SUPPORTING DOCUMENT 4

State of California
Regional Water Quality Control Board
San Diego Region

REVISED
EXECUTIVE OFFICER SUMMARY REPORT
January 21, 2009

ITEM: 6

SUBJECT: PUBLIC HEARING: NPDES Permit Reissuance: City of San Diego Point Loma Ocean Outfall Discharge to Pacific Ocean. Discussion of Tentative NPDES Permit No. CA0107409 and waste discharge requirements for the City of San Diego E. W. Blom Point Loma Metropolitan Wastewater Treatment Plant discharge to the Pacific Ocean through the Point Loma Ocean Outfall, based on a variance from federal secondary treatment standards at Title 40 of the Code of Federal Regulations Part 133 (40 CFR 30), as provided for improved discharges under Clean Water Act section 301(h) and 40 CFR 125, Subpart G. The USEPA and the Regional Board will jointly conduct this public hearing to receive comments related to the tentative NPDES permit. The Regional Board will not adopt the NPDES permit at this hearing, but will formally act on the permit at a ~~subsequent~~ **later** Board meeting. The public comment period for this item will remain open until 5:00 p.m. on January 28, 2009 and all written comments submitted by the deadline will be considered by the Board before taking action on the tentative permit. (Tentative Order No. R9-2009-0001) *(Melissa Valdovinos)*

PURPOSE: The United States Environmental Protection Agency (USEPA) and the Regional Board will jointly conduct this public hearing to receive comments related to the tentative NPDES permit/order, including the tentative decision document (TDD) regarding the City's application for a variance from secondary treatment requirements of the Clean Water Act, pursuant to section 301(h) and (j)(5). The Regional Board will not adopt the NPDES permit/order at this hearing, but will formally act on the permit at a ~~subsequent~~ **later** Board meeting.

PUBLIC NOTICE: USEPA and the Regional Board published a Joint Notice of Proposed Actions in the San Diego Union Tribune newspaper on December 5, 2008, which announced this January 21, 2009 meeting and gave instructions on submitting comments on the tentative NPDES permit/order and TDD. The public comment period will remain open until January 28, 2009.

The tentative NPDES permit/order and TDD were sent out on December 5, 2008 to the City of San Diego Metropolitan

Wastewater Department (the City) and to all known interested parties and agencies. Copies were also made available for public review at the Regional Board web site and office on December 5, 2008.

DISCUSSION:

The City is currently discharging advanced primary treated wastewater to the Pacific Ocean via the Point Loma Ocean Outfall pursuant to Order No. R9-2002-0025, as amended, and NPDES Permit No. CA0107409, as modified. The effluent limitations are based, in part, on a variance from secondary treatment standards contained in the Clean Water Act as granted by USEPA pursuant to sections 301(h) and (j)(5). The variance results in biochemical oxygen demand (BOD) and total suspended solids (TSS) limitations that are less stringent than federal secondary requirements (based on Ocean Pollution Reduction Act [OPRA] requirements). Also in accordance with OPRA, a reduction of TSS mass emissions is required. In the draft permit/order, a limitation of 15,000 metric tons per year must be achieved on the permit effective date through December 31, 2013, and a limitation of 13,598 metric tons per year must be achieved by January 1, 2014.

The wastewater treatment system consists of mechanical bar screens, aerated grit removal, chemical addition, sedimentation, and partial chlorination. The Point Loma Ocean Outfall (PLOO) discharges the wastewater effluent approximately 4.5 miles offshore. Although this is beyond the limit of State-regulated ocean waters, potential plume migration within this limit warrants joint regulation of the effluent, from USEPA as well as the State.

Order No. R9-2002-0025 expired on June 15, 2008 but has been administratively extended. The City submitted an application for a renewed permit and 301(h) variance on December 14, 2007, and supplemental information requested by the Regional Board, on June 6, 2008. In a letter to the City of San Diego, dated November 13, 2008, the Regional Board deemed the application complete. The tentative permit/order establishes discharge requirements based on modified secondary treatment requirements in accordance with federal Clean Water Act sections 301(h) and (j)(5).

The need for water quality-based effluent limitations for toxic pollutants listed under Table B of the Ocean Plan was determined using the reasonable potential analysis (RPA) procedures of the Ocean Plan, which were added in 2005. The RPA procedures use a statistical approach to determine if the discharge has the potential to cause an exceedance of the water quality objectives for the Pacific Ocean for the toxic pollutants listed under Table B of the Ocean Plan, based on historical effluent data and the dilution factor for the PLOO. The RPA results for this discharge indicated that the effluent only has reasonable potential to cause exceedances of water quality objectives for chronic toxicity, chlordane, and heptachlor; therefore, water quality-based effluent limitations are included in the tentative order for these parameters. Performance goals, rather than effluent limitations, are included in the tentative order for all other toxic pollutant parameters of Table B of the Ocean Plan. Performance goals are not enforceable effluent discharge specifications or standards for the regulation of the discharge; however, inclusion of performance goals supports State and federal antidegradation policies and provides all interested parties with information regarding the expected levels of pollutants in the discharge that should not be exceeded to maintain the water quality objectives established in the Ocean Plan.

Comments on Tentative Order No. R9-2009-0001 have been received from eight parties as of January 7, 2009. One party expressed opposition to the operations of the plant. Six parties support and concur with the TDD and tentative NPDES permit/order. One party provided comments on disinfection technique, minimization of pharmaceuticals, laboratory analysis/reporting, and bacterial fate and transport. Additional comments received and any will be provided in the supplemental agenda packet. Written responses to comments will be prepared after the close of the comment period on January 28, 2009. Comments on the TDD will be addresses by USEPA.

SIGNIFICANT CHANGES:

The following areas in the tentative permit/order differ from the current permit/order:

1. Standard language for certain Findings, Standard Provisions, and the permit format recommended by the State Board are implemented.

2. A RPA was conducted for water quality-based limitations using data supplied by the City. Effluent limitations were included for the constituents with reasonable potential to exceed water quality objectives; chronic toxicity, chlordane, and heptachlor. Constituents that do not have reasonable potential or had inconclusive RPA results are assigned performance goals in the

tentative order. These constituents are also assigned monitoring requirements, but the results will be used for informational purposes only, not compliance determination.

3. Section VII – Compliance Determination has been added to explain how compliance with the requirements of the tentative order will be determined.

4. The 2005 California Ocean Plan's definition of the zone where bacterial objectives apply includes areas used for water contact sports, as determined by the Regional Board (i.e., waters designated as REC-1 for contact water recreation). The current permit applies these bacterial objectives to a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline. USEPA maintains that based on the Water Quality Control Plan for the San Diego Basin 9 (Basin Plan) definitions for REC-1 beneficial use and for Ocean Waters, REC-1 beneficial use must be protected throughout State of California territorial marine waters in the San Diego Region, which extend surface to bottom, out to three nautical miles from the shoreline. These bacterial objectives, which now include enterococcus, in addition to total and fecal coliforms, are applied throughout State of California territorial marine waters in the draft permit/order.

COMPLIANCE: The City has generally complied with the requirements of the current NPDES permit/order; noncompliance consists of the following:

1. The City violated the daily maximum effluent limitation of 205 chronic toxicity units (TUc) for chronic toxicity on May 4, 2003 at >667 TUc.

2. The City violated the daily maximum effluent limitation of 3 mg/L. for settleable solids on June 8, 2004 at 7.5 mg/l and on August 21, 2004 at 3.5 mg/L.

3. The City violated the 7-day average effluent limitation of 1.5 mg/L for settleable solids on June 12, 2004 at 1.8 mg/L and on June 14, 2004 at 1.7 mg/L.

4. The City violated the 30-day average effluent limitation of 4.7 mg/L for chlordane in July and August 2004 at 34.8 mg/L.

5. The City violated the 30-day average effluent limitation of 10 mg/L for heptachlor in July and August 2004 at 11 mg/L.

6. The City violated the 30-day average effluent limitation of 10 mg/L for heptachlor in July and August 2004 at 11 mg/L.

These violations resulted in an Administrative Civil Liability of $42,000 on September 14, 2005 (Order No. R9-2005-0229).

KEY ISSUES:

1. The tentative permit/order establishes discharge requirements based on modified secondary treatment requirements in accordance with federal Clean Water Act sections 301(h) and (j)(5), which results in less stringent BOD and TSS limitations. This has been the case for the past two permit terms as well.

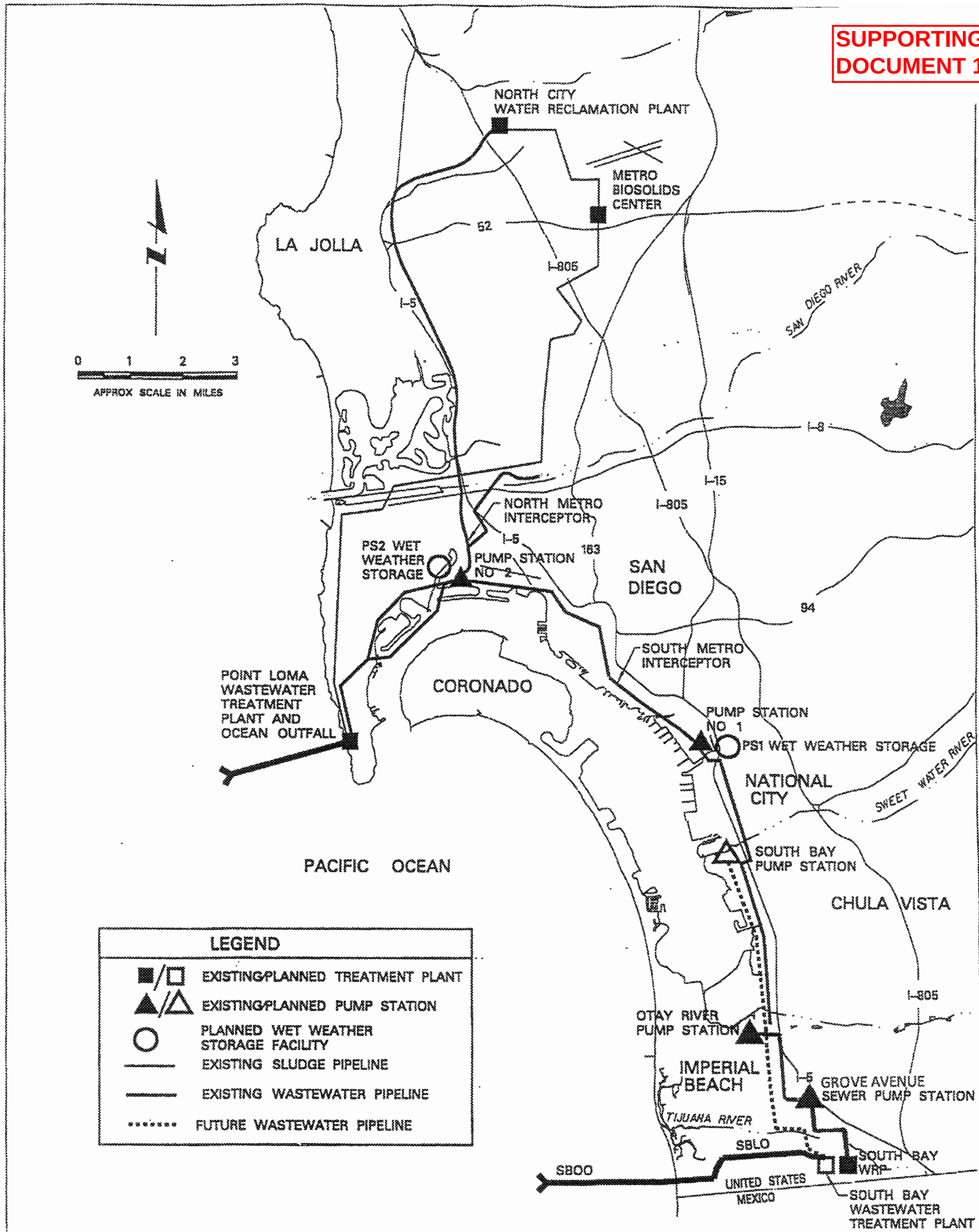
2. Bacterial objectives for enterococcus, total coliform, and fecal coliform, are applied beyond the shoreline area, throughout State of California territorial marine waters.

LEGAL CONCERNS: None

SUPPORTING DOCS:

1. Site Map
2. Joint Notice of Proposed Actions
3. USEPA Tentative Decision Document
4. Transmittal Letter for Draft NPDES Permit No. CA0107409 and Tentative Order No. R9-2009-0001
5. Draft NPDES Permit No. CA0107409 and Tentative Order No. R9-2009-0001
6. Comments on Draft NPDES Permit No. CA0107409 and Tentative Order No. R9-2009-0001, as of January 7, 2009 (from James Gilhooly, Metro Joint Powers Authority, City of Chula Vista, City of Poway, City of Coronado, City of La Mesa, Otay Water District, and Sierra Club)
7. **Additional Comments Letters from Padre Dam Municipal Water District (12/19/08), City of San Diego Metropolitan Wastewater Department (1/7/09), City of Imperial Beach (Received 1/9/09), National City (1/5/09), and City of El Cajon (1/5/09).**
8. **Section 301(j)(5) of the Clean Water Act, also know as the Ocean Pollution Reduction Act**

RECOMMENDATION: Not applicable; the Regional Board will not be acting on the NPDES permit at this meeting.



EXISTING AND PLANNED METRO SYSTEM FACILITIES

FIGURE 1

SUPPORTING DOCUMENT 2

JOINT NOTICE OF PROPOSED ACTIONS
by the

U.S. Environmental Protection Agency
Region IX, WTR-5
75 Hawthorne Street
San Francisco, CA 94105-3901
Telephone: (415) 972-3524

California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4353
Telephone: (858) 467-2952

Public Notice #: SD-08-W-18
Public Notice: December 5, 2008

The U.S. Environmental Protection Agency, Region IX (USEPA) and San Diego Regional Water Quality Control Board (Regional Water Board) are jointly issuing a notice of proposed actions under the Clean Water Act (CWA) and Division 7 of the California Water Code, and regulations thereunder. The USEPA and Regional Water Board are proposing to reissue a National Pollutant Discharge Elimination System (NPDES) permit and Waste Discharge Requirements (NPDES Permit No. CA0107409, Tentative Order No. R9-2009-0001) to the City of San Diego, Metropolitan Wastewater Department, 9192 Topaz Way, San Diego, CA 92123, for the E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant and Ocean Outfall.

The existing NPDES permit and Waste Discharge Requirements (NPDES Permit No. CA0107409, Order No. R9-2002-0025, as amended) are based on a variance from federal secondary treatment standards at 40 CFR 133, as provided for improved discharges under CWA section 301(h) and (j)(5) and 40 CFR 125, Subpart G. This sewage treatment plant is located at 1902 Gatchell Road, San Diego, California, and discharges chlorinated advanced (chemically assisted) primary treated municipal wastewater to the Pacific Ocean through the Point Loma Ocean Outfall, approximately 4.5 miles offshore, at a depth of about 300 feet. Sewage solids are treated and either land applied, used as alternative daily cover at a landfill, or disposed of at a municipal solid waste landfill.

The USEPA and Regional Water Board will conduct a joint public hearing on these proposed actions, on January 21, 2009, at 9:00 a.m., at the San Diego Regional Water Quality Control Board, Regional Board Meeting Room, 9174 Sky Park Court, Suite 100, San Diego, California. The Regional Water Board's participation in the NPDES permit issuance will ensure that all applicable State water quality standards are satisfied, and as such, the Regional Water Board intends that issuance of the NPDES permit with USEPA will serve as its certification of the federal permit under CWA section 401.

The Administrative Record, including the draft permit, fact sheet, comments received, permit application and report of waste discharge, USEPA's 301(h) tentative decision document, and other relevant documents, is available for public inspection at the USEPA and Regional Water Board office locations given above, Monday through Friday, between 8:30 a.m. and 4:30 p.m., beginning December 5, 2008. Interested persons may submit written comments on the 301(h) tentative decision and draft permit during the public comment period, either in person or by mail, to the attention of Robyn Stuber at USEPA (415-972-3524, stuber.robyn@epa.gov) and Melissa Valdovinos at the Regional Water Board (858-467-2724, mvaldovinos@waterboards.ca.gov); or at the public hearing. Although the public comment period will remain open until 5:00 p.m. on January 28, 2009, persons commenting on the 301(h) tentative decision and draft permit are strongly encouraged to submit their comments in writing by January 7, 2009, to facilitate consideration of the comments by the Regional Water Board on January 21. In order to assure the accuracy of the record, all oral comments made at the public hearing should be submitted also in writing. All timely comments received shall be considered in making the final 301(h) permit decision.

The Regional Water Board will not take final action on the NPDES permit at the January 21, 2009 hearing, but will formally act on the permit at a subsequent Board meeting. Upon issuance of a final permit decision and response to comments, the USEPA and Regional Water Board will notify the applicant and persons who submitted written comments or requested notice of the final 301(h) permit decision. When a final 301(h) decision and permit are issued, they will become effective 33 days following the date they are mailed to the discharger, unless a request for review is filed. Persons filing a request for review must have filed comments on the 301(h) tentative decision and draft permit, or participated in the public hearing, except as provided in 40 CFR 124.19.

The Regional Water Board facility is accessible to persons with disabilities. Individuals who have special accommodation or language needs should contact Ms. Lori Cost at (858) 467-2357 or lcosta@waterboards.ca.gov at least 5 working days prior to the meeting. TTY/TDD/Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

SUPPORTING DOCUMENT 3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IX
75 Hawthorne Street
San Francisco, CA 94105

City of San Diego's E. W. Blom Point Loma Metropolitan Wastewater Treatment Plant and Ocean Outfall Application for a Modified NPDES Permit Under Sections 301(h) and (j)(5) of the Clean Water Act	Tentative Decision of the Regional Administrator Pursuant to 40 CFR Part 125, Subpart G

I have reviewed the attached evaluation analyzing the merits of the application of the City of San Diego's request for the E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant and Ocean Outfall variance from secondary treatment requirements of the Clean Water Act (the Act), pursuant to section 301(h). It is my tentative decision that the Point Loma Wastewater Treatment Plant and Ocean Outfall be granted a variance in accordance with the terms, conditions, and limitations of the attached evaluation, based on sections 301(h) and (j)(5) of the Act.

My decision is based on available information specific to this particular discharge. It is not intended to assess the need for secondary treatment in general, nor does it reflect on the necessity for secondary treatment by other publicly owned treatment works discharging to the marine environment. This decision and the National Pollutant Discharge Elimination System (NPDES) permit implementing this decision are subject to revision on the basis of subsequently acquired information relating to the impact of the less-than-secondary discharge on the marine environment.

Under the procedures of the Permit Regulations, 40 CFR Part 124, public notice and comment regarding this tentative decision and accompanying draft NPDES permit will be made available to interested persons. Following the public comment period on this tentative decision and draft permit, a final decision and permit will be issued under the procedures in 40 CFR Part 124.

This tentative decision is issued without prejudice to the rights of any party to address the legal issue of the applicability of 33 U.S.C. section 1311(j)(5) to the City's future NPDES permits.

Dated: December 2, 2008 //S//.

Wayne Nastri
Regional Administrator

(Page intentionally blank)

TABLE OF CONTENTS

INTRODUCTION

The City of San Diego, California (the applicant or City) is requesting a renewal of its variance (sometimes informally called a "waiver" or "modification") under section 301(h) of the Clean Water Act (the Act, CWA), 33 U.S.C. section 1311(h), and the Ocean Pollution Reduction Act of 1994, 33 U.S.C. section 1311(j)(5), from the secondary treatment requirements contained in section 301(b)(1)(B) of the Act, U.S.C. section 1311(b)(1)(B). The City submitted its renewal application to the U.S. Environmental Protection Agency, Southwest Region (the EPA Region 9 or EPA), on December 10, 2007.

The variance is being sought for the E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant and Ocean Outfall, a publicly owned treatment works (POTW). The applicant is seeking a 301(h) variance to discharge wastewater receiving less-than-secondary treatment to the Pacific Ocean. Secondary treatment is defined in the regulations (40 CFR Part 133) in terms of effluent quality for total suspended solids (TSS), biochemical oxygen demand (BOD), and pH. The secondary treatment requirements for effluent TSS, BOD, and pH are listed below:

TSS: (1) The 30-day average shall not exceed 30 mg/l.
(2) The 7-day average shall not exceed 45 mg/l.
(3) The 30-day average percent removal shall not be less than 85 percent.

BOD: (1) The 30-day average shall not exceed 30 mg/l.
(2) The 7-day average shall not exceed 45 mg/l.
(3) The 30-day average percent removal shall not be less than 85 percent.

pH: At all times, shall be maintained within the limits of 6.0 to 9.0 units.

40 CFR 125.58(c) defines a large applicant as serving a population of 50,000 or more, or having a discharge flow of 5 million gallons per day (mgd) or more. The City meets the criteria for a large applicant. The City is requesting a modification for only TSS and BOD. (A modification for pH is not requested.) The applicant's proposed alternative effluent limits for TSS and BOD are shown in Volume III, Tables II.A-2 and II.A.5, of the application and require:

TSS: (1) The monthly average system-wide percent removal shall not be less than 80% percent (computed in accordance with Addendum No. 1 to Order No. R9-2002-0025, NPDES No. CA0107409).
(2) The monthly average treatment plant effluent concentration shall not be more than 75 mg/l.
(3) The annual treatment plant loading to the ocean shall not be more than 15,000 metric tons per year during years one through four of the permit and not more than 13,598 metric tons per year during year five of the permit. Compliance calculations for these loadings are not to include contributions from: Tijuana,

Mexico, via the emergency connection; federal facilities in excess of solids contributions received in calendar year 1995; Metro System flows treated in the City of Escondido; South Bay Water Reclamation Plant flows discharged to the South Bay Ocean Outfall; and emergency use of the Metro System by participating agencies over their capacity allotments.

BOD: The annual average system-wide percent removal shall not be less than 58 percent (computed in accordance with Addendum No. 1 to Order No. R9-2002-0025, NPDES No. CA0107409).

A concentration effluent limit for BOD (in mg/l) has not been requested by the applicant or required in NPDES permits for the 4.5 mile Point Loma Ocean Outfall. The alternative effluent limits requested by the applicant satisfy sections 301(h) and (j)(5) of the Act. The application is based on an "improved" discharge, as defined at 40 CFR 125.58(i). Facilities improvements proposed by the applicant during the period of the renewed NPDES permit (2009-2014) are effluent disinfection and follow-up studies. Volume III, Large Applicant Questionnaire section II.A.1, of the application.

This document presents the findings, conclusions, and recommendations of EPA Region 9, as to whether the applicant's proposed discharge complies with the criteria set forth in sections 301(h) and (j)(5) of the Act, as implemented by regulations at 40 CFR 125, Subpart G.

DECISION CRITERIA

Under section 301(b)(1)(B) of the Act, U.S.C. section 1311(b)(1)(B), POTWs in existence on July 1, 1977, were required to meet effluent limits based on secondary treatment as defined by the Administrator of EPA (the Administrator). Secondary treatment is defined by the Administrator in terms of three parameters: TSS, BOD, and pH. Uniform national effluent limitations for these pollutants were promulgated and included in National Pollutant Discharge Elimination System (NPDES) permits for POTWs issued under section 402 of the Act. POTWs were required to comply with these limitations by July 1, 1977.

Congress subsequently amended the Act, adding section 301(h) which authorizes the Administrator, with State concurrence, to issue NPDES permits which modify the secondary treatment requirements of the Act with respect to certain discharges. P.L. 95-217, 91 Stat. 1566, as amended by P.L. 97-117, 95 Stat. 1623; and section 303 of the Water Quality Act of 1987. Section 301(h) provides that:

> The Administrator, with the concurrence of the State, may issue a permit under section 402 [of the Act] which modifies the requirements of subsection (b)(1)(B) of this section [the secondary treatment requirements] with respect to the discharge of any pollutant from a publicly owned treatment works into marine waters, if the applicant demonstrates to the satisfaction of the Administrator that:

(1) there is an applicable water quality standard specific to the pollutant for which the modification is requested, which has been identified under section 304(a)(6) of this Act;

(2) such modified requirements will not interfere, alone or in combination with pollutants from other sources, with the attainment or maintenance of that water quality which assures protection of public water supplies and the protection and propagation of a balanced, indigenous population (BIP) of shellfish, fish and wildlife, and allows recreational activities, in and on the water;

(3) the applicant has established a system for monitoring the impact of such discharge on a representative sample of aquatic biota, to the extent practicable, and the scope of the monitoring is limited to include only those scientific investigations which are necessary to study the effects of the proposed discharge;

(4) such modified requirements will not result in any additional requirements on any other point or nonpoint source;

(5) all applicable pretreatment requirements for sources introducing waste into such treatment works will be enforced;

(6) in the case of any treatment works serving a population of 50,000 or more, with respect to any toxic pollutant introduced into such works by an industrial discharger for which pollutant there is no applicable pretreatment requirement in effect, sources introducing waste into such works are in compliance with all applicable pretreatment requirements, the applicant has in effect a pretreatment program which, in combination with the treatment of discharges from such works, removes the same amount of such pollutant as would be removed if such works were to apply secondary treatment to discharges and if such works had no pretreatment program with respect to such pollutant;

(7) to the extent practicable, the applicant has established a schedule of activities designed to eliminate the entrance of toxic pollutants from nonindustrial sources into such treatment works;

(8) there will be no new or substantially increased discharges from the point source of the pollutant into which the modification applies above that volume of discharge specified in the permit;

(9) the applicant at the time such modification becomes effective will be discharging effluent which has received at least primary or equivalent treatment and which meets the criteria established under section 304(a)(1)

> of the Clean Water Act after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged.
>
> For the purposes of this subsection the phrase “the discharge of any pollutant into marine waters” refers to a discharge into deep waters of the territorial sea or the waters of the contiguous zone, or into saline estuarine waters where there is strong tidal movement and other hydrological and geological characteristics which the Administrator determines necessary to allow compliance with paragraph (2) of this subsection, and section 101(a)(2) of this Act. For the purposes of paragraph (9), “primary or equivalent treatment” means treatment by screening, sedimentation and skimming adequate to remove at least 30 percent of the biochemical oxygen demanding material and of the suspended solids in the treatment works influent, and disinfection, where appropriate. A municipality which applies secondary treatment shall be eligible to receive a permit pursuant to this subsection which modifies the requirements of subsection (b)(1)(B) of this section with respect to the discharge of any pollutant from any treatment works owned by such municipality into marine waters. No permit issued under this subsection shall authorize the discharge of sewage sludge into marine waters. In order for a permit to be issued under this subsection for the discharge of a pollutant into marine waters, such marine waters must exhibit characteristics assuring that water providing dilution does not contain significant amounts of previous discharged effluent from such treatment works. No permit issued under this subsection shall authorize the discharge of any pollutant into marine estuarine waters which at the time of application do not support a balanced, indigenous population of shellfish, fish and wildlife, or allow recreation in and on the waters or which exhibit ambient water quality below applicable water quality standards adopted for the protection of public water supplies, shellfish and wildlife, or recreational activities or such other standards necessary to assure support and protection of such uses. The prohibition contained in the preceding sentence shall apply without regard to the presence or absence of a causal relationship between such characteristics and the applicant’s current or proposed discharge. Notwithstanding any of the other provisions of this subsection, no permit may be issued under this subsection for discharge of a pollutant into the New York Bight Apex consisting of the ocean waters of the Atlantic Ocean westward of 73 degrees 30 minutes west longitude and westward of 40 degrees 10 minutes north latitude.

EPA regulations implementing section 301(h) provide that a 301(h)-modified NPDES permit may not be issued in violation of 40 CFR 125.59(b) which requires, among other things, compliance with the provisions of the Coastal Zone Management Act (16 U.S.C. 1451 et seq.), the Endangered Species Act (16 U.S.C. 1531 et seq.), the Marine Protection Research and Sanctuaries Act (16 U.S.C. 1431 et seq.), and any other applicable provisions of State or federal law or Executive Order.

