIANCE WITH WEEKLY AND MONTHLY AVERAGE LIMITS

1. For any weekly monitored constituent: if any result of a weekly analysis exceeds the 7-day average limit (or the monthly average limit if no 7-day limit is prescribed), the frequency of analysis shall be increased to daily within one week of knowledge of the test results. Daily testing shall continue for at least 7 consecutive days and until compliance with the 7-day average limit is demonstrated, after which the frequency shall revert to weekly.
2. For any monthly monitored: if any result of a monthly analysis exceeds the monthly average limit, the frequency of analysis shall be increased to weekly within one week of knowledge of the test result. Weekly testing shall continue for at least 4 consecutive weeks and until compliance with the monthly average limit is demonstrated, after which the frequency shall revert to monthly.

IX. STORM WATER MONITORING AND REPORTING

The Discharger shall implement the Storm Water Monitoring Program and Reporting Requirements of the State Water Resources Control Board's General NPDES Permit No. CAS000001 and Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities (General Industrial Permit, Order No. 97-03-DWQ), or any subsequent revision of the General Industrial Permit.

X. PRETREATMENT ANNUAL REPORT

The Discharger shall submit pretreatment reports to the Regional Board as specified in Section III.6. of this Order No. R4-2005-0024.

Ordered by:

Jonathon S. Bishop
Executive Officer

Date: April 7, 2005

/DTSAL/

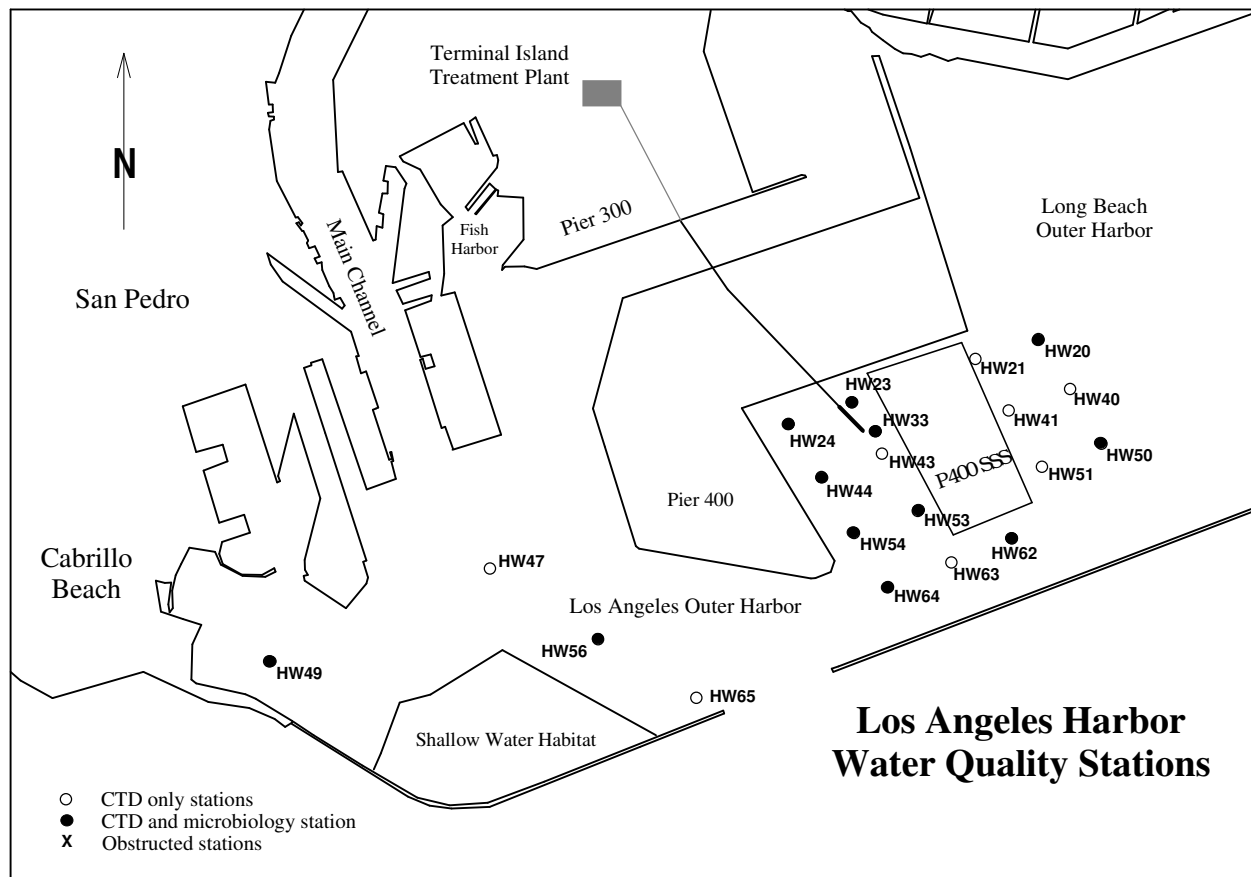


Figure M1 – Water Quality Sampling Stations in the Los Angeles Harbor

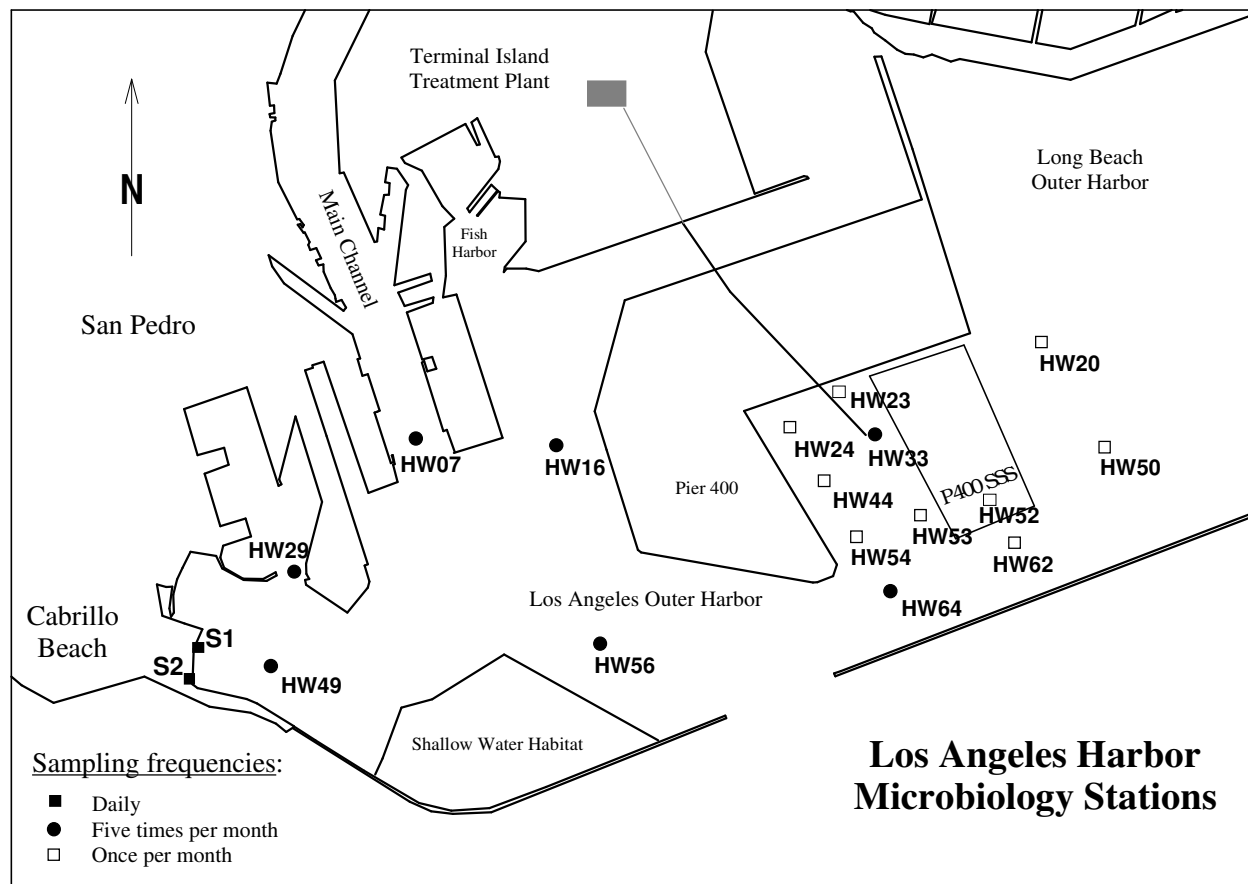


Figure M2 – Microbiological Sampling Stations in the Los Angeles Harbor

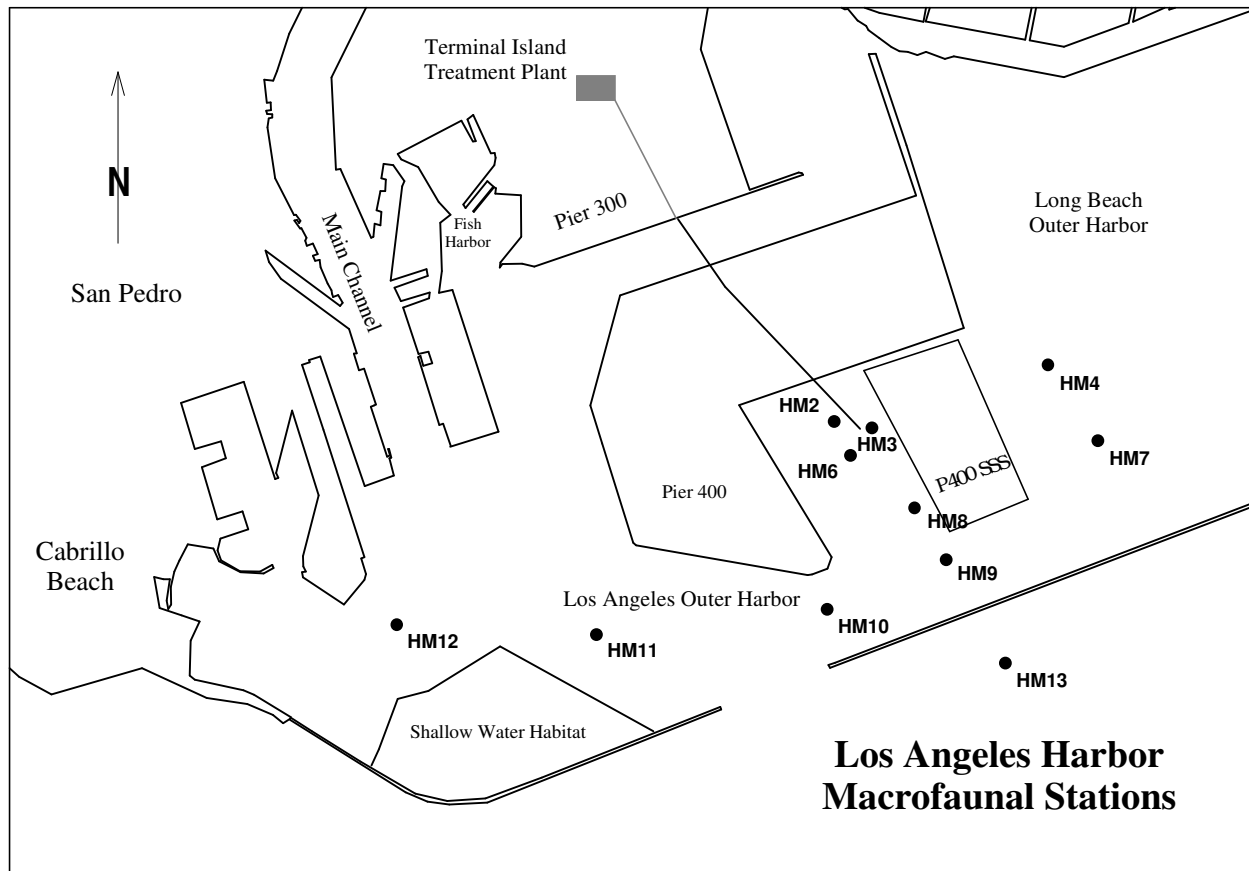


Figure M3 – Macrofaunal and Sediment/Chemical Sampling Stations in the Los Angeles Harbor