In addition, under the Ocean Pollution Reduction Act of 1994, 33 U.S.C. section 1311(j)(5)(B) and (C):

> An application under this paragraph shall include a commitment by the applicant to implement a waste water reclamation program that, at minimum, will –
>
> (i) achieve a system capacity of 45,000,000 gallons of reclaimed waste water per day by January 1, 2010; and
>
> (ii) result in a reduction in the quantity of suspended solids discharged by the applicant into the marine environment during the period of the modification.
>
> The Administrator may not grant a modification pursuant to an application submitted under this paragraph unless the Administrator determines that such modification will result in removal of not less than 58 percent of the biological oxygen demand (on an annual average) and not less than 80 percent of total suspended solids (on a monthly average) in the discharge to which the application applies.

In the following discussion, data submitted by the applicant are analyzed in the context of the statutory and regulatory criteria.

SUMMARY OF FINDINGS

Based upon review of the data, references, and empirical evidence furnished in the application and other relevant sources, EPA Region 9 makes the following findings with regard to the statutory and regulatory criteria:

1. The applicant's proposed discharge will comply with primary treatment requirements. [CWA section 301(h)(9); 40 CFR 125.60]

2. The applicant's proposed 301(h)-modified discharge will comply with the State of California's water quality standards for natural light and dissolved oxygen. (A modification for pH is not requested.) The applicant has sent a letter to the San Diego Regional Water Quality Control Board (Regional Water Board) requesting determination that the proposed discharge complies with applicable State law including water quality standards. In 1984, a Memorandum of Understanding was signed by EPA Region 9 and the State of California to jointly administer discharges that are granted modifications from secondary treatment standards. The joint issuance of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's certification/concurrence that the modified discharge will comply with applicable State law and water quality standards. A draft 301(h)-modified permit has been

jointly developed by the Regional Water Board and EPA Region 9. [Section 301(h)(1); 40 CFR 125.61]

3. The applicant has demonstrated it can consistently achieve State water quality standards and federal 304(a)(1) water quality criteria beyond the zone of initial dilution. [CWA section 301(h)(9); 40 CFR 125.62(a)]

4. The applicant's proposed discharge, alone or in combination with pollutants from other sources, will not adversely impact public water supplies or interfere with the protection and propagation of a balanced, indigenous population (BIP) of fish, shellfish and wildlife, and will allow for recreational activities. [CWA section 301(h)(2); 40 CFR 125.62(b), (c), (d)]

5. The applicant has a well-established monitoring program and has demonstrated it has adequate resources to continue the program. The applicant has proposed no changes to its existing monitoring program. EPA Region 9 and the Regional Water Board will review the applicant's existing monitoring program and revise it, as appropriate. These revisions will be included in the 301(h)-modified permit, as conditions for monitoring the impact of the discharge. [CWA section 301(h)(3); 40 CFR 125.63]

6. The applicant has sent a letter to the Regional Water Board requesting determination that the proposed discharge will not result in any additional treatment requirements on any other point or nonpoint sources. The adoption by the Regional Water Board of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's determination, pursuant to 40 CFR 125.59(f)(4), that the requirements under 40 CFR 125.64 are achieved. [CWA section 301(h)(4); 40 CFR 125.64]

7. The applicant's existing pretreatment program was approved by EPA Region 9 on June 29, 1982, and remains in effect. [CWA section 301(h)(5); 40 CFR 125.66 and 125.68]

8. The applicant has complied with urban area pretreatment requirements by demonstrating that it has an applicable pretreatment requirement in effect for each toxic pollutant introduced by an industrial discharger. The Urban Area Pretreatment Program was submitted to EPA Region 9 and the Regional Water Board in August 1996. This program was approved by the Regional Water Board on August 13, 1997 and EPA on December 1, 1998. [CWA section 301(h)(6); 40 CFR 125.65]

9. The applicant will continue to develop and implement both its existing nonindustrial source control program, in effect since 1985, and existing comprehensive public education program to minimize the amount of toxic pollutants that enter the treatment system from nonindustrial sources. [CWA section 301(h)(7); 40 CFR 125.66]

10. There will be no new or substantially increased discharges from the point source of the pollutants to which the 301(h) variance applies above those specified in the permit. [CWA section 301(h)(8); 40 CFR 125.67]

11. The applicant has sent letters to the U.S. Fish and Wildlife Service and NOAA National Marine Fisheries Service requesting determinations that the proposed discharge complies with applicable federal and State laws. The applicant has prepared a letter to the California Coastal Commission requesting a determination that the proposed discharge complies with applicable federal and State laws; this request will be transmitted to the California Coastal Commission after the 301(h) modified permit is adopted by the Regional Water Board. The issuance of a final 301(h)-modified permit is contingent upon receipt of determinations that the issuance of such permit does not conflict with applicable provisions of federal and State laws. [40 CFR 125.59]

12. In its operation of the Point Loma WTP, the applicant will continue to: achieve a monthly average system-wide percent removal for TSS of not less than 80 percent and an annual average system-wide percent removal for BOD of not less than 58 percent; and has implemented a water reclamation program that will result in a reduction in the quantity of suspended solids discharged into the marine environment during the period of the 301(h) modification. To ensure compliance with this requirement, EPA Region 9 is imposing permit conditions slightly different than those proposed by the applicant. In addition, the applicant has constructed a system capacity of 45 mgd of reclaimed water, thereby meeting this January 1, 2010 requirement. [CWA section 301(j)(5)]

CONCLUSION

EPA Region 9 concludes that the applicant's proposed discharge will satisfy CWA sections 301(h) and (j)(5) and 40 CFR 125, Subpart G.

RECOMMENDATION

It is recommended that the applicant be granted a CWA section 301(h) variance in accordance with the above findings, contingent upon satisfaction of the following conditions:

1. The determination by the Regional Water Board that the proposed discharge will comply with applicable provisions of State law, including water quality standards, in accordance with 40 CFR 125.61(b)(2). The adoption by the Regional Water Board of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's certification/concurrence, pursuant to 40 CFR Parts 124.53 and 124.54, that the requirements under 40 CFR 125.61(b)(2) are achieved.

2. The determination by the Regional Water Board that the proposed discharge will not result in any additional treatment requirements on any other point or nonpoint sources, in accordance with 40 CFR 125.64. The adoption by the Regional Water Board of a NPDES permit which incorporates both the federal 301(h) variance and State permit requirements will serve as the State's determination, pursuant to 40 CFR 125.59(f)(4), that the requirements under 40 CFR 125.64 are achieved.

3. The draft permit contains the applicable terms and conditions required by 40 CFR 125.68, for establishment of a monitoring program.

4. The determination by the California Coastal Commission that issuance of a 301(h)-modified permit does not conflict with the Coastal Zone Management Act, as amended.

5. The determination by the U.S. Fish and Wildlife Service that issuance of a 301(h)-modified permit does not conflict with applicable provisions of the federal Endangered Species Act, as amended.

6. The determination by the NOAA National Marine Fisheries Service that issuance of a 301(h)-modified permit does not conflict with applicable provisions of the federal Endangered Species Act, as amended, and the Magnuson-Stevens Fishery Conservation and Management Act, as amended.

7. Issuance of the 301(h)-modified permit assures compliance with all applicable requirements of 40 CFR 122 and 40 CFR 125, Subpart G.

DESCRIPTION OF TREATMENT SYSTEM

Treatment System

The City's treatment system is described in Volume III, Large Applicant Questionnaire section II.A, and Volume IV, Appendix A, of the application. The San Diego Metropolitan Sewage System (Metro System) provides for the conveyance, treatment, reuse, and disposal of wastewater within a 450-square mile service area for the City of San Diego and regional participating agencies (Figure A-1). Metro System facilities include wastewater collection interceptors and pump stations, wastewater treatment and water recycling plants, sludge pipelines and solids handling facilities, and two land/ocean outfall systems. Metro System facilities are owned by the City of San Diego and are managed and operated by the City's Metropolitan Wastewater Department. The City administers and executes contracts with each participating agency, monitors flows to the Metro System, bills and collects payments from participating agencies, and disburses all monies spent in connection with the Metro System. Wastewater collection systems that discharge to the Metro System are owned and operated by respective participating agencies. Current wastewater flows from the City comprise approximately 70 percent of the total Metro System flows. Remaining Metro System wastewater flows are contributed by the 15 Metro System participating agencies. Participating agency input to Metro System planning and operation is provided through the San Diego Metropolitan Wastewater Commission.

The following five groups of facilities comprise the Metro System: wastewater conveyance facilities; the Point Loma Wastewater Treatment Plant and Ocean Outfall; the North City Water Reclamation Plant; the Metro Biosolids Center and sludge conveyance facilities; and the South Bay Water Reclamation Plant and Ocean Outfall.

There have been improvements to Metro System facilities since the existing federal NPDES permit became effective in 2003. These include bringing the South Bay Water Reclamation Plant and recycled water users online within the service area of the South Bay Water Reclamation Plant and Ocean Outfall, and adding recycled water users within the North City Water Reclamation Plant service area. Figure A-2 presents a schematic of existing Metro System treatment and solids handling facilities which include the: Point Loma Wastewater Treatment Plant and Ocean Outfall, North City Water Reclamation Plant, South Bay Water Reclamation Plant and Ocean Outfall, and the Metro Biosolids Center. Waste solids from the South Bay Water Reclamation Plant (WRP) are conveyed to Point Loma WTP for treatment. Waste solids from Point Loma WTP and North City WRP are conveyed to the Metro Biosolids Center for dewatering and disposal.

Pump Station No. 2 is the largest and most important pump station within the Metro System. It is a reinforced concrete structure equipped with eight dry pit pumping units. With one pump serving as a standby unit, the pumping capacity is approximately 432 million gallons per day (mgd). All influent wastewater delivered to the Point Loma WTP is pumped through Pump Station No. 2 which also provides preliminary treatment in the form of coarse screening (4 units) and chemical addition (ferric chloride). Ferric chloride is added for odor control and to assist in coagulation/sedimentation at Point Loma WTP.

Point Loma WTP operates as a chemically-assisted primary treatment plant and is the terminal treatment facility discharging to the Point Loma Ocean Outfall (PLOO) and Pacific Ocean. The plant has rated capacities (with one sedimentation tank out of service) of 240 mgd annual average daily flow and 432 mgd peak wet weather flow. Point Loma WTP receives a blend of excess recycled water (during irrigation season), secondary treated effluent (during non-irrigation season), and waste plant streams from the 30 mgd North City WRP, return solids from the 15 mgd South Bay WRP, and untreated sewage from all other parts of the Metro System. The applicant states that of the approximately 170 to 180 mgd of wastewater treated, the estimated contribution from industrial users of the Metro System is 2.5 percent (Volume VII, Appendix K, of the application). The applicant states that inflow and infiltration is approximately 4 to 5 percent of the total flow into the treatment works (Volume II, EPA Form 3510-2A, of the application).

Point Loma WTP unit process and design criteria and loadings are provided in Table A-2 of Volume IV, Appendix A, of the application. Unit processes at the Point Loma WTP include: preliminary treatment with 15-millimeter mesh mechanical self-cleaning climber screens (5 units) to remove rags, paper, and other floatable material; chemical addition (ferric chloride) to screened wastewater and influent flow measurement at the Parshall flumes; aerated grit removal (6 units) including grit tanks, separators and washers; chemical addition (anionic synthetic polymer and hydrogen peroxide) at sedimentation basin entrances to enhance settling of solids and assist in stabilization and odor control; sedimentation basins (12 units) where flocculated solids (sludge) settle to the bottom and sum floats to the surface; and sludge and scum removal facilities. From the sedimentation basins, treated wastewater enters the effluent channel.

The following outfall conveyance facilities allow the treated effluent to be discharge to the PLOO through: (1) a direct connection with the sedimentation basins; (2) a throttling valve which regulates water surface levels in the outfall diversion structure; or (3) a bypass valve which can divert the effluent to the outfall via a vortex structure. The 7,154-meter PLOO extends approximately 7.24 kilometers (4.5 miles or 3.9 nautical miles) offshore to the edge of the mainland shelf and discharges at a depth of approximately 95 meters (312 feet). The outfall terminates in a "Y"-shaped diffuser, the center of which is located at: north latitude 32 degrees, 39 minutes, 55 seconds, and longitude 117 degrees west, 19 minutes, 25 seconds. From the outfall terminus, each leg of the diffuser extends approximately 805 meters (0.5 miles). Effluent discharge commenced at this location in November 1993.

Point Loma WTP provides onsite digestion of waste solids from the sedimentation basins with six anaerobic digesters. Biogas produced by the digesters is used for fueling an onsite cogeneration facility. Digested solids are pumped to the Metro Biosolids Center for dewatering and disposal. Dewatered solids are beneficially used as an alternate daily cover at a landfill or as a soil amendment. Screenings, grit, and scum are trucked to a landfill for disposal.

The City's recycled water operations are regulated by water reclamation requirements established by the San Diego Regional Water Board: Order No. 97-03 and addenda thereto for the 30 mgd North City WRP and Order No. 2000-203 for the 15 mgd South Bay WRP. The South Bay WRP secondary effluent discharge to the South Bay Ocean Outfall (SBOO) is regulated by Regional Board Order No. R9-2006-0067, NPDES No. CA0109045. Waste solids from North City WRP are directed to the Metro Biosolids Center for digestion and dewatering. Waste solids from the South Bay WRP are discharged to the sewer system for transport to Point Loma WTP for treatment and removal.

Improved Discharge

The City's 2007 application is based on an "improved" discharge, as defined at 40 CFR 125.58(i). Increases in Metro System flow (hydraulic) and load (suspended solids and biochemical oxygen demand) projections for long term facilities planning are projected at approximately 0.9 percent per year over the next 20 years (starting with the year 2008 projection). Section A.4 of the application (Volume IV, Appendix A) provides an overview of the new facilities and existing facility improvements that will be needed to meet discharge permit conditions for the Point Loma WTP and improve hydraulic capacity within the Metro System. The two categories of facility improvements needed over the next 20 years are: (1) facilities to handle projected increased Metro System hydraulic and solids loadings which focus on South Bay facilities of the Metro System and (2) facilities at the Point Loma WTP to comply with revised California Ocean Plan (SWRCB, 2005) bacteriological water quality standards.

During the next 5-year permit cycle, the applicant has proposed the following improvements to the Metro System. Volume III, Large Applicant Questionnaire section II.A.2, of the application. These improvements are: (1) the ongoing program to bring additional recycled water users online to reduce dry-weather North City WRP flows discharged downstream to the Point Loma WTP and PLOO and South Bay WRP flows discharged to the SBOO; and (2) effluent disinfection provided by the installation and implementation (operation) of prototype effluent disinfection facilities at the Point Loma WTP. Prototype effluent disinfection facilities have been installed at the Point Loma WTP to allow the discharge to comply with recreational body-contact bacteriological standards throughout the water column (ocean surface to ocean bottom) in all State-regulated waters (within three nautical miles of the coast). The City will perform and complete follow-up studies to assess the need for refinements or modifications to prototype disinfection facilities or operations. The City is proposing to implement effluent disinfection at the Point Loma WTP to achieve a 2.1 logarithm (approximately 99%) reduction in pathogen indicator organisms using a 7 mg/l dose rate of a 12 percent sodium hypochlorite solution in the effluent channel. (For reference, 1 milligram per liter is 1 part per million.) The application projects that the sodium hypochlorite solution will be entirely consumed by effluent chlorine demand during outfall transport, allowing the Point Loma discharge to maintain a zero chlorine residual as the effluent enters the outfall diffuser. The City may propose future modification of the prototype disinfection facilities or operations based on additional studies and following approval by the Regional Water Board and EPA.

As documented in Volume III, Large Applicant Questionnaire section II.A.3, of the application, the City has constructed 45 mgd of recycled water treatment capacity; during the period of the existing permit, the applicant has consistently achieved 80% removal of TSS and 58% removal of BOD; and reduced TSS mass emissions during the period of the 301(h) modification (in Tables II.A-3 and II.A-4 and Figure II.A-1, Volume III of the application). Except for a slight reduction in year five of the renewed permit, the City is not requesting any change in the mass emission rate effluent limits for TSS, the concentration effluent limit for TSS, or the percent removal effluent limits for TSS and BOD, from those in the existing permit (in Tables II.A-2 and II.A-5, Volume III of the application). “System-wide” percent removal is computed as specified in Addendum No. 1 to Order No. R9-2002-0025, NPDES No. CA0107409. Tables II.A-3 and II.A-4 include the contribution from South Bay WRP which is neither identified in amended Order No. R9-2002-0025, nor included in the computation of “system-wide” percent removal.

DESCRIPTION OF RECEIVING WATERS

Volume III, Large Applicant Questionnaire section II.B, of the application presents general information describing receiving waters for the Point Loma discharge. Volume VIII, Appendix N, of the application presents a detailed characterization of seasonal circulation patterns in the vicinity of the Point Loma discharge which was originally provided in the 1995 application. This characterization includes descriptions of regional and local bathymetry, regional currents, and currents and stratification in the Point Loma shelf area. (For reference, 1 meter is about 3.281 feet; 1 kilometer is 1,000 meters, or about 0.6214 statute miles or 0.5397 nautical miles; 1 statute mile is about 0.8684 nautical miles.)

Bathymetry

The waters of the Southern California Bight (SCB) overlie the continental borderland of southern California. The outer edge of the borderland lies about 250 to 300 kilometers offshore and is defined by a sharp change of slope at 1000 meters. The continental borderland consists of a number of offshore islands, submerged banks, submarine canyons, and deep basins. The result is an unusually narrow mainland shelf, which averages 3 kilometers in width (ranging from 1 to 20 kilometers) and ends in waters of 200 meters depth. The narrowness of the mainland shelf in the SCB makes it particularly susceptible to human activities. Shiff et al., 2000.

The mainland shelf off Point Loma is about 6.5 kilometers wide. Within this region, a narrow rocky shelf runs parallel to the coast and extends from the shoreline to water depths of about 17 to 20 meters. The outer edge of this rocky shelf is marked by the outer edge of kelp beds where the sea floor drops sharply by about 3 to 18 meters and terminates in a relatively smooth, gently sloping plain that extends seaward. This plain continues to gently slope seaward to water depths of about 90 to 95 meters, with only minor variations in direction and width for at least 15 kilometers north and south of the PLOO. The outer edge of the mainland shelf breaks at water depths of about 110 meters, as the bottom slopes sharply downward into the Loma Sea Valley. The PLOO discharges at the outer edge of this mainland shelf. The Loma Sea Valley axis lies about 15 kilometers offshore of Point Loma at a water depth of about 370 meters.

Currents

The local ocean current circulation in the vicinity of the PLOO occurs within the larger circulation of the California Current (the major southward-flowing surface current far offshore); the Southern California Counter Current (the inner northward-flowing leg of the counter-clockwise circulating gyre between the California Current and the coast); and the California Undercurrent (a northward flow beneath the Southern California Countercurrent at depths in excess of 100 meters).

Volume III and Volume VIII, Appendix N, of the application provide the following general characterization of the mainland shelf currents off the coast of Point Loma: the net subsurface flow (at a depth of 40 meters at the 60 meter contour) is upcoast at approximately 3 cm/sec; the net surface flow is downcoast at approximately 6 cm/sec; the net flow 1 to 2 meters above the ocean bottom has a strong offshore component that can exceed the longshore flow velocity; more than half the variations in longshore currents occur on time intervals longer than tidal periods; variations in cross-shore currents are dominated by tidal cycles; typical transport distances associated with tidal cycles are approximately 1 to 3 kilometers; waters along the nearshore shelf are dispersed with offshore waters on time scales of weeks; and long-term variability in currents can equal or exceed the seasonal variability. (For reference 1 cm/sec is about 0.6 m/min, or 1.1969 ft/min.)Table II.B-1 in Appendix III of the application summarizes 10th percentile, 50th percentile (median), and 90th percentile current speeds within the typical depth range of the PLOO wastefield (60 to 80 meters). Tenth percentile current speeds are typically 2 to 3 cm/sec and median current speeds are on the order of 7 to 10 cm/sec.

Stratification

The water column above the Point Loma outfall diffuser is density stratified by gradients in temperature and salinity. Salinity gradients are small for water temperatures above 11 to 12 degrees C, but they make an important contribution to the density gradients of lower temperature waters. The strongest density gradients exist during the summer in the upper portion of the water column due to the formation of a seasonal thermocline at depths that range from a few meters to tens of meters (typically around 5 to 20 meters). Surface water temperatures may reach 18 to 23 degrees C. Water temperatures are generally lowest in the late winter, when surface temperatures can fall to about 12 to 14 degrees C. During this time, the seasonal thermocline may disappear and the density gradients may be minimal. At water column depths in excess of about 45 meters, the strongest density gradients occur during the winter (typically in January). Although these density gradients are weak in comparison with the gradients existing in the upper portion of the water column during the summer, they are sufficient to trap the wastefield from the Point Loma discharge at depths of 30 meters, or more, below the surface. Modeling and receiving water monitoring data indicate that the wastefield is typically confined to the water depth interval between 55 and 87 meters (Volume III, Large Applicant Questionnaire section III.A.3, of the application).

PHYSICAL CHARACTERISTICS OF THE DISCHARGE

Outfall/Diffuser and Initial Dilution

40 CFR 125.62(a) requires that the proposed outfall and diffuser must be located and designed to provide adequate initial dilution, dispersion, and transport of wastewater to meet all applicable water quality standards and criteria at and beyond the boundary of the zone of initial dilution (ZID). This evaluation is based on conditions occurring during periods of maximum stratification and during other periods when discharge characteristics, water quality, biological seasons, or oceanographic conditions indicate

more critical situations may exist. The physical characteristics of the PLOO (including diffuser) are summarized in Volume III, Large Applicant Questionnaire section II.A.8, of the application.

In the 2007 application, the Metro System service area projected annual average flow for 2009 is 208 mgd and the peak flow is 463 mgd. The Metro System end-of-permit projected annual average flow for 2014 is 219 mgd and the peak flow is 486 mgd. This represents an average annual growth rate of 0.9 percent. For comparison, population within the Metro System service area increased at an annual growth rate of 1.07 percent from 1990 to 2000. By year 2025, the applicant projects the portion of Metro System flows directed to Point Loma WTP during inclement weather periods, when no recycled water use occurs, to approach 240 mgd.

The 1995 application for the Point Loma WTP was based on an end-of-permit projected flow of 205 mgd. The 2001 application was based on an end-of-permit projected flow of 195 mgd. For the 2007 application, the Point Loma WTP end-of-permit (2014) projected annual average flow is 202 mgd. Actual and projected effluent flow rates for the Point Loma WTP during the period of the existing and proposed permit are shown in Table 1.

Because the Point Loma WTP end-of-permit projected flow of 202 mgd is less than the end-of-permit projected flow of 205 mgd evaluated by EPA in the 1995 and 2001 applications, EPA believes that the projected flow of 205 mgd continues to be a reasonable estimate for evaluating initial dilutions in the 2007 application.

Chapter III of the California Ocean Plan requires that “Waste effluents shall be discharged in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.” This plan defines the “minimum initial dilution (Dm)” as the “… lowest average initial dilution within any single month of the year.” and specifies that “Dilution estimates shall be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure.”

The applicant has continued to provide two sets of initial dilution calculations employing flows of 205 mgd and 240 mgd. For the TDDs, EPA has only reviewed predictions based on an end-of-permit projected annual average flow of 205 mgd, because it is appropriate to the end of the five-year permit period.

Table 1. Actual and projected annual average and maximum daily/peak hour flows (mgd) for the Point Loma Ocean Outfall from 2001 through 2014.

Year	Observed Flows		Project Flows	
	Annual Average Flow[1]	Maximum Daily Flow	Projected Annual Average Flow[2]	Maximum Projected Peak Hour Flow[3]
2001	175	222	---	---
2002[4]	169	189	---	---
2003	170	223	---	---
2004	174	295	---	---
2005	183	325	---	---
2006	170	224	---	---
2007	161	206	---	---
2008	162[5]	233[5]	191	458[6]
2009	---	---	192	463[6]
2010	---	---	193	467[6]
2011	---	---	194	471[6]
2012	---	---	197	476[6]
2013	---	---	199	481[6]
2014	---	---	202	486[6]

[1] Data from monthly reports submitted to the Regional Water Board and EPA for 2001-2008. Maximum daily flow is the highest daily PLOO flow observed during the listed year.
[2] Average annual PLOO flow projections based on Metro System flow projections for long-term facilities planning. The flow projections for long-term facilities planning are conservative (overestimates that employ a factor of safety) to ensure that adequate future system capacity is maintained. Average annual PLOO flows will vary depending on hydrologic conditions, recycled water demands, and SBOO flows. These approximations are based on average annual recycled water use in the North City WRP service area of 7,210 AFY in 2008, 7,760 AFY by 2010, 8,260 AFY by 2012, linearly increasing beyond 2012 to 9,970 AFY (8.9 mgd) by 2027. Estimates are also based on combined South Bay WRP reuse and SBOO flows of 6,730 AFY in 2008, 6,930 AFY in 2010, 7,490 AFY in 2012, linearly increasing beyond 2012 to 8,850 AFY (7.9 mgd) by 2027. Estimates are also based on net annual Metro System flow reductions of 3.0 mgd from recycled water use from Padre Dam MWD, Santee WRP, and Otay Water District WRF.
[3] Maximum projected peak-hour wet-weather flow for a 10-year return period, per MWWD System wide Planning Design Event Analysis for Peak Flows and Volumes - PS1 and PS2, April 24, 1997. Values assume that no recycled water use occurs during a wet weather event. Maximum projected peak-hour flows represent short-term peak flows for purposes of assessing the ability of Metro System collection facilities to handle short-term instantaneous peak flows. Actual maximum peak hour flows in any year are likely to be significantly less than this projected once-in-10-year event.
[4] South Bay WRP is brought online.
[5] Preliminary values for January 1 through September 30, 2008.
[6] The City is reassessing peak hour wet-weather flow projections. As part of this assessment, the City is evaluating the need to add equalization storage at Pump Station Nos. 1 and 2 (or implementing alternative peak-flow management options) to increase the ability of Metro System conveyance facilities to handle potential maximum instantaneous peak flows.

The 1995 application for the Point Loma WTP was based on an end-of-permit projected annual average flow of 205 mgd. For this flow rate, the 50th percentile, flux-averaged initial dilution was predicted as 365:1 with currents and 300:1 without currents; the 5th percentile, flux-averaged initial dilution was predicted as 215:1 with currents and 194:1 without currents (based on time series data). For the water quality objectives in Table B of the California Ocean Plan, the lowest 30-day average initial dilution was predicted as 204:1 without currents (based on hydrocast data). Volume VIII, Appendix O, of the application. As reported in the 1995 and 2002 TDDs, EPA verified the City's estimate of initial dilution for the California Ocean Plan (204:1) by obtaining the modified RSB model and raw data used by the applicant; EPA's result for the minimum monthly average initial dilution was 195:1, for zero currents. This same initial dilution (195:1) was obtained by EPA using a selected set of model runs and EPA's version of RSB. Using EPA's UMERGE model, EPA's result for the minimum monthly average initial dilution was 179:1, for zero currents. Taken together, these independent modeling efforts by the applicant and EPA produced estimates for minimum monthly average initial dilution of 204:1, 195:1, and 179:1. The 1995 TDD concluded these values were similar given the inherent uncertainties associated with modeling and that each would provide a conservative estimate of initial dilution for evaluating compliance with Table B water quality objectives. EPA continues to use 204:1 for evaluating compliance with Table B water quality objectives in the California Ocean Plan and EPA's 304(a)(1) toxics water quality criteria for aquatic life which lack Table B objectives.

The 1995 TDD also evaluated the critical initial dilution with the applicant's modified RSB model and the EPA's RSB and UMERGE models using: peak 2-3 hour effluent flows (generally estimated to be 4/3 the average monthly effluent flow), all density profiles in the given month, and zero currents. This evaluation of critical initial dilution differs from the evaluation of the lowest average initial dilution within any single month specified for Table B water quality objectives in the California Ocean Plan. The combination yielding the lowest initial dilution was used as EPA's estimate for worst-case initial dilution. The worst-case initial dilution estimate was: 143:1 for the applicant's modified RSB model, 134:1 for EPA's RSB model, and 99:1 for the UMERGE model. This TDD continues to use the initial dilution of 99:1 to assess worst-case conditions for TSS and BOD.

Finally, the 1995 TDD calculated a long-term average initial dilution of 328:1 for evaluating compliance with EPA's toxics water quality criteria for human health (organisms only); this TDD continues to use the initial dilution of 328:1 to evaluate compliance with EPA's toxics water quality criteria for human health which lack Table B objectives in the California Ocean Plan.

Application of Initial Dilution to Water Quality Standards and Criteria

Based on the information summarized in the previous section, EPA concludes that: (1) the outfall and diffuser system are well designed and achieve a high degree of dilution; (2) the minimum monthly average initial dilution value of 204:1 provides a conservative estimate of initial dilution for evaluating compliance with applicable State water quality standards in Table B of the California Ocean Plan and EPA toxics water quality criteria for aquatic life; and (3) the long-term effective dilution value of 328:1 provides an appropriate estimate for evaluating compliance with EPA toxics water quality criteria for human health (organisms only) based on long-term exposure. As in the 1995 and 2002 TDDs, this evaluation uses the initial dilution value of 99:1 to assess worst-case conditions for suspended solids and dissolved oxygen concentrations following initial dilution. The application of these initial dilution values is summarized in Table 2.

Table 2. Initial dilution values for evaluating compliance with applicable State water quality standards and EPA's 304(a)(1) water quality criteria.

Initial Dilution Type	Initial Dilution Value	Source	Applicable Water Quality Standard 40 CFR 125.62(a)
Minimum monthly average initial dilution (1995 and 2002)	204:1	California Ocean Plan	Table B objectives
Minimum monthly average initial dilution	204:1	Amended 301(h) Technical Support Document	304(a)(1) criteria for acute and chronic aquatic life with no Table B objectives
Long-term effective dilution	328:1	Amended 301(h) Technical Support Document	304(a)(1) criteria for human health (organisms only) with no Table B objectives
Worst-case (critical) initial dilution	99:1	Amended 301(h) Technical Support Document	Suspended solids and dissolved oxygen

Zone of Initial Dilution

No modifications to the PLOO have been implemented since its construction that would affect the dimensions of the zone of initial dilution. Consequently, the PLOO zone of initial dilution remains unchanged from the City's two prior applications. The zone of initial dilution extends 93.5 meters (307 feet) on either side of the PLOO diffuser legs. Volume VIII, Appendix O, of the application presents estimates of distances associated with completion of initial dilution at the PLOO's design average dry weather flow of 240 mgd; Table III.A-3 in Volume III of the application, presents a statistical breakdown of computed horizontal downstream distances from outfall ports to the completion of the initial dilution process.

As previously described, the outfall terminates in a "Y"-shaped diffuser, the center of which is located at: north latitude 32 degrees, 39 minutes, 55 seconds, and longitude 117 degrees west, 19 minutes, 25 seconds. For reference, near-ZID stations F30 (for water quality monitoring) and E14 (for sediment monitoring) are located on the 98 meter (320 foot) depth contour at: north latitude 32 degrees, 39 minutes, 94 seconds, and longitude 117 degrees west, 19 minutes, 49 seconds; or 300 meters (984 feet) west of the diffuser wye. See Figures A-3 and A-4 for maps of water quality stations and sediment monitoring stations, respectively.

Dilution Water Recirculation

The effect of re-entrainment of the wastefield is to reduce the volumetric initial dilutions for the discharged effluent within the zone of initial dilution. Under CWA section 301(h)(9), in order for a 301(h) permit to be issued for the discharge of a pollutant into marine waters, such marine waters must exhibit characteristics assuring that water providing dilution does not contain significant amounts of previously discharged effluent from the treatment works.

This requirement was addressed by the City in the 1995 application. To estimate the potential for re-entrainment effects on the 30-day average concentration, the applicant made the assumption that receiving waters around the outfall contain all the wastewater discharged during a 30-day period (205 mgd for a total volume of 1.3×10^8 cubic meters). This is a very conservative assumption, as physical oceanographic models indicate the residence time for wastewater within the 30 by 12 kilometer (19 by 7.5 miles) area around the outfall is about 4.5 days. For the effluent flow of 205 mgd, the largest reductions for computed volumetric initial dilutions were around 12 percent, occurring in July and September; the smallest reductions were around 4 percent, occurring in January and February.

Based on EPA's review of 2002 through 2006 effluent data for toxics concentrations to exceed California Ocean Plan Table B water quality objectives and EPA water quality criteria for aquatic life and human health, these predicted reductions for initial dilution due to re-entrainment are not expected to affect discharge compliance with applicable water quality objectives and criteria.

APPLICATION OF STATUTORY AND REGULATORY CRITERIA

A. Compliance with Federal Primary Treatment, California Ocean Plan Table A, and CWA section 301(j)(5) Requirements

Under CWA section 301(h)(9) and 40 CFR 125.60, the applicant's wastewater effluent must be receiving at least primary treatment at the time the 301(h) variance becomes effective. 40 CFR 125.58(r) specifies that primary treatment means treatment by screening, sedimentation, and skimming adequate to remove at least 30 percent of the biological oxygen demanding material and other suspended solids in the treatment works influent, and disinfection, where appropriate. In Table A of the California Ocean Plan, publicly owned treatment works must, as a 30-day average, remove 75 percent of suspended solids from their influent stream before discharging wastewaters to the ocean. Turbidity in the effluent must not exceed 75 NTU as a 30-day average, 100 NTU as a 7-

day average, and 225 NTU at any time. Settleable solids in the effluent must not exceed 1.0 Ml/l as a 30-day average, 1.5 Ml/l as a 7-day average, and 3.0 Ml/l at any time. There are no Table A effluent requirements for biochemical oxygen demand. Finally, CWA section 301(j)(5) specifies that the applicant must implement a wastewater reclamation program that will result in a reduction in the quantity of suspended solids discharged by the applicant into the marine environment during the period of the 301(h) modification. In addition, such modification must result in removal of not less than 80 percent of total suspended solids (on a monthly average) and not less than 58 percent of biochemical oxygen demand (on an annual average).

1. Total Suspended Solids

To comply with these requirements, the applicant has proposed the following effluent limits for total suspended solids:

TSS: (1) The monthly average system-wide percent removal shall not be less than 80% percent (computed in accordance with Addendum No. 1 to Order No. R9-2002-0025, NPDES No. CA0107409).
(2) The monthly average treatment plant effluent concentration shall not be more than 75 mg/l.
(3) The annual treatment plant loading to the ocean shall not be more than 15,000 metric tons per year during years one through four of the permit and not more than 13,598 metric tons per year during year five of the permit. Compliance calculations for these loadings are not to include contributions from: Tijuana, Mexico, via the emergency connection; federal facilities in excess of solids contributions received in calendar year 1995; Metro System flows treated in the City of Escondido; South Bay Water Reclamation Plant flows discharged to the South Bay Ocean Outfall; and emergency use of the Metro System by participating agencies over their capacity allotments.

(For reference, 1 metric ton is 1,000 kilograms which is approximately 2,205 pounds.)

EPA reviewed influent and effluent data for Point Loma WTP provided in Volume IV, Appendix A, of the application. The data for total suspended solids, turbidity, and settleable solids are summarized, as follows.

Table 3. Monthly average and annual average influent concentrations for total suspended solids (mg/l) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	281	296	311	245	283	271
February	260	289	294	251	294	283
March	270	282	290	239	275	298
April	283	290	289	268	273	319
May	290	293	285	269	282	323
June	301	290	303	287	274	340
July	318	292	300	280	282	368
August	293	288	297	294	278	377
September	290	276	295	296	299	338
October	287	267	293	281	309	320
November	291	268	262	290	303	313
December	283	287	274	292	288	280
Annual Average	287	285	291	274	287	319
Maximum Month	318	296	311	296	309	377
Minimum Month	260	267	262	239	273	271

Table 4. Monthly average and annual average effluent concentrations for total suspended solids (mg/l) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	40.5	41.0	46.4	38.0	35.7	36
February	46.6	42.2	43.7	39.0	36.8	34
March	40.9	39.9	43.6	35.6	36.8	33
April	41.7	41.1	43.5	38.2	37.9	29
May	42.5	45.8	42.0	40.2	35.1	26
June	46.5	43.7	44.0	45.1	33.6	25
July	51.9	44.1	43.7	46.9	37.2	31
August	46.0	41.4	43.1	41.0	37.1	34
September	39.0	39.9	44.8	41.9	30.6	41
October	39.4	41.3	37.5	43.0	31.7	43
November	42.4	40.5	37.9	39.2	33.9	35
December	44.5	43.3	41.9	38.5	32.5	41
Annual Average	43.5	42.0	42.7	40.6	34.9	34
Maximum Month	51.9	43.3	46.4	46.9	37.9	43
Minimum Month	39.0	39.9	37.5	35.6	30.6	25

Table 5. Monthly average and annual average percent removals for total suspended solids (%) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	85.6	86.1	85.1	84.5	87.4	86.7
February	82.1	85.4	85.1	84.5	87.5	87.9
March	84.9	85.9	85.0	85.1	86.6	88.9
April	85.2	85.8	84.9	85.7	86.1	90.9
May	85.3	84.4	85.3	85.1	87.6	91.6
June	84.6	84.9	85.5	84.3	87.7	92.6
July	83.7	84.9	85.4	83.3	86.8	91.4
August	84.3	85.6	85.5	86.1	86.7	90.8
September	86.5	85.5	84.8	85.8	89.8	87.7
October	86.3	84.5	87.2	84.7	89.7	86.5
November	85.4	84.9	85.5	86.5	88.8	88.7
December	84.3	84.9	84.7	86.8	88.7	85.4
Annual Average	84.9	85.2	85.3	85.2	87.8	89.1
Maximum Month	86.5	86.1	87.2	86.8	89.8	92.6
Minimum Month	82.1	84.4	84.7	83.3	86.1	85.4

Table 6. Monthly average and annual average effluent values for turbidity (NTU) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	42	40	50	51	43	44
February	48	38	45	47	44	44
March	45	39	47	42	42	47
April	43	44	49	47	45	41
May	43	47	53	51	45	41
June	45	49	50	52	40	40
July	48	49	50	53	42	42
August	46	48	54	49	38	42
September	44	47	53	47	38	46
October	46	47	44	47	40	48
November	44	46	49	45	45	46
December	43	47	53	46	46	47
Annual Average	45	45	50	48	42	44
Maximum Month	48	49	54	53	46	48
Minimum Month	42	38	44	42	38	40

Table 7. Monthly average and annual average effluent values for settleable solids (Ml/l) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	0.1	0.1	0.2	0.2	0.5	0.4
February	0.1	0.1	0.2	0.2	0.3	0.3
March	0.1	0.1	0.3	0.2	0.3	0.3
April	0.1	0.1	0.5	0.3	0.4	0.3
May	0.2	0.2	0.7	0.3	0.3	0.3
June	0.2	0.2	0.8	0.2	0.2	0.3
July	0.3	0.2	0.5	0.3	0.1	0.3
August	0.3	0.3	0.5	0.3	0.3	0.5
September	0.3	0.3	0.5	0.5	0.4	0.6
October	0.2	0.3	0.4	0.4	0.3	0.6
November	0.1	0.1	0.3	0.3	0.3	0.6
December	0.2	0.2	0.3	0.3	0.5	0.8
Annual Average	0.2	0.2	0.4	0.3	0.3	0.4
Maximum Month	0.3	0.3	0.8	0.5	0.5	0.8
Minimum Month	0.1	0.1	0.2	0.2	0.1	0.3

As shown in Table 5, the monthly average percent removals for total suspended solids meet both federal primary treatment requirements and California Ocean Plan Table A requirements for the Point Loma WTP. As shown in Table 4, the applicant’s proposed monthly average limit of 75 mg/l for the Point Loma WTP effluent will also be met, although lower concentrations for suspended solids in the effluent are achievable. As shown in Table 6 and based on EPA’s review of the effluent data, the turbidity limits for the Point Loma WTP effluent will be met. As shown in Table 7 and based on EPA’s review of the effluent data and the City’s response to permit violations which occurred in June and August 2004 (Table III.B-28 in Volume III of the application), the settleable solids limits for the Point Loma WTP effluent will be met.

In contrast to federal primary treatment and California Ocean Plan requirements, the percent removal requirement for total suspended solids specified under CWA section 301(j)(5) is applied on a “system-wide” basis and computed in accordance with the existing permit.

Table 8. Monthly average and annual average system-wide percent removals for total suspended solids (%).

Month	2002	2003	2004	2005	2006	2007
January	86	87	84	85	87	87
February	83	86	86	85	88	88
March	86	86	86	86	87	89
April	86	86	86	86	86	91
May	86	85	86	86	87	92
June	85	86	86	84	88	93
July	82	86	86	84	85	92
August	85	87	86	87	87	91
September	88	87	86	87	90	88
October	87	85	87	85	90	86
November	86	85	86	87	89	89
December	86	86	86	88	87	86
Annual Average	86	86	86	86	88	89
Maximum Month	88	87	87	88	90	93
Minimum Month	83	85	84	84	85	87

As shown in Table 8, the monthly average system-wide percent removals for total suspended solids meet the CWA section 301(j)(5) requirement of not less than 80 percent.

To comply with the CWA section 301(j)(5) requirement to implement a wastewater reclamation program that will result in a reduction in the quantity of suspended solids discharged by the applicant into the marine environment during the period of the 301(h) modification, the applicant has brought online the 30 mgd North City WRP and the 15 mgd South Bay WRP and, as part of its “improved” discharge, has committed to bring additional recycled water users online to reduce dry-weather flows to both the South Bay Ocean Outfall and Point Loma WTP and Ocean Outfall. Evidence for reductions in the quantity of suspended solids discharged by the applicant during the period of the 301(h) modification are provided in the application (Volume III, Figure II.A-1) which shows the actual reduction in Point Loma WTP effluent mass emissions for total suspended solids from 1995 through 2007. The application also provides projections for total suspended solids loadings from the Point Loma WTP during the period of the proposed 301(h) modification (Appendix III, Table II.A-21).

Table 9. Point Loma WTP actual and projected flows (mgd) and total suspended solids loadings (MT/year) during the terms of the existing and proposed permits.

Year	Actual Annual Average Discharge[1]	Actual TSS Mass Emissions[1,2]	Projected Annual Average Discharge	Projected TSS Mass Emissions
1995	188	11,060	---	---
1996	179	10,718	---	---
1997[3]	189	10,255	---	---
1998[4]	194	10,627	---	---
1999	175	9,130	---	---
2000[5]	174	9,036	---	---
2001	175	10,256	---	---
2002[6]	169	10,184	---	---
2003	170	9,862	---	---
2004	174	10,300	---	---
2005	183	10,229	---	---
2006	170	8,248	---	---
2007	161	7,588	---	---
2008	---	---	191	11,400
2009	---	---	193	11,500
2010	---	---	194	11,800
2011	---	---	195	11,700
2012	---	---	197	11,800
2013	---	---	199	11,900
2014	---	---	202	12,100

[1] Flow and mass emissions data from annual reports submitted to the Regional Water Board and EPA for 1995-2007.
[2] Annual mass emissions (converted to units of metric tons per year) are computed as the annual average of monthly mass emissions presented in annual reports submitted to the Regional Water Board and EPA for 1995-2007. The above-listed annual values (computed from monthly averages) may vary slightly from the annual values presented in the summary sheets within the annual reports, which are computed on the basis of average flow and effluent total suspended solids concentrations.
[3] North City WRP is brought online.
[4] Metro Biosolids Center is brought online.
[5] International Boundary and Water Commission International Wastewater Treatment Plant is brought online and Tijuana wastewater flows to Metro System are terminated.
[6] South Bay WRP is brought online.

The applicant's projections in Table 9 and proposed annual mass emissions limits for total suspended solids satisfy section 301(j)(5)(B)(ii) of the Act, except that footnotes 2 and 3 are retained from the existing permit:

> "[2] To be achieved on permit effective date through December 31, 2013. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS)

generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.

[3] To be achieved on January 1, 2014. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP."

The applicant's proposed modifications to the requirements of footnotes 2 and 3 in the existing modified permit would allow significant new sources of total suspended solids to be included in the Point Loma discharge, but excluded from the determination of compliance with these mass emission limits. EPA cannot determine compliance with CWA section 301(j)(5)(B)(ii) if these provisions are changed to allow additional total suspended solids loadings to be excluded from the mass emission requirements for total suspended solids. Maintaining the existing requirements in footnotes 2 and 3 ensures that the mass emission loadings are measured on a comparable basis so that EPA can determine that the permit requires the necessary reduction in suspended solids loadings.

Based on Table 9, EPA believes that a total suspended solids mass emission rate of 12,100 metric tons per year would be achievable during all five years of the proposed 301(h) modification. During this period, EPA recognizes that reductions in mass emissions resulting from increased water reclamation are likely to be seasonal and anticipates the potential for corresponding higher mass emission rates during wet weather months. In the future, the City needs to pursue additional water reclamation and reuse projects, including those which demand a year-round supply of reclaimed water so as to maintain long-term compliance with the decision criteria.

2. Biochemical Oxygen Demand

To comply with federal primary treatment and CWA section 301(j)(5) requirements for biochemical oxygen demand, the applicant has proposed the following effluent limit:

BOD: The annual average system-wide percent removal shall not be less than 58 percent (computed in accordance with Addendum No. 1 to Order No. R9-2002-0025, NPDES No. CA0107409).

EPA reviewed influent and effluent data for Point Loma WTP provided in Volume IV, Appendix A, of the application. The data for biochemical oxygen demand are summarized, as follows.

Table 10. Monthly average and annual average influent concentrations for biochemical oxygen demand (mg/l) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	257	280	272	218	261	282
February	257	260	249	219	279	286
March	261	258	244	221	264	302
April	266	267	258	254	270	307
May	263	280	264	264	278	315
June	268	274	277	269	263	329
July	280	283	251	256	268	323
August	264	277	267	259	261	322
September	260	280	257	265	273	311
October	270	269	234	263	280	295
November	276	261	234	277	277	305
December	266	262	256	256	282	270
Annual Average	266	271	255	252	271	304
Maximum Month	280	283	277	277	282	329
Minimum Month	257	261	234	218	261	270

Table 11. Monthly average and annual average effluent concentrations for biochemical oxygen demand (mg/l) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	95.0	99.6	103.7	88.4	97.6	100
February	107.5	97.7	98.5	88.7	101.1	97
March	94.4	99.9	100.5	96.3	102.5	99
April	98.6	111.7	100.3	107.7	105.5	95
May	89.4	116.9	101.3	112.7	105.4	96
June	84.0	117.2	107.7	114.6	108.1	95
July	90.4	115.5	102.4	112.0	111.9	96
August	88.8	107.2	115.4	105.1	102.3	98
September	83.9	100.9	106.1	107.1	98.4	94
October	94.8	101.0	85.9	112.5	92.0	93
November	104.7	94.9	94.4	112.3	97.2	94
December	93.6	96.5	102.8	101.5	100.6	89
Annual Average	93.8	104.9	101.6	104.9	101.9	96
Maximum Month	107.7	117.2	115.4	114.6	111.9	100
Minimum Month	83.9	94.9	85.9	88.4	92.0	89

Table 12. Monthly average and annual average percent removals for biochemical oxygen demand (%) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	63.0	64.4	61.9	59.4	62.6	64.5
February	58.2	62.4	60.4	59.5	63.8	66.1
March	63.8	61.3	58.8	56.4	61.2	67.2
April	62.9	58.2	61.1	57.6	60.9	68.8
May	66.0	58.3	61.6	57.3	62.1	69.5
June	68.7	57.2	61.1	57.4	58.9	70.9
July	67.7	59.2	56.2	56.3	58.2	70.0
August	66.4	61.3	56.8	59.4	60.8	69.5
September	67.7	64.0	58.7	59.6	64.0	69.7
October	64.9	62.5	63.3	57.2	67.1	68.3
November	62.1	63.6	59.7	59.5	64.9	69.2
December	64.8	63.2	59.8	60.4	64.3	66.9
Annual Average	64.7	61.3	60.0	58.3	62.4	68.4
Maximum Month	68.7	64.4	63.3	60.4	67.1	70.9
Minimum Month	58.2	57.2	56.2	56.3	58.2	64.5

As shown in Table 12, the monthly average percent removals for biochemical oxygen demand meet the federal primary treatment requirement.

In contrast to the federal primary treatment requirement, the percent removal requirement for biochemical oxygen demand specified under CWA section 301(j)(5) is applied on a “system-wide” basis and computed in accordance with the existing permit.

Table 13. Monthly average and annual average system-wide percent removals for biochemical oxygen demand (%).

Month	2002	2003	2004	2005	2006	2007
January	65	67	62	62	65	67
February	61	65	64	62	66	68
March	67	63	62	60	63	69
April	66	61	64	61	63	71
May	69	61	65	60	64	71
June	70	61	64	59	62	73
July	68	62	63	60	60	72
August	69	64	60	62	64	72
September	71	66	61	63	67	72
October	68	65	66	60	69	70
November	65	67	63	63	67	71
December	68	66	62	63	66	69
Annual Average	67	64	63	61	65	70
Maximum Month	71	67	66	63	69	73
Minimum Month	61	61	60	59	60	67

As shown in Table 13, the annual average system-wide percent removals for biochemical oxygen demand meet the CWA section 301(j)(5) requirement of not less than 58 percent.

3. 301(h)-modified Permit Effluent Limits for TSS and BOD

Based on EPA's review of the 301(h) and (j)(5) decision criteria, the effluent limits in Table 14 will be incorporated into the 301(h)-modified permit:

Table 14. Effluent limits based on CWA sections 301(h) and (j)(5).

Effluent Constituent	Units	Annual Average	Monthly Average
TSS	% removal[1]	---	≥80
	mg/l	---	75[4]
	metric tons/year	15,000[2]	---
		13,598[3]	---
BOD5	% removal[1]	≥58	---

[1] To be calculated on a system-wide basis, as provided in Addendum No. 1 to Order No. R9-2002-0025.
[2] To be achieved on permit effective date through December 31, 2013. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[3] To be achieved on January 1, 2014. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[4] Based on average monthly performance data (1990 through 1994) for the Point Loma WTP provided by the Discharger for the 1995 301(h) application.

B. Attainment of Water Quality Standards for TSS and BOD

Under 40 CFR 125.61(a) which implements CWA section 301(h)(1), there must be a water quality standard applicable to the pollutants for which the modification is requested; under 125.61(b)(1), the applicant must demonstrate that the proposed modified discharge will comply with these standards. The applicant has requested modified requirements for total suspended solids, which can affect natural light (light transmissivity) and biochemical oxygen demand which can affect dissolved oxygen concentration.

1. Natural Light

In relation to the effects of total suspended solids, the California Ocean Plan specifies that: "Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste." Regional Water Boards may determine reduction of natural light by measurement of light transmissivity or total irradiance, or both. Compliance with this water quality objective is determined from samples collected at stations representative of the area within the wastefield where initial dilution is completed. The typical depth range of the PLOO wastefield is 60 to 80 meters below the surface which is well below the euphotic zone.

In the 1995 TDD, EPA predicted a maximum increase in total suspended solids of 0.5 mg/l, in the immediate area of the Point Loma discharge, based on an effluent concentration of 53 mg/l and the worst-case initial dilution of 99:1. Applying this initial dilution value to the total suspended solids effluent values in Table 4 and the applicant's estimate for ambient total suspended solids (depth-averaged over a complete tidal cycle) of 7 mg/l, the maximum increase in total suspended solids at the boundary of the zone of initial dilution should be on the order of 0.45 to 0.24 mg/l, or about 6 to 3 percent. While these estimates are larger than the applicant's estimates, the increases predicted by the mass balance model are not considered substantial given the range of natural variability in total suspended solids (2.2 to 11.2 mg/l) historically observed in the area of the discharge.

EPA also reviewed available receiving water data to assess whether or not natural light is significantly reduced by the drifting wastefield.

Under its existing NPDES permit, the City conducts the required quarterly monitoring for bacteria indicators (enterococcus, fecal coliforms, and total coliforms), at depths of 1, 25, 60, 80 and 98 meters below the surface, at a grid of 33 offshore stations located along the 98, 80 and 60 meter contours (Figure A-3). This data is used by the applicant and EPA to help identify the location of the drifting wastefield. EPA evaluated the applicant's monitoring results from October 2003 through July 2007. Bacteria indicator data indicative of the PLOO wastefield are variably found along the 98, 80, and 60 meter contours, generally at depths from 60 to 98 meters.

Under its existing NPDES permit, the City conducts the required quarterly monitoring for light transmittance, throughout the water column, at a grid of 33 offshore stations located along the 98, 80 and 60 meter contours. EPA evaluated the applicant's monitoring results from October 2003 through October 2007. As shown in Table B-1 and Figure A-5, long-term averages and standard deviations for percent transmissivity at different water depths at the near-ZID boundary and nearfield stations (F30, F29, F31) are similar to those observed for the same water depth, at farfield stations located on the 98 meter contour. Long-term averages for percent transmissivity are lower and more variable at water depths closer to the surface and at the bottom, in comparison to water depths below the euphotic zone which are frequented by the drifting wastefield. Generally, percent transmissivity is lower at stations closer to the coast, due to shoreline influences and sediment resuspension at the bottom. Based on this evaluation, EPA concludes that the Point Loma discharge does not result in a significant reduction in natural light in areas within the wastefield where initial dilution is completed.

2. Dissolved Oxygen

In relation to the effects of biochemical oxygen demand, the California Ocean Plan specifies that: "The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials." Compliance with this water quality objective is determined from samples collected at stations representative of the area within the wastefield where initial dilution is completed. The typical depth range of the PLOO wastefield is 60 to 80 meters below the surface which is well below the euphotic zone.

The 1995 application used a modeling approach to predict the effect of the Point Loma WTP discharge on ambient dissolved oxygen concentrations. In the 1995 TDD, EPA evaluated these efforts and conducted similar modeling, using a worst-case (critical) initial dilution of 99:1, to verify the City's predictions. EPA's modeling results were slightly higher, but comparable to the applicant's results. The results of these modeling efforts are still valid for this review, as the assumptions for discharge flow (240 mgd), total suspended solids (48 mg/l), and biochemical oxygen demand (121 mg/l) remain conservative model inputs, with respect to the 2007 application. A summary of the applicant's analyses are found in Volume III, Large Applicant Questionnaire section III.B, of the application. The results of the applicant's and EPA's modeling efforts are summarized, below. EPA's analyses are found in the administrative record for the 1995 TDD.

Both the applicant and EPA use modeling efforts to evaluate the potential for: (1) dissolved oxygen depression following initial dilution during the period of maximum stratification (or other critical period); (2) farfield dissolved oxygen depression associated with biochemical oxygen demand exertion in the wastefield; (3) dissolved oxygen depression associated with steady-state sediment oxygen demand; and (4) dissolved oxygen depression associated with the resuspension of sediments (Table 15). For these calculations, the applicant uses an initial dilution of 202:1 while EPA uses the worst-case initial dilution of 99:1.

Table 15. Predicted worst-case dissolved oxygen (DO) depressions (mg/l) and percent reductions (%) performed by San Diego (1995) and EPA (1995).

Sources of Potential Oxygen Demand	San Diego	EPA
DO depression upon initial dilution (and % reduction)	0.05 (<1%)	0.08 (1.7%)
DO depression due to BOD exertion in the farfield (and % reduction)	0.14 (2.4%)	0.23 (5.9%)
DO depression due to steady-state sediment oxygen demand (and % reduction)	0.045 (1.7%)	0.16 (4.7%)
DO depression due to abrupt sediment resuspension (and % reduction)	0.077 (2.4%)	0.12 (3.5%)

EPA has compared these model predictions to the most recent water quality data to assess the potential for the discharge to result in dissolved oxygen depressions more than 10 percent from that which occurs naturally. Under its existing NPDES permit, the City conducts the required quarterly monitoring for dissolved oxygen, throughout the water column, at a grid of 33 offshore stations located along the 98, 80 and 60 meter contours. EPA evaluated the applicant's monitoring results from October 2003 through October 2007. At water depths frequented by the drifting wastefield, the long-term average concentrations for dissolved oxygen are around 4 to 5 mg/l. As shown in Table B-2 and Figure A-6, the long-term average concentration for dissolved oxygen at the near-ZID boundary station (F30) is similar to long-term average concentrations measured at nearfield and farfield stations. Dissolved oxygen depression associated with sediment demand should be compared to bottom waters at the outfall depth which, on average, show dissolved oxygen concentrations around 3 mg/l. This evaluation supports the conclusion that the Point Loma discharge does not result in more than a 10 percent reduction in dissolved oxygen concentrations, in areas within the wastefield where initial dilution is completed, from that which occurs naturally.