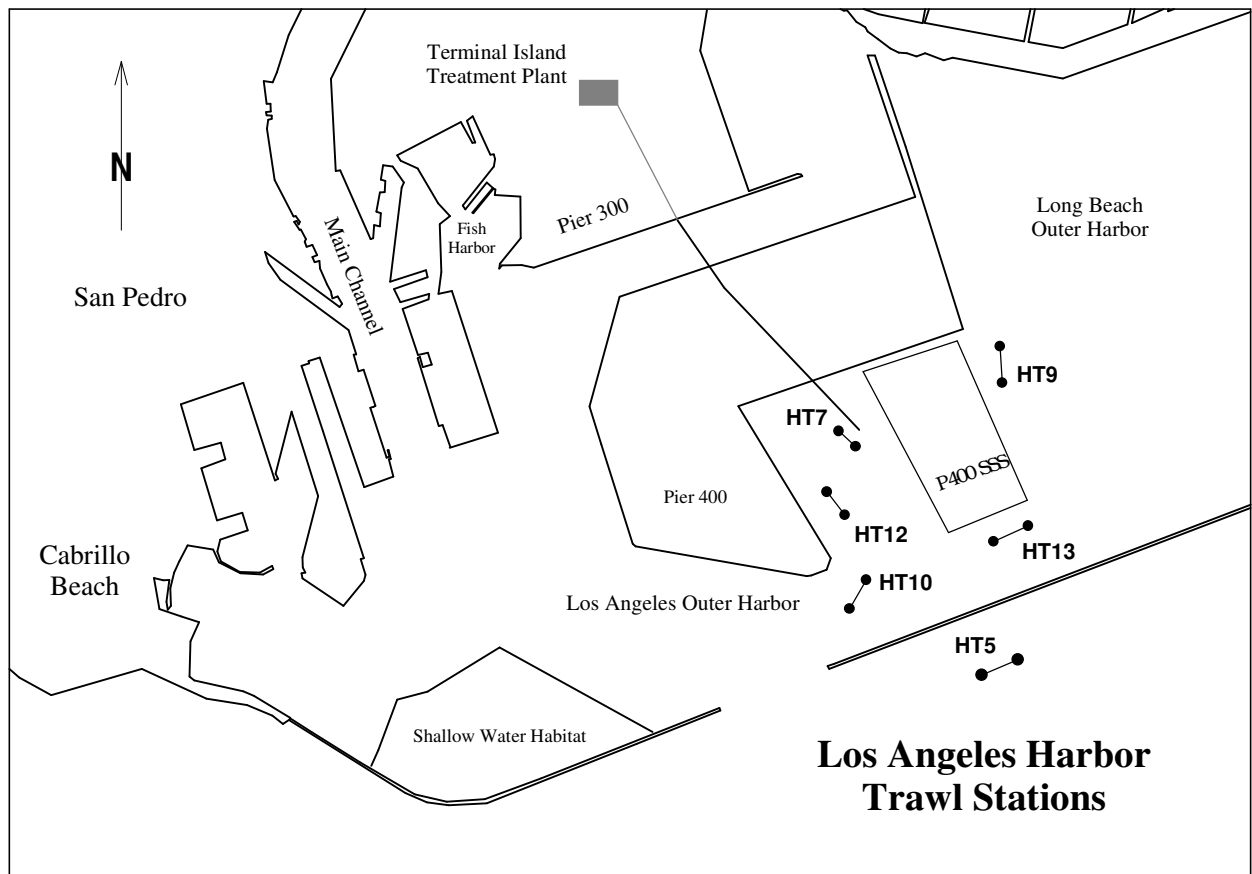


Figure M4 – Trawl Sampling Stations in the Los Angeles Harbor