Based on the model predictions and receiving water monitoring results, EPA concludes it is unlikely that the dissolved oxygen concentration will be depressed more than 10 percent from that which occurs naturally outside the initial dilution zone, as a result of the wastewater discharge.

C. Attainment of Other Water Quality Standards and Impact of the Discharge on Shellfish, Fish and Wildlife; Public Water Supplies; and Recreation

CWA section 301(h)(2), implemented under 40 CFR 125.62, requires the modified discharge to not interfere, either alone or in combination with other sources, with the attainment or maintenance of that water quality which assures protection of public water supplies; protection and propagation of a balanced indigenous population (BIP) of shellfish, fish, and wildlife; and allows recreational activities in and on the water. In addition, CWA section 301(h)(9), implemented under 40 CFR 125.62(a), requires that the modified discharge meet all applicable EPA-approved State water quality standards and, where no such standards exist, EPA's 304(a)(1) aquatic life criteria for acute and chronic toxicity and human health criteria for carcinogens and noncarcinogens, after initial mixing in the waters surrounding or adjacent to the outfall.

1. Attainment of Other Water Quality Standards and Criteria

40 CFR 125.62(a) requires that the applicant's outfall and diffuser be located and designed to provide adequate initial dilution, dispersion, and transport of wastewater such that the discharge does not exceed, at and beyond the zone of initial dilution, all applicable State water quality standards. Where there are no such standards, individual 304(a)(1) aquatic life criteria and human health criteria must not be exceeded by the discharge. For this review, the applicable water quality standards and criteria are analyzed in four categories: pH, toxics, whole effluent toxicity, and sediment quality.

a. pH

The applicant is not requesting a 301(h) modification for pH, but the modified discharge must still meet the water quality standard for pH. The California Ocean Plan specifies that in ocean water: "The pH shall not be changed at any time more than 0.2 units from that which occurs naturally." Compliance with this water quality objective is determined from samples collected at stations representative of the area within the wastefield where initial dilution is completed. The typical depth range of the PLOO wastefield is 60 to 80 meters below the surface. Also, Table A in the California Ocean Plan has the effluent limit for pH: "Within the limit of 6.0 to 9.0 at all times." This requirement for pH is the same as that found in the secondary treatment regulation (40 CFR Part 133).

The City's 1995 application computed projected effects for a 240 mgd discharge on receiving water pH and a maximum change of 0.02 pH units was estimated.

Under its existing NPDES permit, the City conducts the required quarterly monitoring for pH, throughout the water column, at a grid of 33 offshore stations located along the 98, 80 and 60 meter contours. EPA evaluated the applicant's monitoring results from October 2003 through October 2007. At water depths frequented by the drifting wastefield, the long-term average for pH ranges from 7.9 to 7.8 units. As shown in Table B-3 and Figure A-7, the long-term average for pH measured at the near-ZID boundary station (F30) is similar to long-term averages measured at nearfield and farfield stations.

Under its existing NPDES permit, the City conducts the required continuous monitoring for pH in the Point Loma WTP effluent. Table III.B-13 in Volume III of the application summarizes daily pH data for the effluent during 2002 through 2006. During this period, the maximum daily value for pH was 7.87 units and the minimum daily value was 6.65 units. These levels achieve the technology based effluent limits required in both Table A of the California Ocean Plan and federal secondary treatment standards.

Based on the model predictions and receiving water monitoring results, it is unlikely that pH will be depressed more than 0.2 units from that which occurs naturally outside the initial dilution zone, as a result of the wastewater discharge. Also, EPA expects that technology based effluent limits for pH will be met by the applicant.

b. Toxics and Whole Effluent Toxicity

Under its existing NPDES permit, the City conducts the required effluent monitoring for the priority toxic and non-conventional pollutants listed in Table B of the California Ocean Plan and "remaining priority pollutants". Table B parameters for the protection of marine aquatic life are monitored weekly, except for chronic toxicity which is monitored monthly and acute toxicity which is monitored semi-annually. Table B parameters for the protection of human heath (noncarcinogens) are monitored monthly. Table B parameters for the protection of human health (carcinogens) are monitored monthly, except for aldrin and dieldrin, chlordane, DDT, PCBs, and toxaphene which are monitored weekly. "Remaining priority pollutants" are monitored monthly.

Toxics

The City submitted Point Loma WTP effluent data for metals, ammonia, and toxic organic chemicals from 2002 through 2006 in electronic format, as part of the application. Table B-4 provides a summary list of the monitored chemical parameters in this submission.

EPA screened this data using both the maximum method detection limit (MDL) and maximum effluent value reported by the applicant. Parameters never detected in the effluent were set aside. The remaining parameters were screened to determine which exceeded an applicable California Ocean Plan Table B water quality objective, or if no such objective exists, any applicable EPA 304(a)(1) water quality criterion. For Table B objectives, this screening was conducted using the 1995 and 2002 minimum monthly average initial dilution value of 204:1.

Table B-5 provides a summary list of parameters detected at least once in the effluent from 2002 through 2006. Only chlordane and heptachlor exceeded applicable State water quality standards, or EPA's 304(a)(1) water quality criteria; both the applicant (Table III.B-28 in Volume III of the application) and EPA have identified that these two parameters exceeded Table B objectives only once, on July 24, 2004. Chlordane is a pesticide that was used on crops like corn and citrus, on home lawns and gardens, and to control termites. EPA banned all uses of chlordane in 1988. Heptachlor was extensively used in the past for killing insects in homes, buildings, and on food crops. These uses stopped in 1988. Currently, heptachlor can only be used for fire ant control in underground power transformers. The applicant monitors effluent levels of chlordane on a weekly basis and heptachlor on a monthly basis and attributes the exceedance results to an illicit discharge to the sewer system. All other monitoring results for chlordane and heptachlor were reported as not detected in the effluent.

EPA reviewed the sensitivity of analytical methods used by the applicant to evaluate effluent compliance with California Ocean Plan Table B water quality objectives after initial dilution. To do this, EPA reviewed the maximum method detection limits (MDLs) and maximum effluent concentrations for all Table B parameters monitored during 2002 through 2006. For Table B parameters which are always reported as "not detected", EPA calculated estimated effluent wasteload allocations by multiplying Table B objectives by the respective initial dilution value. These estimated wasteload allocations are then compared to the applicant's maximum MDLs during 2002 through 2006. Based on these comparisons, EPA has determined that the MDLs for aldrin, benzidine, chlordane, DDT, 3,3-dichlorobenzidine, dieldrin, heptachlor, heptachlor epoxide, PAHs, PCBs, TCDD equivalents, and toxaphene are generally not low enough to evaluate effluent quality in relation to the applicable water quality objective after initial dilution (i.e., the MDL is greater than the estimated effluent wasteload allocation). EPA determined that the applicant is using MDLs as sensitive as those prescribed under 40 CFR 136, except for aldrin, PCBs, and TCDD equivalents, where the applicant's MDLs need to be lowered in order to achieve 40 CFR 136 levels.

Whole Effluent Toxicity

The City provided Point Loma WTP effluent data for chronic toxicity and acute toxicity from 2002 through 2007 in electronic format, at EPA's request.

EPA reviewed these chronic toxicity data, along with the summary results for chronic toxicity provided in Volume III, Large Applicant Questionnaire section III.B.7, of the application to determine if any test results exceeded the Table B chronic toxicity objective of 1.0 TUc (= 100/NOEC). In accordance with the existing permit, the applicant conducted sensitivity screening using *Atherinops affinis* (topsmelt), *Haliotis rufescens* (red abalone), and *Macrocystis pyrifera* (giant kelp) and concluded that the red abalone and giant kelp were the most sensitive organisms for chronic toxicity testing. EPA's review of the 52 red abalone larval development test results from June 2003 through 2007 shows no exceedance of the chronic toxicity objective using the minimum monthly initial dilution value of 204:1. EPA's review of the 60 giant kelp germ tube length test results from June 2003 through 2007 shows one exceedance (December 19, 2005) of the chronic toxicity objective which is a very low failure rate. In response to the exceedance, the City conducted accelerated toxicity testing as required by the existing permit; these follow-up toxicity tests demonstrated compliance with the objective. The applicant reports that concentrations of toxic inorganic and organic constituents in the Point Loma WTP effluent at the time of the noncompliant toxicity test were at normal values and the cause of the toxicity is unknown. The existing permit limit is 205 TUc and the critical effluent concentration is 0.49 percent effluent.

EPA reviewed these acute toxicity data, along with the summary results for acute toxicity provided in Volume III, Large Applicant Questionnaire section III.B.7, of the application to determine if any test results exceeded the Table B acute toxicity objective of 0.3 TUa (= 100/LC50). In accordance with the existing permit, the applicant conducted sensitivity screening both using *Atherinops affinis* (topsmelt) and *Mysidopsis bahia* (shrimp) and concluded that the shrimp was the more sensitive organism for acute toxicity testing. EPA's review of the 11 test results from June 2003 through September 2007 shows no exceedance of the acute toxicity objective, using the minimum monthly initial dilution value of 20.4:1 for acute toxicity. The existing permit limit is 6.5 TUa and the critical effluent concentration is 15.5 percent effluent.

Toxics Mass Emission Benchmarks and Antidegradation

In the 1995 and 2003 permits, EPA and the Regional Water Board established annual mass based performance goals for California Ocean Plan Table B parameters based on Point Loma WTP effluent data from 1990 through April 1995. For most Table B parameters, the numerical benchmarks are set below the levels prescribed for water quality based effluent limits. The benchmarks are designed to provide an early measure of changes in effluent quality which may substantially increase the mass of toxic pollutants discharged to the marine environment. Consistent with State and federal antidegradation policies, these benchmarks are intended to serve as triggers for antidegradation analyses during renewal of the permit.

Under 40 CFR 131.12, State antidegradation polices and implementation practices must ensure that: (1) existing uses and the level of water quality necessary to protect such uses are maintained and protected (Tier I requirement); and (2) where water quality is better than necessary to support the propagation of fish, shellfish, and wildlife and recreation in and on the water, the level of water quality shall be maintained and protected unless the permitting authority finds that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located; existing uses are fully protected; and the highest statutory and regulatory requirements are achieved for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control (Tier II requirement).

An analysis of compliance with the mass emission benchmarks in the existing permit is presented in Volume II, Part 3, of the application. During 2002 through 2006, the City achieved compliance with all benchmarks except for phenol (2.57 MT/yr) which was exceeded by about eight percent. Phenol is regularly detected in the Point Loma WTP effluent. According to the applicant, phenol is a common chemical used in industrial and nonindustrial applications as solvents, disinfectants and cleaning compounds; it is also a constituent in paints, inks, and photographic chemicals. Phenol has a variety of household uses including medical and household disinfectants, pharmaceuticals, solvents and cleaners, paints, inks, and photo supplies. It is identified by the applicant as a pollutant of concern, but does not have an existing local pretreatment limit. Industrial discharges of phenols to the sewer system are regulated by the City. Federal categorical industrial dischargers, hospitals, and laboratories are regulated by the applicant's "toxic organic management plans". Electroplating and metal finishing industries are regulated by federal total toxic organics limits. The applicant states that these existing practices are effective in limiting industrial discharges of phenol from electroplating and metal finishing industries, hospitals, laboratories, and other significant industrial users.

Point Loma WTP influent and effluent data presented in Table 2-5 of Volume II, Part 3, of the application demonstrate that the upward trend in phenol mass emissions is consistent and not an artifact of a few high concentrations in a limited number of samples. Historical annual average mass emissions for phenol are: 2.2 MT/yr (1990-1995), 3.3 MT/yr (1996-2001), and 2.7 MT/yr (2002-2006). During these periods, the average percent removal for phenol has improved: 17 percent (1990-1995), 20 percent (1996-2001), and 27 percent (2002-2006). During these periods, the average concentrations for phenol in the effluent are: 8.2 ug/l (1990-1995), 13.4 ug/l (1996-2001), and 11.5 ug/l (2002-2006). The applicant has not requested changes to the mass emission benchmark or the water quality based effluent limits for phenolic compounds in the existing permit.

Based on this information, EPA concludes that a full antidegradation analysis justifying that the continued increase in effluent loading of phenolic compounds (non-chlorinated) to a Tier II waterbody may be necessary. Because the effluent load for phenolic compounds appears likely to continue to increase during the permit term, the draft permit proposes that the applicant conduct a thorough analysis of the projected effluent load above the mass emission benchmark level, the resulting impact to receiving water quality of the total effluent load, and opportunities for effluent load reduction through additional treatment or controls, including local limits, and pollution prevention. If this analysis shows that the total effluent load for phenolic compounds produces either (1) a receiving water concentration at the boundary of the zone of initial dilution that is less than ten percent above the ambient (farfield) concentration, or (2) the receiving water concentration at the boundary of the zone of initial dilution is less than 50 percent of the California Ocean Plan water quality objectives for phenolic compounds (non-chlorinated), then the resulting impact to water quality is not considered "significant" and further analysis is not required at this time. However, if the change in receiving water quality is found to be "significant", then the applicant must conduct a socioeconomic analysis considering the full benefits and costs of the increased effluent loading of phenolic compounds, including environmental impacts. Specifically, this analysis must assess whether allowing these increased loadings is necessary to accommodate important social and economic development in the San Diego service area.

The existing annual mass emission benchmarks will be incorporated into the reissued permit as a basis for evaluating future changes in effluent quality and mass loading.

EPA concludes that the modified discharge will attain applicable water quality standards and criteria for toxics and whole effluent toxicity, based on the very low rates of effluent excursions above water quality objectives for toxics and chronic toxicity. Consistent with State policy, appropriate requirements for toxics and whole effluent toxicity will be included in the permit. Water quality based effluent limits will be established for all California Ocean Plan Table B parameters where effluent data show the reasonable potential to exceed water quality objectives for toxics and whole effluent toxicity. The effluent will be monitored for all Table B parameters and other priority pollutants following the regular schedule set in the existing permit. The results of the effluent monitoring program will be evaluated against the annual mass emission benchmarks to protect the Point Loma WTP headworks and achieve permit compliance with water quality standards.

In accordance with 40 CFR 125.62, EPA concludes that the modified discharge will allow for the attainment or maintenance of water quality which assures protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

c. Sediment Quality

Accumulation of solids in and beyond the vicinity of the discharge can have adverse effects on water usage and biological communities. 40 CFR 125.62(a) requires that following initial dilution, the diluted wastewater and particles must be dispersed and transported such that water use areas and areas of biological sensitivity are not adversely affected.

In relation to solids, Chapter II of the California Ocean Plan contains the following water quality objective for physical characteristics of marine sediments: “The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.” In addition, Chapter II of the California Ocean Plan contains the following water quality objectives for chemical characteristics of marine sediments: “The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.”; “Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.”; and “The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.”

Figure A-8 summarizes percent total solids in sediment at each 98 meter station, during July, from 1991 through 2006.

Applicants must predict seabed accumulation due to the discharge of suspended solids into the receiving water. The approach for large dischargers needs to consider the process of sediment deposition, decay of organic materials, and resuspension and anticipated mass emissions for the permit term.

In 1995, the applicant used a sediment deposition model (SEDPXY) to predict the rates of suspended solids and organic matter deposition and accumulation around the outfall. The model was run under two scenarios, assuming effluent flow rates of 205 (end-of-permit for 1995 application) and 240 mgd (design capacity) and solids mass emission rates of 14,073 and 16,476 MT/yr, respectively. In the 1995 TDD, EPA estimated sediment deposition using a modified version of the *Amended Section 301(h) Technical Support Document* (EPA 842-B-94-007, September 1994; ATSD) sediment deposition model which was run assuming an effluent flow rate of 205 mgd and a solids mass emission rate of 13,600 MT/yr. In the 2002 TDD, EPA adjusted its modeling for the solids mass emission rate of 15,000 MT/yr.

The predictions generated using the ATSD model are likely to be different from the applicant’s SEDPXY model due to differences in the use of current meter data, bathymetry, trapping depth distributions, the size and resolution of the modeling grid, and the use of different assumptions regarding the rate which effluent particles settle (e.g., the settling velocities used by EPA were about two times higher than those used by the applicant). As a result of these differences, the ATSD model predicts a greater number of particles settling over a smaller area and is the more conservative result. These data are summarized in Table 16.

Table 16. Results of sediment deposition modeling performed by San Diego (1995) and EPA (1995 and 2002).

Parameter	San Diego	EPA
Effluent flow rate (mgd)	205 – 240	205 – 240
Mass of particles (MT/yr)	14,073 – 16,476	13,600 – 15,000
Mass of particles (lbs/day)	85,000 – 99,512	n/a
Area modeled (km^2)	360	200
Percent of particles settling in area modeled (%)	8.3 – 8.1	12
Area modeled around the diffuser (km^2)	0.01	0.25
Annual solids deposition rate ($g/m^2/yr$)	152 – 174	254 – 280
Critical 90-day solids deposition rate (g/m^2/90-day)	45 – 51	72 – 79
Annual organic deposition rate ($g/m^2/yr$)	122 – 139	203 – 224
Critical 90-day organic deposition rate (g/m^2/90-day)	37 – 57	58 – 64
Steady-state organic accumulation (g/m^2)	33 – 38	56 – 62

Modeled estimates for annual solids deposition rate ranged from 152 to 280 $g/m^2/yr$ and the critical 90-day solids deposition rate ranged from 45 to 79 $g/m^2/yr$.

Although a portion of the settled solids is inert, the organic fraction of the settled solids is a primary concern around outfalls. Assuming that effluent solids are 80% organic matter (USEPA, 1994), modeled estimates for annual organic deposition rate ranged from 122 to 224 $g/m^2/yr$ and the critical 90-day solids deposition rate ranged from 37 to 64 $g/m^2/yr$. Although not strictly comparable, a reasonable estimate of organic carbon flux from the water column associated with primary and secondary production in Southern California is 26 to 62 g $C/m^2/yr$ (Nelson et al., 1987).

Estimates of steady-state organic accumulation ranged from 33 to 62 g/m^2, over the area modeled. The steady-state accumulation of organic matter in sediments is a function of the rate that organic matter is deposited and the rate at which it decays. Both the applicant and EPA used the conservative assumption that there is no resuspension or transport of solids to outside the area modeled and the typical default decay rate of 0.01/day. This tends to overestimate the actual accumulation of outfall deposits in sediments. For instance, Hendricks and Eganhouse (1992) estimated a background accumulation rate for solids of 103 $g/m^2/yr$, about one-sixth of their estimate for solids deposition. Applying this ratio to the model results in Table 16 for annual organic deposition rate ($g/m^2/yr$), yields estimates for organic accumulation rate ranging from 20 to 37 $g/m^2/yr$ and steady-state organic accumulation rate ranging from 5 to 10 g/m^2. Empirical evidence suggests that steady-state organic accumulations less than 50 g/m^2 have minimal effects on benthic communities (USEPA, 1982).

To both evaluate whether significant accumulation is actually occurring in the area of the outfall and identify trends, EPA examined sediment monitoring data for pre-discharge (1991-1993) and discharge monitoring surveys (1994-2006) conducted during July, at the depth of the outfall along the 98 meter contour (Figure A-4). (Under its existing NPDES permit, the City conducts the required semi-annual monitoring, during January and July, at 12 primary stations located along the 98 meter contour and a total of 10 secondary stations located along the 88 and 116 meter contours.) For perspective, values from the 98 meter stations are compared with San Diego's regional surveys (Volume IV, Appendix E, of the application) and the Southern California Bight regional survey conducted in 2003 (Schiff et al., 2006).

Sediment Grain Size Characteristics

Information about sediment grain size characteristics (e.g., particle size, percent fines) and the dispersion of sediment particles at a survey sight is indicative of hydrodynamic regimes and allows for better interpretation of chemical and biological data collected at the sight. Measured mean particle size and percent fines and trends around the Point Loma outfall are summarized in Figures E-2 and E-4 of Volume IV, Appendix E, of the application. The mean particle size for all 98 meter stations during the pre-discharge and discharge periods is 0.061 millimeters (mm) and 0.069 mm, respectively. During these two periods, the mean particle size at near-ZID station E14 is 0.062 mm and 0.102 mm, respectively. The percentage of fine sediments (silt and clay) for all 98 meter stations during the pre-discharge and discharge periods has a mean of about 40 percent and 37 percent, respectively. During these two periods, percent fines at near-ZID station E14 is about 40 percent and 30 percent, respectively.

The applicant reports that the slight increase in mean particle size observed at near-ZID station E14 is likely related to the movement of ballast material supporting the outfall pipe and the presence of patchy sediments in the area. The applicant also notes that sediments at northern reference station B12 are frequently characterized by the presence of very course material (shell hash and gravel) which distinguishes this station from other 98 meter stations. Consequently, this review uses northern reference station B9 as the primary reference station for making comparisons.

The mean particle size at station B9 during the pre-discharge and discharge periods is 0.054 mm and 0.060 mm, respectively. During these two periods, percent fines at station B9 is about 42 percent and 40 percent, respectively. For mid-shelf sediments (30-120 meters) summarized for the Southern California Bight regional survey in 2003, the area-weighted mean and 95% confidence interval for fine sediments is 45$\pm$8.4 percent. Figure E.5-1 in Volume IV, Attachment E.5, of the application summarizes percent fines in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Overall, there appears to be little change over time in sediment grain size characteristics relative to the outfall. The year-to-year variation in sediment grain size characteristics observed at station E14 are likely due to the movement of outfall ballast material.

Organic Indicators

Concentrations of total organic carbon, total volatile solids, total nitrogen, biochemical oxygen demand, and sulfides are measured as indicators of organic enrichment in sediments. Total organic carbon and total volatile solids represent more direct measurements of carbon imported as fine particulate matter.

Total Organic Carbon. Total organic carbon is a direct measure of the amount of organic carbon in sediments. Figure A-9 summarizes percent total organic carbon in sediment at each 98 meter station, during July, from 1993 through 2006. There does not appear to be a spatial trend in percent total organic carbon at these stations; however, during 2005 and 2006, there is a slight increase in percent total organic carbon at all 98 meter stations which does not appear to be related to the outfall. For January and July surveys, the mean percent total organic carbon for all 98 meter stations during the pre-discharge (1993) and most recent discharge period (2001-2006) is about 0.5 percent and 0.6 percent, respectively. During these two periods, the mean percent total organic carbon at near-ZID station E14 is about 0.5 percent and 0.5 percent, respectively, while levels at northern reference station B9 are about 0.6 percent and 0.6 percent, respectively. For mid-shelf sediments summarized for the 2003 Southern California Bight regional survey, the area-weighted mean and 95% confidence interval for total organic carbon is 0.75 ± 0.19 percent. These data do not suggest an outfall related effect. Figure E.5-2 in Volume IV, Attachment E.5, of the application summarizes percent total organic carbon in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Total Volatile Solids. Total volatile solids is a measure of organic carbon and nitrogenous matter in sediments. Figure A-10 summarizes percent total volatile solids in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are slightly higher than pre-discharge levels and there appears to be a weak spatial trend where levels slightly increase with distance from the outfall. For January and July surveys, the mean percent total volatile solids for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) is about 2.2 percent and 2.4 percent, respectively. During these two periods, the mean percent total volatile solids at near-ZID station E14 is about 2.1 percent and 2.0 percent, respectively, while levels at northern reference station B9 are about 2.4 percent and 3.2 percent, respectively. These data do not suggest an outfall-related effect. Figure E.5-3 in Volume IV, Attachment E.5, of the application summarizes percent total volatile solids in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Total Nitrogen. Figure A-11 summarizes percent total nitrogen in sediment at each 98 meter station, during July, from 1993 through 2006. At these stations, discharge period levels are slightly higher than pre-discharge levels and there appears to be a weak spatial trend where levels slightly increase with distance from the outfall. For January and July surveys, the mean percent total nitrogen for all 98 meter stations during the pre-discharge (1993) and most recent discharge period (2001-2006) is about 0.04 percent and 0.05 percent, respectively. During these two periods, the mean percent total nitrogen at near-ZID station E14 is about 0.03 percent and 0.5 percent, respectively, while during these two periods, levels at northern reference station B9 are about 0.05 percent and 0.06 percent, respectively. For mid-shelf sediments summarized for the 2003 Southern California Bight regional survey, the area-weighted mean and 95% confidence interval for total nitrogen is 0.05±0.01 percent. These data do not suggest an outfall-related effect. Figure E.5-4 in Volume IV, Attachment E.5, of the application summarizes percent total nitrogen in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Biochemical Oxygen Demand. Biochemical oxygen demand is an indirect measure of organic enrichment in sediments. Figure A-12 summarizes biochemical oxygen demand concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are slightly higher than pre-discharge levels and year-to-year concentrations measured at each station are quite variable. For January and July surveys, the mean biochemical oxygen demand concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 270 parts per million (ppm) and about 320 ppm, respectively. During these two periods, the mean biochemical oxygen demand concentrations at near-ZID station E14 are about 250 ppm and 470 ppm, respectively, while concentrations at northern reference station B9 are about 300 ppm and 310 ppm, respectively. These data suggest that a small amount of organic enrichment is occurring close to the outfall diffuser.

Sulfides. Sulfides are a byproduct of anaerobic digestion of organic material by sulfur bacteria. Figure A-13 summarizes sulfide concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are generally higher than pre-discharge levels and year-to-year concentrations measured at stations close to the outfall (E17, E14, E11) are distinctly higher and quite variable. (Station E14 is located about 120 meters from the center of the diffuser legs and stations E17 and E11 are located about 250 to 300 meters from the ends of the diffuser legs.) For January and July surveys, the mean sulfide concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 1.2 ppm and 3.9 ppm, respectively. During these two periods, the mean sulfide concentrations at near-ZID station E14 are 1.7 ppm and 16.2 ppm, respectively, while concentrations at northern reference station B9 are 0.5 ppm and 1.2 ppm, respectively. These data suggest that a small amount of organic enrichment is occurring close to the outfall diffuser. Figure E.5-5 in Volume IV, Attachment E.5, of the application summarizes sulfide concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Modeling predictions indicate that deposition and accumulation rates associated with the Point Loma Ocean Outfall are not likely to have negative effects on benthic communities beyond the zone of initial dilution. Monitoring results for sediment parameters associated with organic enrichment suggest a mixed picture relative to the potential for biological effects close to the outfall diffuser. Only biochemical oxygen demand and sulfides are elevated at near-ZID station E14; sulfides are variably elevated at nearfield stations E17 and E11. However, as described below, monitoring results for biological indicators of organic enrichment lead EPA to conclude that significant effects on the benthic macrofauna community are not occurring in areas beyond the zone of initial dilution. EPA also concludes that the modified discharge complies with applicable California Ocean Plan water quality objectives for chemical characteristics of marine sediments.

Trace Metals and Toxic Organics

Chapter II of the California Ocean Plan contains the following water quality objective for chemical characteristics in marine sediments: “The concentration of substances set forth in Chapter II, Table B, in marine sediments shall not be increased to levels which would degrade indigenous biota.”

To both evaluate whether trace metals and toxic organic compounds are found at elevated concentrations in the area of the outfall and identify trends, EPA examined sediment monitoring data for pre-discharge (1991-1993) and discharge monitoring surveys (1994-2006) conducted during July, at the depth of the outfall along the 98 meter contour (Figure A-4). Ten metals, total DDTs, total PCBs, and total PAHs are reviewed. For perspective, parameter concentrations from the 98 meter stations are compared with non-regulatory NOAA sediment quality guidelines developed for the National Status and Trends Program (NOAA, 1999) and area-weighted means and 95% confidence intervals for mid-shelf (30-120 meters) sediments summarized for the Southern California Bight regional survey in 2003 (Table 17). The sediment quality guideline concentrations provided by NOAA represent the 10th percentile (or Effects Range-Low) and 50th percentile (or Effects Range-Median) of a toxicological effects database that has been compiled by NOAA for each parameter. The ERL is indicative of the concentrations below which adverse effects rarely occur and the ERM is representative of the concentrations above which effects frequently occur. The method detection limits (MDLs) for parameters monitored in sediments at the 98 meter stations are presented in the City’s annual receiving water monitoring reports for the Point Loma Ocean Outfall.

Table II.A-11 in Volume III of the application includes summary data for trace metals monitored in the Point Loma WTP effluent during 2002 through 2006. Known or suspected industrial and nonindustrial sources for pollutants of concern found in the Point Loma WTP effluent are summarized in Table III.H-8, Volume III of the application. Table 2-1 in Volume II of the application estimates 2002 through 2006 mean annual mass emissions (in metric tons per year) for California Ocean Plan Table B parameters discharged from the Point Loma Ocean Outfall; for this calculation, the applicant multiplies the annual average effluent concentration by the annual average discharge flow; effluent results of “not detected” are assumed by the applicant to have a concentration equal to or less than one-half the method detection limit. Table K.5-2 in Volume VIII of the application summarizes Point Loma WTP effluent mass emissions for cadmium, chromium, copper, lead, nickel, silver, and zinc, beginning in 1979 through 2006. (For reference, 1 metric ton is 1,000 kilograms which is approximately 2,205 pounds.)

Table 17. NOAA sediment quality guidelines, area-weighted means and 95% confidence intervals for mid-shelf (30-120 meters) sediments summarized for the Southern California Bight regional survey in 2003, and the applicant's method detection limits during 2006.

Parameter	NOAA ERL	NOAA ERM	Bight '03	MDL in 2006
Arsenic (ppm)	8.2	70	4.1±1.1	0.33
Cadmium (ppm)	1.2	9.6	0.36±0.11	0.01
Chromium (ppm)	81	370	36±8.0	0.016
Copper (ppm)	34	270	12±2.1	0.028
Lead (ppm)	46.7	218	7.4±1.5	0.142
Mercury (ppm)	0.15	0.71	0.10±0.03	0.003
Nickel (ppm)	20.9	51.6	14±3.7	0.036
Selenium (ppm)	---	---	1.2±0.43	0.24
Silver (ppm)	1.0	3.7	0.11±0.06	0.013
Zinc (ppm)	150	410	47+8.4	0.052
Total DDTs (ppt)	1,580	46,100	36,000±6,300	See annual report.
Total PCBs (ppt)	22,700	180,000	2,400±130	
Total PAHs (ppb)	4,022	44,792	60.3±43.3	

Arsenic. The applicant reports that arsenic is detected in 221 of 228 effluent samples during 2002 through 2006. Identified sources are pest control poisons. The 2002-2006 mean annual mass emission rate for the Point Loma WTP discharge is <0.26 metric tons per year.

Figure A-14 summarizes arsenic concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are slightly higher than pre-discharge levels; these increases are most pronounced at near-ZID station E14 and northern reference station B12. For January and July surveys, the mean arsenic concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 2.4 ppm and 3.2 ppm, respectively. During these two periods, the mean arsenic concentrations at near-ZID station E14 are 2.2 ppm and 3.4 ppm, respectively, while concentrations at northern reference station B9 are 2.1 ppm and 3.5 ppm, respectively. These concentrations are below the ERL threshold and similar to the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Figure E.5-7 in Volume IV, Attachment E.5, of the application summarizes arsenic concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Cadmium. The applicant reports that cadmium is detected in 65 of 228 effluent samples during 2002 through 2006. Identified sources are metal plating, metalworking and metal alloys, electronics, and batteries. The 2002-2006 mean annual mass emission rate for the Point Loma WTP discharge is <0.12 metric tons per year; during this period, annual mass emissions for cadmium have decreased.

Figure A-15 summarizes cadmium concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are much lower than pre-discharge levels; the elevated and variable levels recorded during the pre-discharge period are no longer observed and the applicant explains that the frequent detections which begin during the most recent discharge period are due to an improved method detection limit. For January and July surveys, the mean cadmium concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 1.3 ppm and 0.1 ppm, respectively. During these two periods, the mean cadmium concentrations at near-ZID station E14 are 1.1 ppm and 0.1 ppm, respectively, while concentrations at northern reference station B9 are 1.3 ppm and 0.1 ppm, respectively. Concentrations for the most recent discharge period are below the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Figure E.5-9 in Volume IV, Attachment E.5, of the application summarizes cadmium concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Chromium. The applicant reports that chromium is detected in 115 of 228 effluent samples during 2002 through 2006. Identified sources are metal plating, shipbuilding, and metalworking and metal alloys. The 2002-2006 mean annual mass emission rate for chromium (III) in the Point Loma WPT discharge is <0.66 metric tons per year; during this period, annual mass emissions for chromium have increased.

Figure A-16 summarizes chromium concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are similar to pre-discharge levels. For January and July surveys, the mean chromium concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 17.3 ppm and 17.6 ppm, respectively. During these two periods, the mean chromium concentrations at near-ZID station E14 are 15.8 ppm and 14.6 ppm, respectively, while concentrations at northern reference station B9 are 21.8 ppm and 22.8 ppm, respectively. These concentrations are below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Figure E.5-10 in Volume IV, Attachment E.5, of the application summarizes chromium concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Copper. The applicant reports that copper is detected in 228 of 228 effluent samples during 2002 through 2006. Identified sources are metal plating, electronics, tool manufacturing, electroplating, semiconductor manufacturing, shipbuilding, metalworking, and water pipe corrosion. The 2002-2006 mean annual mass emission rate for copper in the Point Loma WPT discharge is 12 metric tons per year; during this period, annual mass emissions for copper have decreased.

Figure A-17 summarizes copper concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are slightly higher than pre-discharge levels; levels at southern reference station E2 (near the LA-5 dredge materials disposal site) are generally elevated when compared to other 98 meter stations. For January and July surveys, the mean copper concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 7.4 ppm and 8.6 ppm, respectively. During these two periods, the mean copper concentrations at near-ZID station E14 are 6.7 ppm and 8.3 ppm, respectively; while concentrations at northern reference station B9 are 6.8 ppm and 8.7 ppm, respectively. These concentrations are below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Concentrations at southern farfield station E2 are below the ERL threshold, but slightly higher than the average background level for the Southern California Bight survey. Figure E.5-11 in Volume IV, Attachment E.5, of the application summarizes copper concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Lead. The applicant reports that lead is detected in 21 of 228 effluent samples during 2002 through 2006. Identified sources are metal plating, metalworking, paints, and batteries. The 2002-2006 mean annual mass emission rate for lead in the Point Loma WPT discharge is <1.3 metric tons per year; during this period, annual mass emissions for lead have increased.

Figure A-18 summarizes lead concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, the discharge period levels appear higher than pre-discharge levels; however, this may be due, in part, to improved method detection limit beginning in 2003. For January and July surveys, the mean lead concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 1.8 ppm and 3.9 ppm, respectively. During these two periods, the mean lead concentrations at near-ZID station E14 are 1.0 ppm and 2.8 ppm, respectively, while concentrations at northern reference station B9 are 1.2 ppm and 4.2 ppm, respectively. These concentrations are below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Figure E.5-13 in Volume IV, Attachment E.5, of the application summarizes lead concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Mercury. The applicant reports that mercury is detected in 7 of 228 effluent samples during 2002 through 2006. Identified sources are orthodontics, thermostats, and thermometers. The 2002-2006 mean annual mass emission rate for mercury in the Point Loma WPT discharge is <0.02 metric tons per year; during this period, annual mass emissions for mercury have decreased.

Figure A-19 summarizes mercury concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are higher than pre-discharge levels and quite variable from year-to-year; levels at southern reference station E2 (near the LA-5 dredge materials disposal site) are generally elevated when compared to other 98 meter stations. For January and July surveys, the mean mercury concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 0.011 ppm and 0.024 ppm, respectively. During these two periods, the mean mercury concentrations at near-ZID station E14 are 0.006 ppm and 0.017 ppm, respectively, while concentrations at northern reference station B9 are 0.002 ppm and 0.023 ppm, respectively. These concentrations are below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Concentrations at southern farfield station E2 are below both the ERL threshold and the average background level for the Southern California Bight survey. Figure E.5-15 in Volume IV, Attachment E.5, of the application summarizes mercury concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Nickel. The applicant reports that nickel is detected in 121 of 228 effluent samples during 2002 through 2006. Identified sources are metal plating, metalworking, and metal alloys. The 2002-2006 mean annual mass emission rate for nickel in the Point Loma WPT discharge is <2.0 metric tons per year; during this period, annual mass emissions for nickel have increased.

Figure A-20 summarizes nickel concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are similar to pre-discharge levels. For January and July surveys, the mean nickel concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 6.6 ppm and 6.3 ppm, respectively. During these two periods, the mean nickel concentrations at near-ZID station E14 are 5.7 ppm and 6.5 ppm, respectively, while concentrations at northern reference station B9 are 7.3 ppm and 7.2 ppm, respectively. These concentrations are below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Figure E.5-16 in Volume IV, Attachment E.5, of the application summarizes nickel concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Selenium. The applicant reports that selenium is detected in 228 of 228 effluent samples during 2002 through 2006. Identified sources are water supply. The 2002-2006 mean annual mass emission rate for selenium in the Point Loma WPT discharge is <0.26 metric tons per year; during this period, annual mass emissions for selenium have remained relatively constant.

Figure A-21 summarizes selenium concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are much lower than pre-discharge levels. The elevated and variable levels recorded during the pre-discharge period are no longer observed; however, the infrequent detections and resulting lower average concentrations for the most recent discharge period are likely due, in part, to use of a less sensitive method detection limit which began in 2003. For January and July surveys, the mean selenium concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 0.2 ppm and 0.1 ppm, respectively. During these two periods, the mean selenium concentrations at near-ZID station E14 are 0.2 ppm and 0.1 ppm, respectively, while concentrations at northern reference station B9 are 0.3 ppm and 0.1 ppm, respectively. These concentrations are well below the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. There is no ERL threshold for selenium. Figure E.5-17 in Volume IV, Attachment E.5, of the application summarizes selenium concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Silver. The applicant reports that silver is detected in 35 of 228 effluent samples during 2002 through 2006. Identified sources are photo processing. The 2002-2006 mean annual mass emission rate for silver in the Point Loma WPT discharge is <0.4 metric tons per year; during this period, annual mass emissions for silver have decreased and then remained relatively constant.

Figure A-22 summarizes silver concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, silver is rarely detected, but EPA notes that the detections which begin during the most recent discharge period (2001-2006) are likely due to an improved method detection limit beginning in 2003. For January and July surveys, the mean silver concentration for all 98 meter stations during the most recent discharge period (2001-2006) is 0.054 ppm. During this period, the mean silver concentration at near-ZID station E14 is 0.045 ppm, while the concentration at northern reference station B9 is 0.057 ppm. During the most recent discharge period, all silver concentrations are below the ERL threshold. During the most recent discharge period, except in 2006, all silver concentrations are generally below the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Figure E.5-18 in Volume IV, Attachment E.5, of the application summarizes silver concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Zinc. The applicant reports that zinc is detected in 225 of 228 effluent samples during 2002 through 2006. Identified sources are metalworking, electronics, tool manufacturing, electroplating, circuit printing, shipbuilding, metalworking, research institutions, and water pipe corrosion. The 2002-2006 mean annual mass emission rate for zinc in the Point Loma WPT discharge is 5.9 metric tons per year; during this period, annual mass emissions for zinc have remained relatively constant.

Figure A-23 summarizes zinc concentrations in sediment at each 98 meter station, during July, from 1991 through 2006. At these stations, discharge period levels are similar to pre-discharge levels. For January and July surveys, the mean zinc concentrations for all 98 meter stations during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) are 28.0 ppm and 27.8 ppm, respectively. During these two periods, the mean zinc concentrations at near-ZID station E14 are 25.2 ppm and 23.7 ppm, while concentrations at northern reference station B9 are 31.6 ppm and 33.9 ppm, respectively. These concentrations are below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey. Figure E.5-19 in Volume IV, Attachment E.5, of the application summarizes zinc concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Total DDTs. DDT and its derivatives are pesticides that were banned for use in the U.S. in 1972, but are still used in some countries. The applicant reports that DDT and its derivatives are generally not detected in effluent samples. (In 2006, the method detection limits for DDT and its derivatives in effluent ranged from 10 to 60 ng/l.) The 2002-2006 mean annual mass emission rate for the Point Loma WTP discharge is “not detected”.

Figure A-24 summarizes concentrations in sediment for total DDTs at each 98 meter station, during July, from 1991 through 2006; since 1997, concentrations are detected less frequently. For January and July surveys, the mean concentration for total DDTs at all 98 meter stations during the most recent discharge period (2001-2006) is 137 parts per trillion (ppt). (In 2007, the method detection limits for DDT and its derivatives in sediment ranged from 400 to 700 ppt.) During this period, the mean concentration is 42 ppt at near-ZID station E14 and 412 ppt at northern reference station B9. During the most recent discharge period, individual station concentrations are well below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey, except at nominal northern reference station B9 and southern farfield station E2, where concentrations higher than the ERL threshold are reported in 2001. Figure E.5-20 in Volume IV, Attachment E.5, of the application summarizes total DDT concentrations in sediments for the San Diego Coastal region during the period of the discharge (1994-2000 and 2001-2006).

Total PCBs. PCBs are synthetic organic chemicals used as coolants and lubricants in transformers and capacitors; they were banned from industrial use in the U.S. in 1977. The applicant reports that PCBs are generally not detected in effluent samples. (In 2006, the method detection limit for PCBs in effluent was 4,000 ng/l). The 2002-2006 mean annual mass emission rate for the Point Loma WTP discharge is “not detected”.

EPA reviewed summary concentrations in sediment for total PCBs at each 98 meter station, during July, from 2001 through 2006; concentrations are only rarely detected at these stations. For January and July surveys, the mean concentration for total PCBs at all 98 meter stations during the most recent discharge period (2001-2006) is 62 ppt. (In 2007, the method detection limit for all but three of the 41 monitored PCB congeners is 700 ppt.) During this period, the mean concentration is “not detected” at both near-ZID station E14 and northern reference station B9. During the most recent discharge period, all individual station concentrations are well below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey, including southern farfield station E5 (in 2001) and southern farfield station E2 (in 2002, 2004 and 2006) where PCBs detections are reported.

Total PAHs. PAHs are a group of 100 different chemicals formed during the incomplete burning of coal, oil and gas, garbage, or other organic substance. They are found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides. The applicant reports that PAHs are generally not detected in effluent samples. (In 2006, the method detection limit for PAHs in effluent was 6.61 ug/l). The 2002-2006 mean annual mass emission rate for the Point Loma WTP discharge is “not detected”.

EPA reviewed summary concentrations in sediment for total PAHs at each 98 meter station, during July, from 2001 through 2006. At these stations, pre-discharge and discharge period levels are almost always “not detected”, until 2003 when method detection limits are improved; subsequently, PAHs are usually detected at each station (Figure A-25). For January and July surveys, the mean concentration for total PAHs at all 98 meter stations during the most recent discharge period (2001-2006) is 110 parts per billion (ppb). During this period, the mean concentration is 78 ppb at near-ZID station E14 and 110 ppb at northern reference station B9. During the most recent discharge period, all individual station concentrations are well below both the ERL threshold and the average background level for mid-depth sediments summarized for the 2003 Southern California Bight survey.

Based on this review, EPA concludes that the chemical characteristics in sediments beyond the zone of initial dilution are not changed by the modified discharge such that toxic substances in Table B of the California Ocean Plan are increased to levels which would degrade indigenous biota.

2. Impact of the Discharge on Public Water Supplies

Implementing CWA section 301(h)(2), 40 CFR 125.62(b) specifies that the discharge must allow for the attainment and maintenance of water quality that assures protection of public water supplies. Appendix III, Large Applicant Questionnaire section III.C, of the application describes a planned seawater desalination facility in San Diego County that is located about 30 miles north of the PLOO discharge (Regional Water Board Order No. R9-2006-0065, NPDES No. CA0109233). Based on the expected ability of the Point Loma WTP discharge to meet water quality standards and the distance to the nearest desalination facility, EPA concludes that the applicant’s proposed modified discharge will have no effect on the protection of public water supplies and will not interfere with the use of planned or existing public water supplies.

3. Impact of the Discharge on Shellfish, Fish, and Wildlife

Implementing CWA section 301(h)(2), 40 CFR 125.62(c)(1) through (3) specify that the modified discharge must allow for the attainment or maintenance of water quality which assures protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife. A balanced indigenous population must exist immediately beyond the zone of initial dilution of the applicant's modified discharge; and in all other areas beyond the zone of initial dilution where marine life is actually or potentially affected by the discharge. Conditions within the zone of initial dilution must not contribute to extreme adverse biological impacts, including, but not limited to, the destruction of distinctive habitats of limited distribution, the presence of disease epicenters, or the stimulation of phytoplankton blooms which have adverse effects beyond the zone of initial dilution. The term "balanced indigenous population" is defined at 40 CFR 125.58 and means an ecological community which exhibits characteristics similar to those of nearby, healthy communities existing under comparable but unpolluted environmental conditions; or may reasonably be expected to become re-established in the polluted water body segment from adjacent waters if sources of pollution were removed. Also, Chapter II of the California Ocean Plan contains the following water quality objective for biological characteristics of ocean waters: "Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded." For this review, biological data collected by the applicant are analyzed in three categories: phytoplankton, benthic infauna, and fish and epibenthic invertebrates.

a. Phytoplankton

Wastewater discharges from ocean outfalls may influence the abundance and distribution of plankton in two important ways. Effluent particulates may rise into the euphotic zone (generally less than 20 meter water depths) and inhibit light penetration, thereby reducing phytoplankton primary productivity. Also, nutrient loading can cause an increase in the abundance of undesirable species. The California Ocean Plan specifies that in ocean water: "Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste." and "Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota." There are no numerical water quality objectives for nutrients in the California Ocean Plan. Compliance with these water quality objectives are determined from samples collected at stations representative of the area within the wastefield where initial dilution is completed. The typical depth range of the PLOO wastefield is 60 to 80 meters below the surface which is well below the euphotic zone. Under its existing NPDES permit, the City is not required to monitor plankton or ammonia. Therefore, EPA has reviewed parameters monitored by the applicant that relate to phytoplankton productivity and standing stock, such as effluent total suspended solids, light transmittance, effluent ammonia, and chlorophyll a. Attachment T1 in Volume XIII, Appendix T, of the 1995 application describes the plankton communities found in waters off San Diego County and summarizes studies on phytoplankton conducted on a regional scale in the Southern California Bight.

Based on the water quality modeling result for total suspended solids concentrations at the completion of initial dilution under worst case conditions and monitoring data for light transmittance throughout the water column, EPA concludes that the Point Loma discharge does not result in a significant reduction in natural light in areas within the wastefield where initial dilution is completed. This indicates that the discharge of total suspended solids should not result in a significant change in the productivity or standing stock of phytoplankton.

Total ammonia-nitrogen (NH_4^+-N and NH_3-N) in an effluent discharge may affect phytoplankton productivity and standing stock because nitrogen is a limiting nutrient in coastal waters of the Southern California Bight. Under its existing NPDES permit, the City conducts the required weekly effluent monitoring for ammonia (expressed as nitrogen). Effluent data for ammonia-nitrogen are summarized, as follows.

Table 18. Monthly average and annual average effluent concentrations for total ammonia-nitrogen (mg/l) at Point Loma WTP.

Month	2002	2003	2004	2005	2006	2007
January	29.4	26.0	28.6	24.2	29.5	31.2
February	27.1	25.4	25.7	26.0	32.3	31.0
March	29.0	24.4	27.5	23.8	31.1	31.0
April	29.1	28.9	26.8	27.7	30.4	32.7
May	30.0	29.5	29.0	27.9	30.7	31.7
June	26.4	30.2	28.6	29.3	29.3	32.5
July	26.8	29.6	27.8	28.4	30.1	32.2
August	28.4	27.9	28.8	28.1	30.5	30.5
September	26.9	28.7	27.3	28.6	30.4	31.4
October	27.3	27.9	25.2	28.6	30.6	31.7
November	27.8	26.6	26.4	28.7	30.9	30.6
December	26.3	27.7	26.7	28.9	32.6	28.5
Annual Average	27.9	27.7	27.4	27.5	30.7	31.3
Maximum Month	30.0	30.2	29.0	29.3	32.6	32.7
Minimum Month	26.3	24.4	25.2	23.8	29.3	28.5

Based on the effluent concentrations in Table 18 and the minimum monthly average initial dilution of 204:1 estimates for ammonia at the completion of initial dilution range from 0.1 to 0.2 mg/l. Such concentrations in the euphotic zone have the potential to stimulate phytoplankton productivity around an outfall, as natural background concentrations for ammonia within the euphotic zone of the Southern California Bight are typically an order of magnitude lower (Eppley et al., 1979). Based on the applicant's dilution modeling using time series data, the height-of-rise to the average level of minimum dilution varies from about 20 to 31 meters above the bottom, corresponding to water depths of 62 to 74 meters. The height-of-rise to the average top of the wastefield varies from about 30 to 40 meters above the bottom, corresponding to water depths of about 54 to 64 meters. The maximum height-of-rise to the top of the wastefield during a month varies from about 50 to 64 meters above the bottom, corresponding to water depths of about 30 to 44 meters. Figure O-16 in Volume VIII, Appendix O, of the application. Both dilution modeling and bacteria monitoring data at offshore stations support the conclusion that the wastewater plume is trapped below the euphotic zone most of the time. Consequently, the influence of wastefield ammonia concentrations on phytoplankton should be minimal.

Under its existing NPDES permit, the City conducts the required quarterly monitoring for chlorophyll a, throughout the water column, at a grid of 33 offshore stations located along the 98, 80 and 60 meter contours. EPA evaluated the applicant's monitoring results from October 2003 through October 2007. At water depths frequented by the drifting wastefield, the long-term average for chlorophyll a ranges from 0.8 to 1.4 ug/l. As shown in Table B-6 and Figure A-26, the long-term average for chlorophyll a measured at the near-ZID boundary station (F30) is similar to long-term averages measured at nearfield and farfield stations.

Based on the water quality modeling results for total suspended solids and ammonia concentrations at the completion of initial dilution and monitoring data for light transmittance and chlorophyll a throughout the water column evaluated in this review, EPA concludes that total suspended solids and nutrient materials in the Point Loma discharge will not result in a significant change in the productivity or standing stock of phytoplankton, will not cause natural light to be significantly reduced beyond the initial dilution zone, and will not cause objectionable aquatic growths or degrade indigenous biota.

b. Benthic Macrofauna

Organisms with limited mobility that live in bottom sediments are used as indicators of the condition of marine environments because they respond to many different types of environmental stress and their responses integrate environmental conditions over time. Under its existing NPDES permit, the City conducts the required semi-annual monitoring, during January and July, at 12 primary stations located at the depth of the outfall along the 98 meter contour and a total of 10 secondary stations located along the 88 and 116 meter contours.

To evaluate the condition of the benthic macrofauna community in the area of the outfall and identify trends, EPA examined benthic macrofauna monitoring data for pre-discharge (1991-1993) and discharge monitoring surveys (1994-2006) conducted during July, at the depth of the outfall along the 98 meter contour (Figure A-4). A subset of these stations (E17, E14, and E11) spans the outfall diffuser. Near-ZID station E14 is closest to the diffuser, approximately 111 meters north and 256 meters west of the center of the diffuser wye. It is the most likely site to be impacted by the wastewater discharge. Nearfield stations E17 and E11 are located approximately 204 meters north and south, respectively, of the ends of the diffuser legs. The remaining "E" stations are considered farfield sites. The two "B" stations, located more than 11 kilometers north of the outfall, were originally selected to represent reference or control sites. However, benthic macrofauna communities differed between the “B” and “E” stations prior to operation of the outfall (Volume IV, Appendix E, of the application). Therefore, northern farfield station E26 is used as an additional (nominal) reference or control site. This station, located about 8 kilometers north of the outfall, is considered the least likely “E” station to be impacted by the discharge.

Summary statistics and trends for species richness, total abundance of all taxa, total abundance of several indicator taxa, and a Southern California Bight benthic index are reviewed by EPA. Both the applicant and EPA use two statistical approaches to evaluate observed changes in various benthic macrofauna community parameters near the outfall diffuser relative to control sites and reference conditions.

BACIP Approach

The applicant has used a BACIP (Before-After-Control-Impact-Paired) t-test to test the null hypothesis that there are no changes in various benthic macrofauna community parameters due to operation of the outfall. The BACIP model tests differences between control and impact sites at times before and after an impact event, in this case, the onset of wastewater discharge at the present location. Data are limited to three pre-discharge (1991-1993) and 13 discharge (1994-2006) surveys during July, at EPA’s request. Near-ZID station E14 and nearfield stations E17 or E11 are used as separate “impact” sites for the analysis because they are close to the boundary of the zone of initial dilution and more susceptible to impact. To the north, stations B9 and E26 are used as separate control sites for the analysis. Seven dependent variables are analyzed: species richness, total abundance of all benthic macrofauna taxa, Benthic Response Index, and abundance of the pollution sensitive indicator taxon, *Amphiodia* spp., and three pollution tolerant indicator taxa, *Euphilomedes* spp., *Parvilucina tenuisculpta*, and *Capitella* “*capitata*” (a species complex).

The applicant notes that the spatial and temporal variation inherent to many biological communities may lead to an increased chance of Type II error (falsely concluding that no impact has occurred). One solution is to increase the probability of Type I error (falsely concluding that an impact has occurred) by changing alpha, thereby increasing the power of the test and making the detection of “impact” less conservative. Consequently, all BACIP analyses are interpreted using both the conventional Type I error rate of alpha = 0.05 and the higher Type I error rate of alpha = 0.10. Results of the applicant’s BACIP analyses are summarized in Table 19.

Table 19. BACIP t-test results for six dependent variables around the Point Loma Ocean Outfall. Pre-discharge n=3 and discharge n=13. "*" means significant at alpha = 0.05; "**" means significant at alpha = 0.1; and "ns" means not significant.

Indicator	Comparison (Control v. Impact)	t-value	p-value	Significance (July only)
Species Richness	E26 v. E17	2.513	0.012	*
	E26 v. E14	-2.120	0.026	*
	E26 v. E11	1.637	0.062	**
	B9 v. E17	-2.606	0.010	*
	B9 v. E14	-3.010	0.005	*
	B9 v. E11	-1.358	0.098	**
Total Abundance	E26 v. E17	-0.434	0.335	ns
	E26 v. E14	-0.464	0.325	ns
	E26 v. E11	0.082	0.468	ns
	B9 v. E17	-0.567	0.290	ns
	B9 v. E14	-2.569	0.011	*
	B9 v. E11	-1.319	0.104	ns
Amphiodia spp. Abundance	E26 v. E17	-2.531	0.012	*
	E26 v. E14	-3.482	0.002	*
	E26 v. E11	-2.363	0.017	*
	B9 v. E17	-1.255	0.115	ns
	B9 v. E14	-5.645	<0.001	*
	B9 v. E11	-1.391	0.093	**
Euphilomedes spp. Abundance	E26 v. E17	0.111	0.457	ns
	E26 v. E14	-1.965	0.035	*
	E26 v. E11	-1.476	0.081	**
	B9 v. E17	-2.550	0.012	*
	B9 v. E14	-4.304	<0.001	*
	B9 v. E11	-2.701	0.012	*
Parvilucina tenuisculpta Abundance	E26 v. E17	0.626	0.271	ns
	E26 v. E14	-0.109	0.457	ns
	E26 v. E11	1.373	0.096	**
	B9 v. E17	-0.884	0.196	ns
	B9 v. E14	-1.877	0.041	*
	B9 v. E11	0.483	0.318	ns

These results are discussed, below.

Tolerance Interval Approach

An understanding of reference condition is important when evaluating environmental monitoring results. When appropriate data from regional reference locations are available, tolerance interval bounds can be computed to provide criteria or limits distinguishing reference from nonreference conditions. A tolerance interval is a statistical interval within which a specified proportion of the population falls, with some confidence. For example, it can describe—with a desired degree of statistical certainty—the lower 10^{th} and upper 90^{th} percentile of "average species richness" found among the San Diego regional monitoring stations for a particular benthic assemblage.