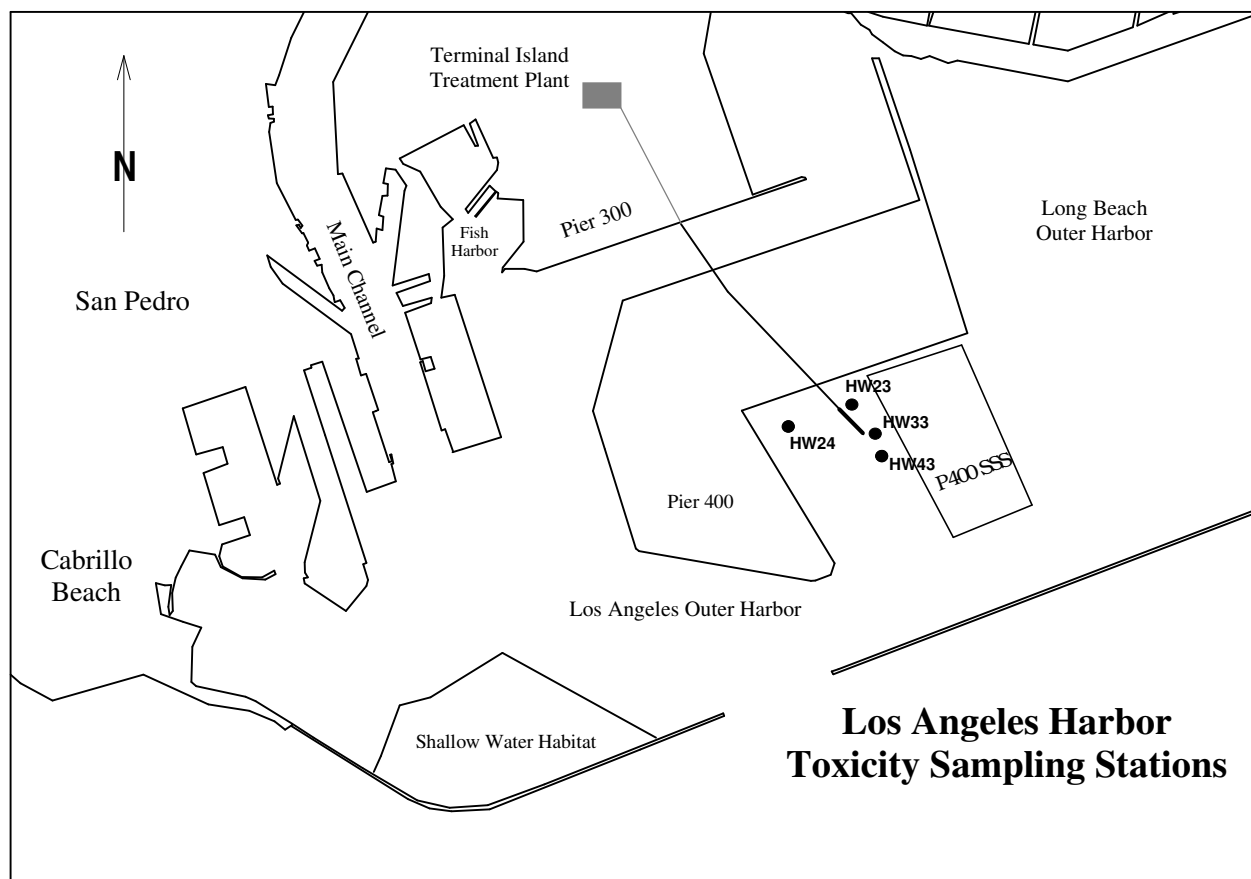


Figure M5 – Toxicity Sampling Stations in the Los Angeles Harbor