Based on a statistical analysis of sampling data from 1994 through 2003, the applicant determined the subset of San Diego regional survey stations which best represents a suitable reference assemblage for comparisons with "E" and "B" stations at the depth of the outfall. This subset of regional stations is generally confined between the 60 and 120 meter depth contours and ranges from near Solana Beach in the north, to the Tijuana River region in the south. Summary statistics and tolerance interval bounds defining reference conditions for benthic macrofauna community parameters within the region of the PLOO are presented in Table 20. If an impact site value is near or within the tolerance interval bounds for reference conditions, then impact can be deemed minimal or nonexistent. The further an impact site value deviates from a reference condition bound, the more serious the impact should be judged.

Table 20. Tolerance intervals and summary data for various benthic indicators at randomly selected San Diego regional stations from 1994 through 2003, based on cluster group F (Attachment E.1 in Volume IV, Appendix E, of the application).

Indicator by Year											Tolerance Interval	
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Lower	Upper
Species Richness												
Mean	73.9	119.9	116.4	82.9	78.4	112.4	109.7	121.2	112.6	67.4	72	175
Min	33	48	33	30	26	38	56	52	37	21		
Max	137	206	266	165	179	242	203	226	244	119		
Total Abundance												
Mean	325.2	321.0	328.3	351.7	362.5	353.2	310.5	319.9	278.4	222.2	230	671
Min	91	56	45	79	39	87	73	65	67	56		
Max	1031	880	1219	1467	756	1166	585	1082	890	567		
Amphiodia spp. Abundance												
Mean	39.7	45.1	52.6	45.0	58.2	41.4	53.5	32.0	32.9	19.8	1	216
Min	0	0	0	0	0	0	0	0	0	0		
Max	191	178	216	209	220	203	194	185	150	81		
Euphilomedes spp. Abundance												
Mean	3.7	4.0	3.6	9.6	2.3	1.2	1.0	1.4	1.8	3.9	0	34
Min	0	0	0	0	0	0	0	0	0	0		
Max	28	25	17	93	15	9	9	12	14	34		
Parvilucina tenuisculpta Abundance												
Mean	2.4	1.9	1.5	1.6	2.1	1.9	2.4	2.9	1.6	2.2	0	12
Min	0	0	0	0	0	0	0	0	0	0		
Max	17	14	10	12	12	12	12	12	12	21		
Capitella "*capitata*" Abundance												
Mean	2.1	0.1	0.2	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0	2
Min	0	0	0	0	0	0	0	0	0	0		
Max	69	2	3	0	2	1	1	0	0	1		
Benthic Response Index												
Mean	6.9	10.3	12.4	10.6	10.7	8.0	7.2	10.6	9.9	9.8	-0.65	15
Max	-14.2	-11.8	-4.7	-2.4	1.2	-5.2	-3.3	-4.2	-0.8	-4.6		
Min	32.0	30.6	26.4	28.5	20.2	24.1	24.8	22.3	24.6	20.3		

These results are discussed, below.

Species richness. A potential indicator of environmental degradation is a reduction in the number of benthic macrofauna taxa (diversity) present near an outfall. Figure A-27 summarizes the average species richness per 0.1 m^2 at each 98 meter station, during July, from 1991 through 2006. At these stations, the discharge period mean is higher than the pre-discharge mean; these increases are more pronounced at near-ZID station E14 and northern reference station B12. Mean species richness for all 98 meter stations in July during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) is 70.7 and 97.0, respectively. During these two periods, mean species richness at near-ZID station E14 is 67.7 and 109.7, respectively, while mean species richness at northern reference station B9 is 64.2 and 91.5, respectively. BACIP analyses in Table 19 indicate that species richness at near-ZID station E14 and nearfield stations E17 or E11 are statistically significantly different when compared to either northern reference station B9 or nominal northern reference station E26. This suggests that organic enrichment may be enhancing the diversity of taxa near the outfall. During the most recent discharge period, average species richness ranged from 105.0 to 119.5 at station E14, 81.0 to 110.0 at station E17, and 80.0 to 117.5 at station E11. These impact site values are within the species richness tolerance interval (72-175) calculated for reference conditions identified in the San Diego regional surveys (Table 20). Thus, although changes in species richness at the outfall are statistically significant, they are not likely to be environmentally significant in comparison to Southern California Bight reference conditions.

Total abundance. Changes in the total abundance of benthic macrofauna taxa are used to demonstrate an outfall effect. These changes can vary depending on the level of organic enrichment in the area of an outfall. For example, total abundance is predicted to increase in response to low or moderate levels of organic enrichment. Generally, such increases are not considered adverse unless they are accompanied by a reduction in species richness, or material alterations in the abundances of pollution sensitive and pollution tolerant taxa. As organic enrichment increases, extremely high abundances associated with a further reduction in species richness is indicative of an adverse outfall effect. Abundances are expected to decline when organic enrichment causes anoxic conditions in sediments and indicates a degraded condition due to the outfall. Also see Appendix C in the ATSD (USEPA, 1994).

Figure A-28 summarizes the average total abundance of benthic macrofauna taxa per 0.1 m^2 at each 98 meter station, during July, from 1991 through 2006. At these stations, the discharge period mean is higher than the pre-discharge mean. Mean total abundance for all 98 meter stations in July during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) is 308.0 and 377.8, respectively. During these two periods, mean total abundance at near-ZID station E14 is 293.7 and 523.1, respectively, while mean total abundance at northern reference station B9 is 255.8 and 352.8, respectively. BACIP analyses in Table 19 indicate that mean total abundance at near-ZID station E14 and nearfield stations E17 or E11 are not statistically significantly different when compared to nominal northern reference station E26; only station E14 is statistically significantly different when compared to northern reference station B9. This suggests that while organic enrichment is occurring near the outfall, the effect on total abundance is relatively minor. During the most recent discharge period, average total abundance ranged from 446.5 to 590.5 at station E14, 240.5 to 475 at station E17, and 282.5 to 463 at station E11. These impact site values are within the total abundance tolerance interval (230-671) calculated for reference conditions identified in the San Diego regional surveys (Table 20). Although a statistically significant change in total abundance at the near-ZID boundary station E14 has occurred in relation to one control site, a similar change has not occurred in relation to nominal reference station E26 (also a control site). Moreover, in relation to the tolerance interval, this change is not likely to be environmentally significant in comparison to Southern California Bight reference conditions.

Pollution Sensitive Indicator Taxon

Amphiodia spp. For this review, EPA examined one pollution sensitive indicator taxon used to evaluate organic enrichment around outfalls. *Amphiodia urtica*, an ophiuroid echinoderm, is used as a key indicator species because it is one of the most abundant species found in mainland shelf sediments in the Southern California Bight and its populations decline near sewage outfalls. Both the applicant and EPA evaluated *Amphiodia* spp. (comprised of *A. urtica*, *A. digitata*, *A. psara*, and *A.* sp.). According to the applicant, *A. urtica* is most common at depths of about 60 meters and begins to naturally decrease at depths of about 100 meters. *A. digitata* is found in deeper waters and coarser sediments. The applicant grouped juveniles and damaged specimens as *A.* sp.

Figure A-29 summarizes the average abundance of *Amphiodia* spp. per 0.1 m^2 at each 98 meter station, during July, from 1991 through 2006. At these stations, the discharge period mean is slightly higher than the pre-discharge mean and year-to-year averages at near-ZID station E14 are distinctly lower and variable. Mean abundance for all 98 meter stations in July during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) is 41.7 and 37.0, respectively. During these two periods, mean abundance at near-ZID station E14 is 38.3 and 8.8, respectively, while mean abundance at northern reference station B9 is 35.7 and 48.0, respectively. BACIP analyses in Table 19 indicate that abundance at near-ZID station E14 and nearfield station E11 are statistically significantly different when compared to either northern reference station B9 or nominal northern reference station E26. BACIP analyses also indicate that abundance at near-ZID station E17 is statistically significantly different only when compared to nominal northern reference station E26. This reduction in abundance is likely due in large part to organic enrichment around the outfall, although the applicant has also hypothesized increased fish predation at the impact site or region-wide influences unrelated to the outfall. Figure A-29 suggests that the reduction in average abundance does not extend into the nearfield. During the most recent discharge period (2001-2006), average abundance ranged from 5.0 to 20.5 at station E14, 14 to 41.5 at station E17, and 20 to 64.5 at station E11. These impact site values are within the abundance tolerance interval (1-216) calculated for reference conditions identified in the San Diego regional surveys (Table 20). Although changes in the abundance of *Amphiodia* spp. at the outfall are statistically significant, they are not accompanied by a decrease in species richness or a detrimental increase in total abundance of benthic macrofauna taxa. Moreover, in relation to the tolerance interval, this change is not likely to be environmentally significant in comparison to Southern California Bight reference conditions.

Pollution Tolerant Indicator Taxa

For this review, EPA examined three pollution tolerant indicator taxa used to evaluate organic enrichment around outfalls.

Euphilomedes spp. Crustaceans known to be tolerant of organic enrichment are ostracods in the genus, *Euphilomedes*. Both the applicant and EPA evaluated *Euphilomedes* spp. (comprised of *E. carcharodonta*, *E. producta*, *E. longiseta*, and *E.* sp.). According to the applicant, the ratio of *E. carcharodonta* and E. producta are about 50:50 at depths of about 100 meters.

Figure A-30 summarizes the average abundance of *Euphilomedes* spp. per 0.1 m^2 at each 98 meter station, during July, from 1991 through 2006. At these stations, the discharge period mean is similar to the pre-discharge mean and year-to-year averages generally trend lower with distance from the outfall. Mean abundance for all 98 meter stations in July during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) is 19.4 and 23.3, respectively. During these two periods, mean abundance at near-ZID station E14 is 18.3 and 41.3, respectively, while mean abundance at northern reference station B9 is 22.3 and 11.9, respectively. BACIP analyses in Table 19 indicate that abundance at near-ZID station E14 and nearfield station E11 are statistically significantly different when compared to either northern reference station B9 or nominal northern reference station E26. BACIP analyses also indicate that abundance at near-ZID station E17 is statistically significantly different only when compared to nominal northern reference station B9. This increase in abundance is likely due in large part to organic enrichment at the outfall. During the most recent discharge period (2001-2006), average abundance ranged from 25.5 to 62.5 at station E14, 22 to 45.5 at station E17, and 18.5 to 42.5 at station E11. These impact site values are above the upper bound of the abundance tolerance interval (0-34) calculated for reference conditions identified in the San Diego regional surveys (Table 20), but in the range of average abundance observed during this period at northern reference station B12 (17.5-60) and during the regional surveys (0-93).

The applicant notes that *Euphilomedes* spp. abundances above the upper tolerance bound are frequently observed at other 98 meter stations and suggests this may be due to region-wide influences unrelated to the outfall (Figure E.1-4 in Attachment E.1 of Volume IV, Appendix E, of the application). EPA agrees that while an outfall related pattern appears to occur at near-ZID station E14, cyclical patterns in abundance suggest other factors may be influencing *Euphilomedes* spp. at 98 meter stations beyond the zone of initial dilution.

Parvilucina tenuisculpta. A mollusc known to be tolerant of organic enrichment is the bivalve, *Parvilucina tenuisculpta*. It is found in high abundances in areas of moderate organic enrichment.

Figure A-31 summarizes the average abundance of *Parvilucina tenuisculpta* per 0.1 m^2 at each 98 meter station, during July, from 1991 through 2006. At these stations, the discharge period mean is similar to the pre-discharge mean and year-to-year averages at near-ZID station E14 are generally elevated when compared to other 98 meter stations. Mean abundance for all 98 meter stations in July during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) is 3.0 and 3.3, respectively. During these two periods, mean abundance at near-ZID station E14 is 1.0 and 9.8, respectively, while mean abundance at northern reference station B9 is 3.5 and 4.3, respectively. BACIP analyses in Table 19 indicate that abundance at near-ZID station E14 and nearfield station E11 are statistically significantly different when compared to either northern reference station B9 or nominal northern reference station E26. BACIP analyses also indicate that abundance at near-ZID station E17 is statistically significantly different only when compared to northern reference station B9. This increase in abundance is likely due to organic enrichment around the outfall. During the most recent discharge period (2001-2006), average abundance ranged from 0 to 32 at station E14, 0 to 8.5 at station E17, and 0.5 to 4.5 at station E11. These impact site values are above the upper bound of the abundance tolerance interval (0-12) calculated for reference conditions identified in the San Diego regional surveys (Table 20), indicating that moderate levels of organic enrichment are indeed occurring at near-ZID station E14.

Capitella "*capitata*" Species Complex. A polychaete known to be tolerant of organic enrichment and other disturbances is *Capitella* "*capitata*". According to the applicant, background abundances are generally near zero, in the Southern California Bight, but may reach densities of 100 per 0.1 m^2 in areas of excessive organic deposits. Volume IV, Appendix E, of the application.

Figure A-32 summarizes the average abundance of *Capitella* "*capitata*" per 0.1 m^2 at each 98 meter station, during July, from 1991 through 2006. At these stations, the discharge period mean is higher than the pre-discharge mean and year-to-year averages at near-ZID station E14 are generally much higher when compared to other 98 meter stations. Mean abundance for all 98 meter stations in July during the pre-discharge (1991-1993) and most recent discharge period (2001-2006) is 0.0 and 0.8, respectively. During these two periods, mean abundance at near-ZID station E14 is 0.0 and 7.2, respectively, while mean abundance at northern reference station B9 is 0.0 and 0.1, respectively. This increase in abundance is likely due to organic enrichment around the outfall. BACIP analyses were not conducted because abundances at control sites are generally zero. During the most recent discharge period (2001-2006), average abundance ranged from 0.0 to 17.5 at station E14, 0.0 to 0.5 at station E17, and 0.0 to 4.0 at station E11. The impact site values at station E14 and E11 are well above the upper bound of the abundance tolerance interval (0-2) calculated for reference conditions identified in the San Diego regional surveys (Table 20). This indicates that variable levels of low to moderate organic enrichment are indeed occurring at these two stations. Other indicators of benthic macrofauna community condition do not show a decrease in species richness or a detrimental increase in total abundance of benthic macrofauna taxa dominated by pollution tolerant species.

Benthic Response Index. The Benthic Response Index (BRI) is an index developed by the Southern California Coastal Water Research Project as part of the Southern California Bight Pilot Project (Smith et al., 2001). Index values below 25 suggest "reference condition" and those in the range of 25 to 33 represent a "minor deviation from reference condition". A "loss in biodiversity" is set at an index value of 34. Index values greater than 44 indicate a "loss in community function". "Defaunation" is set at an index value of 72. Validation has shown that the BRI is most accurate from water depths of 31 to 200 meters which includes the middle and outer continental shelf (Ranasinghe, 2007) and the water depth of the Point Loma outfall.

Figures E-27 and E-28 in Volume IV, Appendix E, of the application summarize BRI per 0.1 m^2 at the 98 meter stations, from 1991 through 2006. Index values show a distinct outfall-related pattern during the discharge period (1994-2006). During the most recent discharge period (2001-2006), the mean BRI values at near-ZID station E14 are approaching 25, above which a loss in biodiversity is indicated. The mean BRI for all 98 meter stations, in January and July, during the pre-discharge (1991-1993) and most recent discharge period, is 4.2 and 6.2, respectively. During these two periods, the mean BRI at near-ZID station E14 is 4.9 and 13.9, respectively, while the mean BRI at northern reference station B9 is 6.1 and 2.3, respectively. BACIP analyses indicate that the BRI at near-ZID station E14 is statistically significantly different when compared to either northern reference station B9 or nominal northern reference station E26 (Table E-6 in Volume IV, Appendix E, of the application). The impact site mean for the most recent discharge period (13.9) is below the upper bound of the BRI tolerance interval (-0.65-15) calculated for reference conditions identified in the San Diego regional surveys (Table 20) and below the threshold level which indicates minor deviations from reference conditions. Annual BRI values approaching 25 are of concern to EPA because alteration from reference condition, although minor, is predicted at sites above this threshold. Changes in the BRI at station E14, in combination with other benthic macrofauna indicators of community condition, forecast that while anticipated TSS mass emissions over the proposed permit term will comply with CWA section 301(h) and (j)(5) requirements, the applicant needs to develop and implement an integrated long term plan which will reduce the organic loading that has been projected for the PLOO through 2027 (Table II.A-21 in Volume III of the application), so as to maintain long-term compliance with this decision criterion.

In conclusion, there are often statistically significant changes at near-ZID station E14 and sometimes at nearfield stations E17 and E11 in benthic macrofauna indicator parameters evaluated for this review. However, EPA observes that conditions at and beyond the near-ZID station are generally similar to reference conditions identified in the San Diego regional surveys. EPA notes that low numbers of pollution sensitive and pollution tolerant taxa are variably present at the near-ZID station and indicate a moderate level of organic enrichment in this area. Slight reductions in the abundance of *Amphiodia* spp., a pollution sensitive taxon, at nearfield stations indicate that a low level of organic enrichment extends beyond the zone of initial dilution into the nearfield. There appear to be no impacts to benthic macrofauna associated with the accumulation of toxic substances discharged from the outfall. Based on the evidence described in this section, EPA concludes that conditions beyond the zone of initial dilution are not degraded in compliance with the California Ocean Plan and support an ecological community which exhibits characteristics similar to those of nearby, healthy communities existing under comparable but unpolluted environmental conditions.

c. Demersal Fish

Chapter II of the California Ocean Plan contains the following water quality objective for biological characteristics of ocean waters: "Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded." Demersal (bottom dwelling) fish communities are inherently variable due to their mobility and the influences of natural and anthropogenic factors. Under its existing NPDES permit, the City conducts the required semi-annual monitoring, during January and July, at six stations in trawl zones located at the depth of the outfall along the 98 meter contour. Nearfield stations SD12 and SD10 are within 1.2 kilometers of the outfall. Northern farfield stations SD14 and SD13 are located approximately 8 kilometers north of the outfall and southern farfield stations SD8 and SD7 are located approximately 9 kilometers south of the outfall. Station SD8 is located within a couple of kilometers of EPA-designated dredge materials disposal site LA-5 while station SD7 is located within one kilometer of non-active dredge materials disposal site LA-4.

EPA did not reanalyze the raw data for demersal fish submitted with the application. Rather, to evaluate the condition of demersal fish in the area of the outfall and identify trends, EPA reviewed the applicant's analyses of monitoring data for pre-discharge (1991-1993) and discharge monitoring surveys (1994-2006), conducted during January and July, along the 98 meter contour (Figure A-33).

Table 21 summarizes two indicator parameters of fish community structure calculated by the applicant. The average number of fish species (species richness) collected per trawl over the 16 year monitoring period ranges from 7 to 26. Over the pre-discharge and discharge periods, the average number of species has increased from 13 to 15 in the nearfield and 14 to 15 in the farfield. Year-to-year fish abundances (total catch) are quite variable and have increased in both the nearfield and farfield, since discharge began. The applicant reports that much of this variability is due to fluctuations in the populations of dominant species (e.g., Pacific sanddab) and sporadically common species (e.g., halfbanded rockfish). Figures E-36 through E-38 in Volume IV, Appendix E, of the application. Values for species richness and total abundance are within the range of natural variability observed for the Southern California Bight regional surveys and suggest no outfall-related trends. Table E-9 in Volume VI, Appendix E, of the application.

Table 21. Applicant's summary for total number of species and total abundance of demersal fishes at trawl zone stations during the pre-discharge (1991-1993) and discharge (1994-2006) periods. Data are expressed as means with ranges in parentheses.

Indicator Parameter	Pre-discharge Period		Discharge Period	
	Nearfield	Farfield	Nearfield	Farfield
Species Richness	13 (8-19)	14 (9-22)	15 (7-20)	15 (9-26)
Total Abundance	208 (63-399)	214 (51-453)	440 (44-2,322)	310 (50-695)

As shown in Table 22, the applicant reports that, generally, the same fish species are present and abundant during the pre-discharge and discharge periods. These species represent 95% of the total abundance of fishes caught from 1991 through 2006. Overall, the demersal fish assemblage in the area of the outfall is dominated by Pacific sanddab which is common in soft-bottom habitats of the Southern California Bight mainland shelf.

Table 22. Applicant's summary for percent abundance of demersal fish species at all trawl zone stations during pre-discharge (1991-1993) and discharge (1994-2006) periods. Data are expressed as the percent of total abundance per trawl.

Common Name	Pre-discharge Period Percent Abundance	Discharge Period Percent Abundance
Pacific sanddab	55	49
Plainfin midshipman	10	3
Yellowchin sculpin	6	13
Stripetail rockfish	4	3
Dover sole	4	6
Longspine combfish	4	5
Longfin sanddab	3	3
Pink seaperch	3	1
Halfbanded rockfish	2	9
Shortspine combfish	2	1
California tonguefish	1	1

The City's analysis in the application shows that Pacific sanddab comprise a smaller proportion of the nearfield fish assemblage during the discharge period, than prior to the discharge, while the proportion of Pacific sanddab remains similar over time in the farfield. In contrast, yellowchin sculpin comprise a larger proportion of both the nearfield and farfield fish assemblages during the discharge period, than prior to the discharge. Table E-8 and Figure E-38 in Volume IV, Appendix E, of the application. The applicant suggests that these changes may be due, in part, to cyclic population fluctuations and region-wide increases in water temperature observed during El Nino years. Ordination and classification analysis of fish abundance data from 1991 through 2007 seem to confirm that the differences in local fish assemblages over time appear in large part related to region-wide changes in water temperature, even though some cluster groups are in proximity to the two dredge materials disposal sites (Figure 6.4 in City of San Diego, 2008).

The applicant reports that evidence of parasitism or physical abnormalities (fin rot, discoloration, skin lesions, tumors) in fish populations off Point Loma has remained low, since monitoring began in 1991. The copepod eye parasite occurs in Pacific sanddab at a low percentage. An ecoparasitic cymothioid isopod is observed loose in some trawls and is known to be especially common on sanddab in southern California waters.

EPA concludes there are no apparent spatial or temporal trends in the total number of fish species or abundances of fishes that suggest an outfall-related impact.

4. Impact of the Discharge on Recreational Activities

This section describes the impact of the modified discharge on recreational activities. Under 40 CFR 125.62(d), the applicant's modified discharge must allow for the attainment or maintenance of water quality which allows for recreational activities beyond the zone of initial dilution, including, without limitation, swimming, diving, boating, fishing, and picnicking, and sports activities along shorelines and beaches. The requirement to protect recreational activities applies beyond the zone of initial dilution, in both federal and State waters. Both the bioaccumulation of toxic pollutants in fish tissues (liver or muscle) and water contact recreational activities and compliance with bacteriological water quality standards and criteria are discussed. The applicant's monitoring data are reviewed to assess whether the discharge will protect recreational activities.

a. Bioaccumulation and Fish Consumption

Chapter II of the California Ocean Plan contains the following water quality objectives for the biological characteristics of ocean waters: "The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered." and "The concentrations 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."

Bioaccumulation is a process by which chemical contaminants undergo uptake and retention in organisms via various pathways of exposure. For example, fishes can accumulate contaminants through adsorption and absorption of dissolved chemicals in the water or through ingestion or assimilation of contaminants in food. Once a contaminant is incorporated into the tissues of an organism, it may resist metabolic excretion and accumulate. Higher trophic level organisms may then feed on contaminated prey and further concentrate the contaminant in their tissues. This process can lead to concentrations of contaminants in fish tissue that are of ecological and human health concern.

Under its existing NPDES permit, the City conducts the required semi-annual monitoring at six stations in four trawl zones during January and July and the required annual monitoring at two rig (hook and line) fishing stations during October. The stations are located at the depth of the outfall along the 98 meter contour. The bioaccumulation monitoring program has two components: (1) liver tissue is analyzed for trawl-caught fish and (2) muscle tissue is analyzed for hook and line-caught fish.

Fish collected in trawls are representative of the general demersal fish community and certain species are targeted for analysis based on their prevalence in the community.

Chemical analysis of liver tissue in these fishes indicates which contaminants may be bioaccumulating through this community. For bioaccumulation analyses, the six trawl fishing stations are grouped into four trawl zones. Trawl zone 1 (TZ1) represents the nearfield and is defined as the area within a 1 kilometer radius of stations SD12 and SD10; both stations are within 1.2 kilometers of the outfall. Trawl zone 2 (TZ2) represents the northern farfield and is defined as the area within a 1 kilometer radius of stations SD14 and SD13; both stations are approximately 8 kilometers north of the outfall. Trawl zone 3 (TZ3) represents the southern farfield and is defined as the area centered within a 1 kilometer radius of station SD8. Station SD8 is located within a couple of kilometers of EPA-designated dredge materials disposal site LA-5. Trawl zone 4 (TZ4) represents the southernmost farfield and is defined as the area centered within a 1 kilometer radius of station SD7. Station SD7 is located within one kilometer of non-active dredge materials disposal site LA-4. Both stations SD8 and SD7 are within approximately 9 kilometers of the outfall.

Fish species collected by rig fishing represent a typical sport fisher's catch and are considered of recreational and commercial importance. Fish muscle tissue is analyzed because it is the tissue most often consumed by humans and may have public health implications. There are two rig fishing locations. Station RF1 is located in the nearfield close to the northern end of the diffuser leg while station RF2 is located in the northern farfield.

The applicant reports all tissue sample values in terms of milligrams per kilogram wet weight (mg/kg ww), or microgram per kilogram wet weight (ug/kg ww).

Fish Liver

To evaluate bioaccumulation in the area of the outfall and identify trends, EPA examined toxics concentrations in the liver tissue of trawl-caught fish species that were sampled in October during the discharge period (1995-2006) (Figure A-33). Table B-7 shows the five flatfish species (bigmouth sole, Dover sole, English sole, hornyhead turbot, longfin sanddab, and Pacific sanddab) examined over this period by EPA. During this period, 18 single parameters were detected in at least 10 percent of the averaged replicate composite samples: aluminum (70 percent), antimony (10 percent), arsenic (82 percent), barium (100 percent), beryllium (15 percent), cadmium (86 percent), chromium (63 percent), copper (100 percent), hexachlorobenzene (55 percent), iron (100 percent), lead (17 percent), manganese (96 percent), mercury (88 percent), nickel (23 percent), selenium (100 percent), silver (36 percent), tin (37 percent), and zinc (100 percent). Total chlordane, total DDT, and total PCBs are also reviewed.

Arsenic. Figure A-34 summarizes the average concentration of arsenic in flatfish livers, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003. There is no spatial or temporal pattern in arsenic concentrations in liver that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the mean concentration of arsenic is 3.39 mg/kg ww at nearfield station TZ1, 6.18 mg/kg ww at northern farfield station TZ2, and 4.03 mg/kg ww and 3.85 mg/kg ww at southern farfield stations TZ3 and TZ4, respectively.

Mercury. Figure A-35 summarizes the average concentration of mercury in flatfish livers, during October, from 1995 through 2006. The applicant began using a slightly less sensitive method detection limit (0.012 ug/l changed to 0.03 ug/l) in 2003. There is no spatial or temporal pattern in mercury concentrations in liver that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the mean concentration of mercury is 0.083 mg/kg ww at nearfield station TZ1, 0.047 mg/kg ww at northern farfield station TZ2, and 0.068 mg/kg ww and 0.058 mg/kg ww at southern farfield stations TZ3 and TZ4, respectively.

Selenium. Figure A-36 summarizes the average concentration of selenium in flatfish liver, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003. There is no spatial or temporal pattern in selenium concentrations in liver that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the mean concentration of selenium is 1.36 mg/kg ww at nearfield station TZ1, 1.47 mg/kg ww at northern farfield station TZ2, and 1.09 mg/kg ww and 1.25 mg/kg ww at southern farfield stations TZ3 and TZ4, respectively.

Hexachlorobenzene. Figure A-37 summarizes the average concentration of hexachlorobenzene in flatfish livers, during October, from 1995 through 2006. There is no spatial or temporal pattern in hexachlorobenzene concentrations in liver that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the mean concentration of hexachlorobenzene is 3.25 ug/kg ww at nearfield station TZ1, 4.19 ug/kg ww at northern farfield station TZ2, and 5.09 ug/kg ww and 3.83 ug/kg ww at southern farfield stations TZ3 and TZ4, respectively.

Total Chlordane. Figure A-38 summarizes the average concentration of total chlordane in flatfish livers, during October, from 1995 through 2006. There is no spatial or temporal pattern in total chlordane concentrations in liver that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the mean concentration of total chlordane is 14.10 ug/kg ww at nearfield station TZ1, 15.42 ug/kg ww at northern farfield station TZ2, and 18.27 ug/kg ww and 13.29 ug/kg ww at southern farfield stations TZ3 and TZ4, respectively.

Total DDT. Figure A-39 summarizes the average concentration of total DDT in flatfish livers, during October, from 1995 through 2006. There is no spatial or temporal pattern in total DDT concentrations in liver that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the mean concentration of total DDT is 424 ug/kg ww at nearfield station TZ1, 516 ug/kg ww at northern farfield station TZ2, and 611 ug/kg ww and 558 ug/kg ww at southern farfield stations TZ3 and TZ4, respectively. During the period 1995 through 2006, total TTD concentrations in flatfish livers at all trawl zone stations appear to be decreasing over time.

Total PCBs. Figure A-40 summarizes the average concentration of total PCBs in flatfish livers, during October, from 1995 through 2006. There is no spatial or temporal pattern in total PCB concentrations in liver that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the mean concentration of total PCBs is 263.9 ug/kg ww at nearfield station TZ1, 340.0 ug/kg ww at northern farfield station TZ2, and 742.2 ug/kg ww and 335.2 ug/kg ww at southern farfield stations TZ3 and TZ4, respectively.

EPA notes that on average, total PCB concentrations in sanddab livers are an order of magnitude higher than in other flatfish species analyzed by the applicant (Table F-26 in Volume IV, Appendix E, of the application). During the period 1995 through 2006, total PCB concentrations in flatfish livers at southern farfield station TZ3 (near the active dredge materials disposal site, LA-5) are noticeably higher than at other trawl zone stations during most years, but appear to be decreasing over time.

Because there are no noticeable effects of the outfall for these chemicals, the contributions of the discharge are minimal.

Fish Muscle

To evaluate bioaccumulation in the area of the outfall and identify trends, EPA examined toxics concentrations in the muscle tissue of rig-caught fish species that were sampled in October during the discharge period (1995-2006) (Figure A-33). Table B-8 shows the twelve fish species (rockfish and scorpionfish) examined over this period by EPA. During this period, 18 single parameters were detected in at least one percent of the averaged replicate composite samples: aluminum (46 percent), antimony (86 percent), arsenic (70 percent), barium (92 percent), cadmium (9 percent), chromium (41 percent), copper (61 percent), hexachlorobenzene (47 percent), iron (87 percent), lead (4 percent), manganese (39 percent), mercury (94 percent), nickel (9 percent), selenium (99 percent), silver (1 percent), thallium (9 percent), tin (21 percent), and zinc (100 percent). Total chlordane, total DDT, and total PCBs are also reviewed. To address public health concerns, pollutant concentrations for these detections were compared to available U.S. EPA recommended screening values for recreational fishers and California Office of Health Hazard Assessment fish contaminant goals for sport fish.

U.S. EPA has developed recommended target analyte screening values for recreational fishers (USEPA, 2000). These screening values are defined as concentrations of analytes in fish or shellfish tissue that are of potential public health concern and are used as threshold values against which levels of contamination in similar tissues collected from the ambient environment can be compared (Table 23). Exceedance of these screening values should be taken as an indication that more intensive site-specific monitoring and/or evaluation of human health risk should be conducted.

Table 23. Selected U.S. EPA recommended target analyte screening values for recreational fishers. Based on fish consumption rate of 17.5 grams per day, 70 kilograms body weight (all adults), and, for carcinogens, 10^{-5} risk level, and 70-year lifetime.

Target Analyte	Screening Values (mg/kg)	
	Noncarcinogens	Carcinogens (RL=10^{-5})
Arsenic (inorganic)	1.2	0.026
Cadmium	4.0	---
Mercury (methylmercury)	0.3[1]	---
Selenium	20	---
Tributlytin	1.2	---
Total chlordane (sum of cis- and trans-chlordane, cis- and trans-nonachlor; and oxychlordane)	2.0	0.114
Total DDT (sum of 4,4'- and 2,4'- isomers of DDT, DDE, and DDD)	2.0	0.117
Hexachlorobenzene	3.2	0.0250
Total PCBs (sum of congeners or Aroclors)	0.08	0.02

[1] Based on EPA's tissue-based 304(a)(1) water quality criterion for human health (USEPA, 2001).

The California Office of Environmental Health Hazard Assessment (OEHHA) is the agency solely responsible for evaluating the potential public health risks of chemical contaminants in sport fish and issuing State advisories, when appropriate. EPA is unaware of any sport fish advisories in the area off Point Loma issued by OEHAA. OEHAA has developed both advisory tissue levels and fish contaminant goals for seven common contaminants in California sport fish (Klasing and Brodberg, 2008). Fish contaminant goals are estimates of contaminant levels in fish that pose no significant health risk to individuals consuming sport fish as a standard consumption rate of eight ounces per week (32 grams per day), prior to cooking, over a lifetime (Table 24). Unlike advisory tissue levels, these goals are based solely on public health considerations relating to exposure to each individual contaminant, without regard to economic considerations, technical feasibility, or the counterbalancing effects of fish consumption.

Table 24. Selected Fish Contaminant Goals for selected fish contaminants based on cancer and non-cancer risk using an 8 ounce per week (prior to cooking) consumption rate (32 grams per day).

Contaminant	Fish Contaminant Goal (ug/kg, wet weight)
Chlordane [$(mg/kg/day)^{-1}$]	5.6
DDTs [$(mg/kg/day)^{-1}$]	21
Methylmercury (mg/kg-day)	220
PCBs [$(mg/kg/day)^{-1}$]	3.6
Selenium (mg/kg-day)	7,400

Arsenic. Figure A-41 summarizes the average concentration of arsenic in rockfish and scorpionfish muscle, during October, from 1995 through 2006. There is no spatial or temporal pattern in arsenic concentrations in muscle that suggests an outfall-related effect. The applicant began using a more sensitive method detection limit in 2003. During the most recent discharge period (2001-2006), the annual average concentration of arsenic ranged from 0.55 to 2.65 mg/kg ww at nearfield station RF1 (total n=18) and 0.59 to 4.13 mg/kg ww at farfield station RF2 (total n=16). These concentrations are above the EPA screening values of 1.2 and 0.026 mg/kg. There is no OEHHA fish contaminant goal for arsenic.

Mearns et al. (1991) reported that in the Southern California Bight, arsenic occurs in the edible tissues of fish, squid, lobster, and crab and the liver of some fish in concentrations ranging from about 0.1 to over 50 mg/kg ww and tissue concentrations were the same or higher in remote areas compared to urban areas. The authors concluded that the source of arsenic to these organisms is probably “natural”, due to hydrothermal springs, and further research was necessary to assess heath risks to humans that consume seafood at such levels.

From 2002 through 2006, arsenic concentrations in the Point Loma WTP effluent generally range between 0.4 and 2.7 ug/l; these concentrations will meet EPA’s 304(a)(1) water quality criterion for human health, 0.14 ug/l, at the boundary of the zone of initial dilution.

Because there is no noticeable effect of the outfall, the contribution of the discharge is minimal.

Cadmium. Figure A-42 summarizes the average concentration of cadmium in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003; however, cadmium was not detected in fish muscle until 2006. During the most recent discharge period (2001-2006), the annual average concentration of cadmium ranged from 0.00 to 0.16 mg/kg ww at nearfield station RF1 (total n=18) and 0.00 to 0.15 mg/kg ww at farfield station RF2 (total n=16). These concentrations are below the EPA screening value of 4.0 mg/kg. There is no OEHHA fish contaminant goal for cadmium.

Chromium. Figure A-43 summarizes the average concentration of chromium in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003. There is no spatial or temporal pattern in chromium concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of chromium ranged from 0.00 to 0.44 mg/kg ww at nearfield station RF1 (total n=18) and 0.00 to 0.39 mg/kg ww at farfield station RF2 (total n=16). There is no EPA screening value or OEHHA fish contaminant goal for chromium.

Copper. Figure A-44 summarizes the average concentration of copper in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003. There is no spatial or temporal pattern in copper concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of copper ranged from 0.15 to 3.58 mg/kg ww at nearfield station RF1 (total n=18) and 0.19 to 2.94 mg/kg ww at farfield station RF2 (total n=16). There is no EPA screening value or OEHHA fish contaminant goal for copper.

Lead. Figure A-45 summarizes the average concentration of lead in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003; however, lead was only detected in fish muscle in 2005. During the most recent discharge period (2001-2006), the annual average concentration of lead ranged from 0.00 to 0.00 mg/kg ww at nearfield station RF1 (total n=18) and 0.00 to 0.36 mg/kg ww at farfield station RF2 (total n=16). There is no EPA screening value or OEHHA fish contaminant goal for lead.

Mercury. Because analysis of total mercury is less expensive than that for methylmercury, total mercury is analyzed and assumed to be 100 percent methylmercury for the purpose of risk assessment. Figure A-46 summarizes the average concentration of mercury in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a slightly less sensitive method detection limit (0.012 ug/l changed to 0.03 ug/l) in 2003.There is no spatial or temporal pattern in mercury concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of mercury ranged from 0.09 to 0.59 mg/kg ww at nearfield station RF1 (total n=18) and 0.09 to 0.37 mg/kg ww at farfield station RF2 (total n=16). In some years, average concentrations are above the EPA screening value of 0.3 mg/kg and the OEHHA fish contaminant goal of 0.220 mg/kg ww for methylmercury. Average concentrations are sometimes above OEHHA advisory tissue levels based on non-cancer risk using an 8 ounce serving size (prior to cooking) once or more per week (Klasing and Brodberg, 2008).

Mearns et al. (1991) has identified mercury as a contaminant of concern in the Southern California Bight, but concludes that since the highest levels of mercury are seen in fish from areas located far from known sources, it does not appear that mercury from coastal waste discharges is responsible for the concentrations observed in fish.

Because there is no noticeable effect of the outfall, the contribution of the discharge is minimal.

From 2002 through 2006, mercury concentrations in the Point Loma WTP effluent generally are reported as “not detected” (217 of 228 samples) where the method detection limit ranges from 0.27 ug/l in 2002, to 0.09 ug/l in 2006. These method detection limits are low enough to evaluate the applicant’s ability to achieve compliance, following initial dilution, with California Ocean Plan Table B water quality objectives for mercury. However, EPA concludes that these method detection limits are not as sensitive as required by 40 CFR 136 or as needed to further quantify actual mass emissions of mercury from the PLOO to the region. Consequently, the draft permit proposes that the applicant monitor the effluent using EPA method 1631 which has a required minimum quantitation level of 0.0005 ug/l.

Nickel. Figure A-47 summarizes the average concentration of nickel in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003; however, nickel was not detected in fish muscle until 2006. During the most recent discharge period (2001-2006), the annual average concentration of nickel ranged from 0.00 to 0.23 mg/kg ww at nearfield station RF1 (total n=18) and 0.00 to 0.15 mg/kg ww at farfield station RF2 (total n=16). There is no EPA screening value or OEHHA fish contaminant goal for nickel.

Selenium. Figure A-48 summarizes the average concentration of selenium in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003. There is no spatial or temporal pattern in selenium concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of selenium ranged from 0.37 to 0.48 mg/kg ww at nearfield station RF1 (total n=18) and 0.30 to 0.44 mg/kg ww at farfield station RF2 (total n=16). Annual average concentrations are below the EPA screening value of 20 mg/kg and the OEHHA fish contaminant goal of 7.4 mg/kg ww.

Silver. Figure A-49 summarizes the average concentration of silver in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003; however, silver was only detected in fish muscle in 2005. There is no spatial or temporal pattern in silver concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of silver ranged from 0.00 to 0.00 mg/kg ww at nearfield station RF1 (total n=18) and 0.00 to 0.17 mg/kg ww at farfield station RF2 (total n=16). There is no EPA screening value or OEHHA fish contaminant goal for silver.

Tin. Figure A-50 summarizes the average concentration of total tin in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003. There is no spatial or temporal pattern in tin concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of tin ranged from 0.00 to 1.71 mg/kg ww at nearfield station RF1 (total n=18) and 0.00 to 1.65 mg/kg ww at farfield station RF2 (total n=16). Mearns et al (1991) reports that from 3 to 52 percent of the total tin in fish is in the form of organic tin. Based on this ratio, it is likely that the annual average concentrations are below the EPA screening value of 1.2 mg/kg for the organic tin, tributlytin.

From 2002 through 2006, tributlytin concentrations in the Point Loma WTP effluent are reported as “not detected” (60 of 60 samples) where the method detection limit ranges from 0.005 ug/l in 2002, to 2 ug/l in 2006.

Zinc. Figure A-51 summarizes the average concentration of zinc in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003. There is no spatial or temporal pattern in zinc concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of zinc ranged from 3.04 to 5.24 mg/kg ww at nearfield station RF1 (total n=18) and 1.96 to 4.22 mg/kg ww at farfield station RF2 (total n=16). There is no EPA screening value or OEHHA fish contaminant goal for zinc.

Hexachlorobenzene. Figure A-52 summarizes the average concentration of hexachlorobenzene in rockfish and scorpionfish muscle, during October, from 1995 through 2006. The applicant began using a more sensitive method detection limit in 2003. There is no spatial or temporal pattern in hexachlorobenzene concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of hexachlorobenzene ranged from 0.10 to 0.58 ug/kg ww at nearfield station RF1 (total n=18) and 0.10 to 0.35 ug/kg ww at farfield station RF2 (total n=16). These concentrations are below the EPA screening values of 3,200 and 25.0 ug/kg. There is no OEHHA fish contaminant goal for hexachlorobenzene.

Total Chlordane. Figure A-53 summarizes the average concentration of total chlordane in rockfish and scorpionfish muscle, during October, from 1995 through 2006. There is no spatial or temporal pattern in total chlordane concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of total chlordane ranged from 0.00 to 1.13 ug/kg ww at nearfield station RF1 (total n=18) and 0.00 to 2.40 ug/kg ww at farfield station RF2 (total n=16). These concentrations are below the EPA screening values of 2,000 and 114 ug/kg ww and the OEHHA fish contaminant goal of 5.6 ug/kg ww.

Total DDT. Figure A-54 summarizes the average concentration of total DDT in rockfish and scorpionfish muscle, during October, from 1995 through 2006. There is no spatial or temporal pattern in total DDT concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of total DDT ranged from 5.00 to 78.8 ug/kg ww at nearfield station RF1 (total n=18) and 9.73 to 77.70 ug/kg ww at farfield station RF2 (total n=16). These concentrations are below the EPA screening values of 2,000 and 117 ug/kg ww, but often above the OEHHA fish contaminant goal of 21 ug/kg ww. These values are below all OEHHA advisory tissue levels based on non-cancer risk using an 8 ounce serving size (prior to cooking) once or more per week (Klasing and Brodberg, 2008).

From 2002 through 2006, total DDT concentrations in the Point Loma WTP effluent generally are reported as “not detected” (228 of 228 samples), although the metabolite homologue, p,p’-DDD, was reported as 0.020 ug/l in one sample. The method detection limits for the homologues of DDT and its metabolites range from 0.020 to 0.1 ug/l. EPA’s recommended minimum quantitation levels for the homologues of DDT and its metabolites are 0.1 ug/l using EPA method 608; Appendix II of the California Ocean Plan requires dischargers to achieve more stringent minimum levels.

Because there is no noticeable effect of the outfall, the contribution of the discharge is minimal.

Total PCBs. Figure A-55 summarizes the average concentration of total PCBs in rockfish and scorpionfish muscle, during October, from 1995 through 2006. There is no spatial or temporal pattern in total PCB concentrations in muscle that suggests an outfall-related effect. During the most recent discharge period (2001-2006), the annual average concentration of total PCBs ranged from 1.50 to 31.67 ug/kg ww at nearfield station RF1 (total n=18) and 3.00 to 37.25 ug/kg ww at farfield station RF2 (total n=16). These concentrations are generally below the EPA screening values of 80. and 20. ug/kg ww, but often above the OEHHA fish contaminant goal of 3.6 ug/kg ww. These values are usually below OEHHA advisory tissue levels based on non-cancer risk using an 8 ounce serving size (prior to cooking) once or more per week (Klasing and Brodberg, 2008).

From 2002 through 2006, total PCB concentrations in the Point Loma WTP effluent are reported as “not detected” (228 of 228 samples) where the method detection limit ranges from 2 to 4 ug/l, based on the measured Arochlor. EPA concludes that these method detection limits need to be lowered in order to achieve 40 CFR 136 levels and to further quantify actual mass emissions of PCBs from the PLOO to the region. However, neither the applicant’s nor EPA’s method detection limits are low enough to evaluate the applicant’s ability to achieve compliance, following initial dilution, with California Ocean Plan Table B water quality objectives for total PCBs.

Because there is no noticeable effect of the outfall, the contribution of the discharge is minimal.

Based on this review of fish liver and muscle tissues, EPA finds that the improved modified discharge will comply with California Ocean Plan water quality objectives for biological characteristics of ocean waters. EPA concludes that the improved modified discharge will allow for the attainment or maintenance of water quality which allows for recreational activities (fishing) beyond the zone of initial dilution.

b. Water Contact Recreation

Under 40 CFR 125.62(d), the applicant’s modified discharge must allow for the attainment or maintenance of water quality which allows for recreational activities beyond the zone of initial dilution. The requirement to protect recreational activities applies beyond the zone of initial dilution, in both federal and State waters. This section of the TDD discusses the EPA-approved water quality standards that apply in State waters and the recreational activities and 304(a)(1) water quality criteria that apply in federal waters beyond the zone of initial dilution. The applicant’s monitoring and laboratory data are reviewed to assess whether the improved modified discharge will protect recreational activities.

State Waters

Within State waters off Point Loma, most water contact recreational activities are centered around the Point Loma kelp beds and in nearshore waters. The shoreline along the southern portion of Point Loma is predominantly on a military reservation (Fort Rosecrans) and the extreme southern portion of the peninsula is within the Cabrillo National Monument. Shoreline access in these areas is limited to designated tidepool areas within the boundaries of the national monument.

The State Water Resources Control Board (State Water Board) has established bacteriological standards in ocean waters of the State used for water contact recreation. Ocean waters are the territorial marine waters of the State as defined by California law. The outer limit of territorial seas generally extends offshore to 3 nautical miles. “Water Contact Recreation” or “REC-1” is a beneficial use of the State and is defined to include uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible; these uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, and use of natural hot springs. “REC-1” is designated as an existing beneficial use of coastal waters named the Pacific Ocean, in the California Ocean Plan and Regional Water Quality Control Plan for the San Diego Region (San Diego RWQCB, 1994).

CWA sections 303(i) and 502(21), together require the adoption of water quality criteria for all coastal waters designated by States for use for swimming, bathing, surfing, or similar water contact activities, even if, as a factual matter, the waters designated for swimming are not frequently or typically used for swimming (69 Fed. Reg. 67219-20, 67222, November 16, 2004). Consistent with this requirement, on November 16, 2004, EPA promulgated recreational water quality criteria for coastal waters in cases where States had failed to do so; these criteria apply where States have designated coastal waters for water contact recreation, but do not have in place EPA-approved bacteria criteria that are as protective as EPA’s 1986 recommended 304(a)(1) criteria for bacteria (69 Fed. Reg. 67218, November 16, 2004). This promulgation applies the criteria at 40 CFR 131.41(c)(2) to waters designated marine coastal recreational waters in California, excluding the Los Angeles Regional Water Quality Control Board (69 Fed. Reg. 67243, November 16, 2004). In 2005, the State Water Board adopted revised bacteria criteria for ocean waters of the State. Effective February 14, 2006, the revised California Ocean Plan specifies that within the zone bounded by the shoreline and 1,000 feet from the shoreline or the 30-foot depth contour (whichever is further) and in areas outside this zone used for water contact sports as determined by the Regional Water Board (i.e., waters designated as REC-1), including kelp beds, the bacterial objectives in Table 25 shall be maintained throughout the water column. The State has excluded the initial dilution zone for wastewater outfalls.

Table 25. Bacterial water quality objectives in the California Ocean Plan for State waters designated REC-1.

Indicator	30-day Geometric Mean (per 100 ml)	Single Sample Maximum (per 100 ml)
Total coliform	1,000	10,000
Fecal coliform	200	400
Total coliform when fecal coliform:total coliform ratio > 0.1		1,000
Enterococcus	35	104

Federal Waters

EPA has developed 304(a)(1) ambient water quality criteria for bacteria which are recommended to protect people from gastrointestinal illness for primary contact recreation, or similar full body contact activities, in marine recreational waters (*Ambient Water Quality Criteria for Bacteria—1986*, EPA 440/5-84-002, 1986), but EPA has not directly promulgated water quality standards for marine recreational activities in federal waters located offshore beyond 3 nautical miles. For these waters, the water use is defined by the CWA section 101(a)(2) interim goal to provide water quality for recreation in and on the water, wherever attainable. EPA describes the "primary contact recreation" use as protective when the potential for ingestion of, or immersion in, water is likely. Activities usually include swimming, water-skiing, skin-diving, surfing, and other activities likely to result in immersion (*Water Quality Standards Handbook*, EPA-823-B-94-005a, 1994). Therefore, EPA has reviewed the actual uses of federal waters surrounding the Point Loma Ocean Outfall to determine where such activities occur. Where such uses occur, they are protected by EPA's water quality criteria for bacteria in Table 26.

Table 26. 304(a)(1) ambient water quality criteria for bacteria in federal waters where primary contact recreation occurs.

Indicator	30-day Geometric Mean (per 100 ml)	Single Sample Maximum (per 100 ml)
Enterococci	35	104 for designated bathing beach
		158 for moderate use
		276 for light use
		501 for infrequent use

Volume V, Appendix G, of the application describes water contact recreational activities occurring in ocean waters off Point Loma and at shoreline, kelp bed, and offshore water quality monitoring stations. In Appendix G, Table 19 shows where water contact recreation takes place off Point Loma, based on the City's recreational use assessment and record of visual observations during monitoring events. In the vicinity of the Point Loma discharge, the applicant has documented no federally-defined primary contact recreational activities occurring in waters beyond 3 nautical miles; therefore, EPA has determined that federal waters beyond the zone of initial dilution are not currently required to achieve the 304(a)(1) water quality criteria for bacteria. However, within 3 nautical miles of the shoreline, the applicant's improved modified discharge must achieve California Ocean Plan bacteriological standards for water contact recreation throughout the water column.

Data Assessment

Under its existing NPDES permit, the City conducts the required monitoring for bacteria indicators (enterococcus, fecal coliforms, and total coliforms) at 52 stations shown in Figure A-3. Quarterly monitoring is conducted at a grid of 33 offshore stations located along the 98, 80, and 60 meter contours (at depths of 1, 25, 60, 80 and 98 meters below the surface); and at 3 offshore stations located along the 18 meter contour (at depths of 1, 12 and 18 meters). Five times per month, monitoring is conducted at 5 kelp bed stations located along the 18 meter contour (at depths of 1, 12 and 18 meters) and at 3 kelp bed stations located along the 9 meter (30 foot) contour (at depths of 1, 3 and 9 meters). Weekly monitoring is conducted at 8 shoreline stations. EPA evaluated the applicant's monitoring results from June 2003 through July 2007 for shoreline and kelp bed stations, and from October 2003 through July 2007 for offshore stations.

The water depth at the outer edge of the kelp bed lying inshore from the Point Loma outfall is about 16 to 17 meters and the water depth at the outer edge of the San Diego bight (along an extension of the Point Loma coastline) is about 40 to 45 meters. Based on dilution modeling for the wastewater plume using time series data, the height-of-rise to the average level of minimum dilution varies from about 20 to 31 meters above the bottom, corresponding to water depths of 62 to 74 meters. The height-of-rise to the average top of the wastefield varies from about 30 to 40 meters above the bottom, corresponding to water depths of about 54 to 64 meters. The maximum height-of-rise to the top of the wastefield during a month varies from about 50 to 64 meters above the bottom, corresponding to depths of about 30 to 44 meters. Figure O-16 in Volume VIII, Appendix O, of the application.

As shown in Table B-9, single sample maximum bacterial objectives at shoreline stations exhibit low exceedance rates (less than 4 percent). As shown in Tables B-10, geometric mean bacterial objectives at shoreline stations exhibit low exceedance rates (less than 2 percent). The applicant attributes these exceedances to surface runoff rather than the outfall plume. EPA agrees with this conclusion because of the lack of elevated concentrations at stations in the kelp bed and because modeling and monitoring results indicate that the outfall plume remains submerged in the offshore zone.

As shown in Tables B-11 through B-14, single sample maximum bacterial objectives at kelp bed stations exhibit very low exceedance rates at all depths (less than 1 percent). As shown in Tables B-15 through B-17, geometric mean bacterial objectives at kelp bed stations exhibit low exceedance rates at all depths (less than 1 percent). Exceedances are more likely observed at or within 3 meters of the surface rather than at the bottom, or at outer kelp bed station mid-depths. The applicant attributes most of these exceedances to storm events, rather than the outfall plume. EPA agrees with this conclusion because modeling and monitoring results indicate that the outfall plume remains submerged in the offshore zone, generally at water depths greater than 20 meters.

The 4.5 mile long PLOO discharges beyond the 3 nautical mile outer limit of the territorial seas. In Volume IV, Appendix C, of the application, Table C-5 summarizes bacteriological data from offshore stations within State waters that are not located in the Point Loma kelp bed. As summarized by the applicant, these offshore stations (at all water depths) achieved compliance with recreational water contact standards from 92 to 98 percent of the time, with exceedances typically limited to samples collected from water depths below 40 meters.

EPA also evaluated the raw data for bacteria indicators submitted with the application. As shown in Tables B-18 through B-21, single sample maximum bacterial objectives at offshore stations within State waters exhibit a low summary exceedance rate (less than 6 percent). At the subset of offshore stations in State waters located along the 80 and 60 meter contours, exceedances are limited to water depths below 25 meters, except at stations F18 and F09 where exceedance rates from the surface to water depths of 25 meters are less than 7 percent. As shown in Tables B-22 through B-24, geometric mean bacterial objectives at offshore stations within State waters exhibit a summary exceedance rate of less than 10 percent. At the subset of offshore stations in State waters located along the 80 and 60 meter contours, exceedances are limited to water depths below 25 meters, except at stations F18, F12, F10, F09, and F06 where exceedance rates from the surface to water depths of 25 meters are generally less than 8 percent.

Both the applicant and EPA compared maximum receiving water bacteriological concentrations from these offshore stations (at depth) with California Ocean Plan water quality objectives to determine the degree of reduction in indicator organisms discharged through the PLOO that is needed to achieve 100 percent compliance with California Ocean Plan water contact standards at all offshore station locations and depths within 3 nautical miles (Tables B-25 through B-27). Based on an evaluation of this data (Table C-6 in Volume IV, Appendix C, of the application), the City concluded that a 2.1-logarithm (approximately 99 percent) reduction of total coliform indicator organisms would ensure that the Point Loma discharge complies with bacteriological water quality standards at all locations and depths within State waters. Based on review and analysis of all offshore station data provided by the applicant, EPA believes the applicant’s conclusion is conservative and, therefore provides reasonable assurance of compliance with these standards.

Initial bench-scale laboratory tests, conducted by the applicant, show that a 2.1-log reduction of indicator organisms in the Point Loma effluent can be achieved by a sodium hypochlorite dose rate of 7 mg/1. Other studies show that this dose rate will be consumed in the PLOO and will not lead to non-compliance with Table B water quality objectives in the California Ocean Plan (e.g., total chlorine residual, chloroform, chloromethane, dichloromethane, chlorodibromomethane, dichlorobromomethane, chlorinated phenolic compounds, toxicity, etc.). Facilities currently exist at the Point Loma WTP site for storing and handling sodium hypochlorite. Volume IV, Appendix D, of the application.

The 2007 application is based on an improved discharge, as defined at 40 CFR 125.58(i), and incorporates effluent disinfection to achieve these California Ocean Plan standards in State waters prior to permit reissuance. On November 13, 2007, the City submitted a request to the Regional Water Board to initiate operation of prototype effluent disinfection facilities to achieve compliance with bacteriological water quality standards in State waters. On August 13, 2008, the Regional Water Board approved modifications associated with operation of the City's proposed prototype effluent disinfection facilities at Point Loma WTP. The City began adding sodium hypochlorite to the effluent discharge on September 3, 2008.

Based on this review, EPA finds that the improved modified discharge will meet bacterial water quality standards in State waters. EPA also finds that federal waters are not required to achieve the 304(a)(1) water quality criteria for bacteria because federally-defined primary contact recreational activities are not occurring in waters beyond 3 nautical miles. The reissued permit will require the City to record and report any primary contact recreational activities observed in federal waters, during offshore water quality monitoring surveys. The Regional Water Board and EPA conduct routine reviews of the City's discharge monitoring reports to assess compliance with the existing permit and water quality standards. EPA concludes that the improved modified discharge will allow for the attainment or maintenance of water quality which allows for recreational activities beyond the zone of initial dilution, including, without limitation, swimming, diving, picnicking, and sports activities along shorelines and beaches.

5. Additional Requirements for Improved Discharge

Under 40 CFR 125.62(e), an application for a 301(h)-modified permit on the basis of an improved discharge must include a demonstration that such improvements have been thoroughly planned and studied and can be completed or implemented expeditiously; detailed analyses projecting changes in average flow rates and composition of the discharge which are expected to result from proposed improvements; an assessment of the current discharge required by 40 CFR 125.62(a) through (d); and a detailed analysis of how the planned improvements will comply with 40 CFR 125.62(a) through (d).

Under Part A.11 of EPA Form 3510-A2, Description of Treatment, the applicant states that effluent disinfection is being implemented and will be operational prior to renewal of the NPDES permit. The applicant also states that dechlorination is not necessary, as chlorine residual is consumed during outfall transport. Under Part B.5 of EPA Form 3510-A2, the applicant explains that chlorination is being implemented to ensure compliance with California Ocean Plan recreational body-contact standards throughout the water column in State-regulated waters.

Volume IV (Appendices A, C, and D) and Volume VIII (Appendix U) of the application describe the City's proposal for an improved discharge. The City is proposing to implement effluent disinfection at the Point Loma WTP to achieve a 2.1 log reduction of indicator organisms in the effluent and has developed a prototype disinfection plan, as documented in Appendix D. A 7 mg/l dose rate of 12 percent sodium hypochlorite solution will be applied in the effluent channel and the outfall transport time will provide the contact time needed to achieve a 2.1 log reduction and zero chlorine residual as the effluent enters the outfall diffuser. There is a travel time of about five minutes between the feed point and the effluent sample point, to evaluate effluent compliance with NPDES permit requirements. Initial studies conducted by the applicant show that levels of chlorination byproducts and whole effluent toxicity will meet California Ocean Plan requirements. Figure A-14 in Volume IV, Appendix A, of the application presents the layout of the prototype effluent disinfection facility which has already been designed and installed. On August 13, 2008, the City received Regional Water Board approval to initiate operation of the prototype facility. The applicant states that during operation of the prototype facility, dosage rates will be confirmed and special effluent and ocean samples will be analyzed to demonstrate compliance. The results of full scale testing of the prototype facility will be used by the applicant to implement more permanent facilities. If prototype testing is adequate, the applicant states that an operational system (although not perhaps the permanent design) will be in place to provide continuous effluent disinfection during the term of the renewed permit. The City may propose to the Regional Water Board and EPA modification of the prototype facility or operations in accordance with the results of future studies.

Based on preliminary information provided in the updated application, EPA concludes that the applicable requirements under 40 CFR 125.62(e) have been met.

D. Establishment of a Monitoring Program

Under 40 CFR 125.63 which implements CWA section 301(h)(3), the applicant must have a monitoring program that is designed to provide data to evaluate the impact of the modified discharge on the marine biota; demonstrate compliance with applicable water quality standards or criteria, as applicable; measure toxic substances in the discharge; and have the capability to implement these programs upon issuance of the 301(h)-modified permit. The frequency and extent of the monitoring program are to be determined by taking into consideration the applicant's rate of discharge, quantities of toxic pollutants discharged, and potentially significant impacts on receiving water, marine biota, and designated water uses.

The applicant has a well-established monitoring program. The existing monitoring program was developed jointly by the Regional Water Board, EPA, and the applicant. The program is described in Volume V, Appendix I, of the application. The City has consistently implemented the agreed upon program.

The applicant has proposed no changes to its existing monitoring program. EPA and the Regional Water Board will review the applicant's existing monitoring program and revise it, as appropriate. These revisions will be included in the 301(h)-modified permit, as conditions for monitoring the impact of the discharge. EPA finds that the applicant has proposed a monitoring program which meets CWA section 301(h) requirements and has the resources to implement the program.

E. Impact of Modified Discharge on Other Point and Non-Point Sources

Under 40 CFR 125.64 which implements CWA section 301(h)(4), the applicant's proposed modified discharge must not result in the imposition of additional treatment requirements on any other point or non-point sources. For previous applications, the Regional Water Board has determined that the Point Loma discharge will not have an effect on any other point or non-point source discharges. There are a number of point and non-point source discharges within the San Diego Region; however, the PLOO is the only deep water discharge in the San Diego Region. All other San Diego Region discharges are to depths of 36 meters or less. The nearest discharge to the PLOO is the South Bay Ocean Outfall located approximately 18 kilometers southwest of the PLOO at a depth of 28 meters. For the 2007 application, the City has submitted a letter to Regional Water Board requesting the required determination. The granting of the 301(h) variance by EPA's Regional Administrator is contingent upon a determination by the Regional Water Board that the proposed discharge will not result in any additional treatment requirements on any other point or nonpoint sources.

F. Toxics Control Program

In accordance with 40 CFR 125.66, the applicant must design a toxics control program to identify and ensure control of toxic pollutants and pesticides discharged in the effluent. The applicant's Industrial Wastewater Control Program (for industrial toxics control) and the Household Hazardous Waste Program (for nonindustrial toxics control) are described, below.

1. Chemical Analysis

Under 40 CFR 125.66(a)(1), the applicant is required to submit chemical analyses of its current discharge for all toxic pollutants and pesticides defined in 40 CFR 125.58(aa) and (p). The analyses must be performed on two 24-hour composite samples (one dry weather and one wet weather). The City conducts influent and effluent monitoring following sampling schedules specified in the existing permit. Effluent samples are collected and analyzed on a weekly basis for metals, cyanide, ammonia, chlorinated pesticides, phenolic compounds, and PCBs. Analyses for organophosphate pesticides, dioxin, purgeable (volatile) compounds, acrolein and acrylonitrile, base/neutral compounds, and butyl tins are performed on a monthly basis. Influent and effluent monitoring data have been previously reported in monthly, quarterly, and annual reports to the Regional Water Board and EPA. The City submitted Point Loma WTP effluent data from 2002 through 2006 in electronic format, as part of the application. Based on influent and effluent data from 2006, the applicant indicates that there are no significant differences or evident trends in effluent quality between wet weather and dry weather conditions. These data are summarized by the City in Volume III, Large Applicant Questionnaire section III.H.1, of the application. Table 27 lists the commonly detected toxic inorganic and organic constituents in the Point Loma WTP effluent during 2006.

Table 27. Commonly detected toxic inorganic and organic constituents in the Point Loma WTP effluent during 2006.

Inorganic Toxic Constituent	Organic Toxic Constituent
Antimony	1,4-dichlorobenzene
Arsenic	2-butanone
Barium	Acetone
Beryllium	BHC gamma (lindane)
Cadmium	Bis (2-ethylhexyl) phthalate
Chromium	Bromodichloromethane (Dichlorobromomethane)
Cobalt	Chloroform (trichloromethane)
Copper	Dibromochloromethane (chlorodibromomethane)
Lead	Diethyl phthalate
Lithium	Methyl tertiary butyl ether (MTBE)
Mercury	Methylene chloride
Molybdenum	Phenol
Nickel	Tetrachloroethylene (tetrachloroethene)
Selenium	Toluene
Silver	
Thallium	
Vanadium	
Zinc	
Cyanide	

Based on this information, EPA concludes that the applicant has met the requirement at 40 CFR 125.66(a)(2).

2. Toxic Pollutant Source Identification

Under 40 CFR 125.66(b), the applicant must submit an analysis of the known or suspected sources of toxic pollutants and pesticides identified in 40 CFR 125.66(a) and, to the extent practicable, categorize the sources according to industrial and nonindustrial types. As part of the City's industrial source control program, industries that may potentially discharge toxic organic or inorganic constituents into the Metro System are surveyed, discharge permits are issued, and industrial discharges are monitored. The applicant also performs an annual system-wide nonindustrial toxics survey program to further identify sources of toxic constituents within the Metro System. A summary of identified or suspected sources, sorted by categorical industries or noncategorical industrial/commercial facilities, for effluent pollutants of concern are listed in Tables III.H-8 (inorganic toxics) and III.H-9 (organic toxics), Volume III of the application.

Based on this information, EPA concludes that the applicant has met the requirement at 40 CFR 125.66(b).

3. Industrial Pretreatment Requirements

Under 40 CFR 125.66(c), an applicant that has known or suspected industrial sources of toxic pollutants must have an approved pretreatment program, in accordance with 40 CFR 403. EPA approved the City's industrial pretreatment program, called the Industrial Wastewater Control Program, on June 29, 1982. The City's pretreatment program is summarized in Volume VII, Appendix K, of the application. Of the approximately 170 to 180 mgd of wastewater treated, the estimated contribution from Metro System industrial users is 2.5 percent. The program's active permit inventory includes: 50 categorical industrial users subject to federal categorical pretreatment standards and 20 additional significant industrial users subject to federal reporting requirements and local limits (i.e., 70 significant industrial users); 37 facilities with federally regulated processes where zero discharge is confirmed annually; and 1,550 non-categorical industrial users subject to applicable best management practices. The effectiveness of the Industrial Wastewater Control Program in reducing influent pollutant loadings is summarized in Appendix K. Local limits are reviewed annually and Attachment K3 contains the applicant's 2006 local limits update for Point Loma WTP. This review notes that the City's current local limits methodology facilitates a proactive planning approach to controlling pollutants which may become a problem in the future for the Point Loma WTP headworks and permit.

Based on this information, EPA concludes that the applicant has met the requirement at 40 CFR 125.66(c).

4. Nonindustrial Source Control Program

Under 40 CFR 125.66(d), implementing CWA section 301(h)(7), the applicant must submit a proposed public education program and implementation schedule designed to minimize the entrance of nonindustrial toxic pollutants and pesticides into its POTW; and develop and implement additional nonindustrial source control programs, at the earliest possible schedule. These programs and schedules are subject to revision by the Regional Administrator during permit review and reissuance and throughout the term of the permit.

The applicant proposes to continue implementing and improving its nonindustrial source control program that has been in effect since 1982. The aim of this program is to reduce the introduction of nonindustrial toxic pollutants into the sewer system. Key elements of this program include: a Household Hazardous Waste Program; a public education program; development and implementation of Discharger permits and/or Best Management Practice Discharge Authorization requirements for select commercial sectors; and ongoing surveys to identify contaminant sources. Detailed descriptions of these program elements are presented in Volume VII, Appendices K and L, of the application.

Based on this information, EPA concludes that the applicant has met the requirement at 40 CFR 125.66(d).

G. Urban Area Pretreatment Program

Under 40 CFR 125.65, implementing CWA section 301(h)(6), applicants serving a population of 50,000 or more and having one or more toxic pollutants introduced into the POTW by one or more industrial dischargers must comply with urban area pretreatment program requirements. A POTW subject to these requirements must demonstrate it either has in effect a program that achieves secondary equivalency, as described at 40 CFR 125.65(d), or that industrial sources introducing waste into the treatment works are in compliance with all applicable pretreatment requirements, including numerical standards set by local limits, and that it will enforce these requirements. The applicant is subject to this regulation.

In the 1995 application, the City indicated it would comply with urban area pretreatment program requirements by demonstrating that it has applicable pretreatment requirements in effect. The City submitted its Urban Area Pretreatment Program to EPA in 1996; the program was approved by the Regional Water Board on August 13, 1997 and by EPA on December 1, 1998.

As explained the preamble to the revised CWA section 301(h) regulations (59 Fed. Reg. 40642, August 9, 1994):

> “EPA intends to determine a POTW’s continuing eligibility for a 301(h) waiver under section 301(h)(6) by measuring industrial user compliance and POTW enforcement activities against existing criteria in the Agency’s National Pretreatment Program. … In 1989, EPA established criteria for determining POTW compliance with pretreatment implementation obligations. One element of these criteria is the level of significant noncompliance of the POTW’s industrial users. The General Pretreatment Regulations (part 403) identify the circumstances when industrial user noncompliance is significant. The industrial user significant noncompliance (SNC) criteria are set out in 40 CFR 403.8(f)(2)(vii) and address both effluent and reporting violations. …
>
> For pretreatment purposes, a POTW’s enforcement program is considered adequate if no more than 15 percent of its industrial users meet the SNC criteria in a single year. … In addition, a POTW is also considered in SNC if it fails to take formal appropriate and timely enforcement action against any industrial user, the wastewater from which passes through the POTW or interferes with the POTW operations.
>
> In enforcing the pretreatment programs, POTWs are expected to respond to respond to industrial user noncompliance using local enforcement

> authorities in accordance with an approved enforcement response plan (ERP) which is required of all approved pretreatment programs (see 40 CFR 403.5). POTWs including 301(h) POTWs, with greater than 15 percent of their users in SNC, or which fail to enforce appropriately against any single industrial user causing pass through or interference, are deemed to be failing to enforce their pretreatment program. …
>
> … EPA believes that the combination of industrial user compliance and POTW enforcement provides an appropriate measure of the POTW's eligibility for the 301(h) waiver under section 301(h)(6)."

The "1989 criteria" discussed in the preamble are found in a September 27, 1989 memorandum, from James R. Elder to EPA Regional Water Division Directors, entitled "FY 1990 Guidance for Reporting and Evaluating POTW Noncompliance with Pretreatment Implementation Requirements" (Elder, 27 September 1989 memorandum).

Although the 1994 preamble for the urban area pretreatment program refers to "industrial users" when discussing the 15 percent noncompliance criteria, the "1989 criteria" only apply to "significant industrial users". This term is defined at 40 CFR 403.3(t) and includes all industrial users subject to categorical standards and other industrial users designated by the POTW. Also, the Agency has issued clarifying guidance explaining that the significant noncompliance criteria at 40 CFR 403(f)(2)(vii) apply to only significant industrial users, rather than all industrial users. Consequently, in the context of the urban area pretreatment program, EPA views the 15 percent noncompliance criteria to include only significant industrial users in significant noncompliance which have not received at least one formal enforcement action from the POTW. EPA believes that the combination of industrial user compliance and POTW enforcement provides an appropriate measure of a POTW's eligibility for a variance under CWA section 301(h)(6).

The City's Enforcement Response Plan is described in Volume VII, Appendix K, of the application. The second level of formal enforcement is an Administrative Notice and Order which may be issued when an industrial user: fails to take any significant action to establish compliance within 30 days of receiving a Notice of Violation; fails to establish full compliance, beginning on the 91st day after receiving a Notice of Violation; is in significant noncompliance status; or violates a Compliance Findings of Violation and Order.

EPA recognizes that a specific enforcement response to a violation must be decided on a case-by-case basis; however, for most cases, EPA believes that an administrative notice and order, as described in the City's Enforcement Response Plan, are appropriate when significant industrial users are in significant noncompliance.

The local limits approved by EPA as part of the City's urban area pretreatment program were included in all industrial discharge permits by December 1997. As a consequence of any new local limits, some significant industrial users may need time to come into compliance. In such cases, EPA expects the City to issue a Compliance Findings of Violation and Order which is the first level of formal enforcement in the City's Enforcement Response Plan. The order shall contain a schedule for achieving compliance with the new local limits. Significant industrial users receiving such orders will not be included in the 15 percent noncompliance criteria.

On April 29 through May 1, 2008, a team comprised of personnel from the Regional Water Board, EPA, and PG Environmental, LLC performed a detailed review of the applicant's compliance rates with respect to significant industrial users and how the applicant had applied the definition of significant noncompliance to significant industrial users failing to achieve compliance with all applicable regulations. The summary statistics in Table 28 indicate the applicant is meeting the 15 percent noncompliance criteria.

Table 28. Summary of significant industrial users (SIUs) in significant noncompliance (SNC) percentage status.

Parameter	2003	2004	2005	2006	2007
Number of SUIs	90	84	81	79	92
Number of Permitted Outfalls	117	115	110	113	122
Number of Outfalls in Consistent Compliance	75	74	76	79	92
Number of Outfalls in Inconsistent Compliance	30	30	26	27	16
Number of Outfalls in SNC	12	11	8	7	14
Percentage (%) of Total Number of SIUs in SNC	10.3% (12/117)	9.6% (11/115)	7.3% (8/110)	6.2% (7/113)	11.5% (14/122)
Adjusted Percentage (%) of Number of SIUs in SNC (based on Administrative Actions taken by City)	9.4% (11/117)	8.7% (10/115)	7.3% (8/110)	4.4% (5/113)	10.7% (13/122)

Federal pretreatment regulations at 40 CFR 403.8(f)(5) require the City to develop and implement an enforcement response plan. This plan must contain procedures indicating how the City will investigate and respond to instances of industrial user noncompliance. The City has an enforcement response plan and is applying that plan as required by federal regulations. The results of EPA's pretreatment inspection indicate that the City is taking enforcement actions as necessary and the rate of significant noncompliance among significant industrial users is less than the 15 percent criterion.

EPA finds that the applicant's urban area pretreatment program is acceptable, in the context of applicable 301(h) requirements. The 301(h)-modified permit will require an annual rate of significant noncompliance for significant industrial users that is no more than 15 percent of the total number of the applicant's significant industrial users. In addition, the applicant reported no instances of interference or pass-through. Consequently, enforcement against industrial users regarding those problems was not necessary.

Based on this information, EPA concludes that the applicant has met the requirement at 40 CFR 125.65.

H. Increase in Effluent Volume or Amount of Pollutants Discharged

Under 40 CFR 125.67, which implements CWA section 301(h)(8), no modified discharge may result in any new or substantially increased discharges of the pollutant to which the modification applies above the discharge specified in the 301(h)-modified permit. In addition, the applicant must provide projections of effluent volume and mass loadings for any pollutants to which the modification applies, in five year increments, for the design life of the facility.
CWA section 301(j)(5) requires the City to remove not less than 58 percent of the biochemical oxygen demand (on an annual average) and not less than 80 percent of total suspended solids (on a monthly average). The City must also implement a wastewater reclamation program that, at minimum, will result in a reduction in the quantity of suspended solids discharged into the marine environment during the period of the modification. The projected end-of-permit (2014) annual average effluent flow is 202 mgd. The draft NPDES permit proposes the following effluent limits for total suspended solids and biochemical oxygen demand (Table 29).

Table 29. Effluent limits based on CWA sections 301(h) and (j)(5).

Effluent Constituent	Units	Annual Average	Monthly Average
TSS	% removal[1]	---	$\geq$80
	mg/l	---	75[4]
	Metric tons/year	15,000[2]	---
		13,598[3]	---
BOD5	% removal[1]	$\geq$58	---

[1] To be calculated on a system-wide basis, as provided in Addendum No. 1 to Order No. R9-2002-0025.
[2] To be achieved on permit effective date through December 31, 2013. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP. [Approximates the average dry-weather flowrate capacity of the ocean outfall of 219 mgd and the Regional Water Board's TSS effluent limit for POTWs, based on BPJ, of 50 mg/l (as daily and instantaneous maximum), in 1990.]
[3] To be achieved on January 1, 2014. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP. [Approximates the projected effluent flowrate for 1997 of 185 mgd and the TSS effluent concentration of 53 mg/l.]
[4] Based on average monthly performance data (1990 through 1994) for the Point Loma WTP provided by the Discharger for the 1995 301(h) application.

According to the applicant, the design life of Metro System treatment facilities varies among the treatment components. Onsite mechanical equipment may have a design life of 20 years, while concrete structures may last for 50 years or more. In responding to 40 CFR 125.67, the applicant uses a design life of 20 years to project flow and mass loads. Table II.A-21 in Volume III of the application provides projections for Metro System flow and mass loads for total suspended solids and biochemical oxygen demand, in one year increments, through 2027. This table also provides flow and total suspended solids load projections for the PLOO discharge. Table 30 summarizes these projections for the term of the proposed permit (2009/10 through 2013/14).

Table 30. Point Loma Ocean Outfall flows (mgd) and total suspended solids loadings (MT/yr) projections for long-term facilities planning during the term of the proposed permit and proposed total suspended solids mass emission effluent limits.

Year	Projected Annual Average Discharge	Projected TSS Mass Emissions	Proposed TSS Mass Emission Effluent Limits
2009	193	11,500	15,000
2010	194	11,800	15,000
2011	195	11,700	15,000
2012	197	11,800	15,000
2013	199	11,900	15,000
2014	202	12,100	13,598

The applicant's projections in Table 30 and proposed effluent limits in Table 29 satisfy the applicable requirements. Based on Table 30, EPA believes that a total suspended solids mass emission rate of 12,100 metric tons per year would be achievable during all five years of the proposed 301(h) modification. During this period, EPA recognizes that reductions in mass emissions resulting from increased water reclamation are likely to be seasonal and anticipates the potential for corresponding higher mass emission rates during wet weather months. In the future, the City needs to pursue additional water reclamation and reuse projects, including those which demand a year-round supply of reclaimed water so as to maintain long-term compliance with this decision criterion.

I. Compliance with Other Applicable Laws

Under 40 CFR 125.59(b)(3), a 301(h)-modified permit shall not be issued where such issuance would conflict with applicable provisions of State, local, or other federal laws or Executive Orders.

1. Coastal Zone Management

A 301(h)-modified permit shall not be issued where such issuance would conflict with the federal Coastal Zone Management Act, as amended. In accordance with this law, an applicant must receive State certification that the modified discharge complies with applicable portions of the approved State coastal zone management program, or the State waives such certification.

Upon adoption of the 301(h)-modified NPDES permit by the Regional Water Board, the applicant will transmit correspondence requesting a determination from the California Coastal Commission, San Diego Coast Region, that the existing and proposed Point Loma WTP discharge are consistent with applicable coastal zone management requirements. Volume VIII, Appendix U, of the application. The issuance of a 301(h)-modified permit for the Point Loma WTP discharge is contingent upon the California Coastal Commission certification.

2. Marine Sanctuaries

A 301(h)-modified permit shall not be issued where such issuance would conflict with the federal Marine Protection, Research and Sanctuaries Act, as amended. In accordance with this law, a 301(h)-modified permit may not be issued for a discharge located in a marine sanctuary designated pursuant to Title III, if the regulations applicable to the sanctuary prohibit issuance of such a permit.

The PLOO is not located in a marine sanctuary, although more than a dozen protected marine areas exist within San Diego County. Two of these areas (San Diego-La Jolla Ecological Reserve and San Diego Marine Life Refuge), located approximately 21 to 22 kilometers north of the discharge point, have been designated by the State Water Board as “Areas of Special Biological Significance”. The discharge of wastewater to these zones is prohibited by the California Ocean Plan. A detailed description of protected areas in the vicinity of the PLOO is found in Volume V, Appendix G, of the application. EPA believes that given the distance to protected areas, pollutants discharged from the

PLOO will be diluted to background levels by the time the wastefield approaches any of these protected areas.

3. Endangered or Threatened Species

A 301(h)-modified permit shall not be issued where such issuance would conflict with the federal Endangered Species Act, as amended. This law is administered by the U.S. Fish and Wildlife Service and the NOAA National Marine Fisheries Service (collectively, the Services).

According to the applicant, 24 listed and candidate species may occur in the vicinity of Point Loma. Operation of the PLOO could affect these species by altering physical, chemical, or biological conditions, including: habitat suitability, water quality, biological integrity, food web dynamics, or the health of organisms. However, long-term monitoring conducted by the City shows no evidence of significant effects from operation of the PLOO on environmental conditions or biological communities. The applicant has reported to the Services that maintaining the existing discharge through the PLOO should not have an adverse impact on listed species or threaten their critical habitat.

By letters dated October 29, 2007, the applicant has requested determinations by the Services that the modified discharge is consistent with the federal Endangered Species Act. The issuance of a 301(h)-modified permit for the Point Loma WTP discharge is contingent upon determinations by the Services.

4. Fishery Conservation and Management

A 301(h)-modified permit shall not be issued where such issuance would conflict with the federal Magnuson-Stevens Fishery Conservation and Management Act, as amended (the MSA).

According to the applicant, the marine environment in the vicinity of Point Loma supports a wide variety of commercial fisheries that are protected and managed through the "Essential Fish Habitat" provisions of the MSA. The fisheries management plans (FMPs) for species that could occur in the Point Loma area are the Pacific Groundfish FMP (83 species), the Coastal Pelagic Species FMP (6 species), and the U.S. West Coast Fisheries for Highly Migratory Species (13 species). According to the applicant, the PLOO could have two types of effects on fisheries: physical impacts associated with the presence of the pipeline and diffusers on the ocean bottom, and biological impacts associated with the discharge of treated wastewater. Based on long-term monitoring results, the applicant has reported to the National Marine Fisheries Service that maintaining the existing discharge through the PLOO should not have an adverse effect on Essential Fish Habitat or Managed Species.

By letter dated October 29, 2007, the applicant has requested a determination by the National Marine Fisheries Service that the modified discharge is consistent with the

Magnuson-Stevens Fishery Conservation and Management Act. The issuance of a 301(h)-modified permit for the Point Loma WTP discharge is contingent upon the NMFS' determination.

J. State Determination and Concurrence

In accordance with 40 CFR 125.59(i)(2), no 301(h)-modified permit shall be issued until the appropriate State certification/concurrence is granted or waived, or if the State denies certification/concurrence, pursuant to 40 CFR 124.54.

The PLOO discharges beyond the 3 nautical mile State waters limit, into federal waters. Therefore, EPA has primary regulatory responsibility for the discharge. However, in May 1984, a Memorandum of Understanding was signed between EPA and the State of California to jointly administer discharges that are granted 301(h) modifications from federal secondary treatment standards. Under California's Porter-Cologne Water Quality Control Act, the Regional Water Boards issue waste discharge requirements which serve as NPDES permits. The joint issuance of a 301(h)-modified NPDES permit for the Point Loma WTP discharge which incorporates both the federal 301(h) variance and State waste discharge requirements will serve as the State's concurrence, pursuant to 40 CFR 124.54.

(Page intentionally blank)

REFERENCES

City of San Diego. 2007. Application for Renewal of NPDES CA0107409 and 301(h) Modified Secondary Treatment Requirements, Point Loma Ocean Outfall. Volumes I-VIII. Metropolitan Wastewater Department, Environmental Monitoring and Technical Services Division, San Diego, CA. Submitted to: U.S. Environmental Protection Agency. December, 2007. http://www.sandiego.gov/mwwd/environment/reports.shtml.

City of San Diego. 2008. Annual Receiving Waters Monitoring Report for the Point Loma Ocean Outfall, 2007. City of San Diego Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring and Technical Services Division, San Diego, CA.

Elder, J.R. September 27, 1989. Memorandum to EPA Regional Water Management Division Directors titled: FY 1990 Guidance for Reporting and Evaluating POTW Noncompliance with Pretreatment Implementation Requirements. U.S. Environmental Protection Agency, Washington D.C.

Eppley, R.W., E.H. Renger, W.G. Harrison, and J.J. Cullen. 1979. Ammonium distribution in Southern California coastal waters and its role in the growth of phytoplankton. Limnol. Oceanogr., 24(3):495-509.

Hendricks, T.J. and R. Eganhouse. 1992. Modification and verification of sediment deposition models. Technical Report 265. Prepared for California State Water Resources Control Board, Contract 7-192-250-0. Southern California Coastal Water Research Project, Long Beach, CA. 331 pp.

Mearns, A.J., M. Matta, G. Shigenaka, D. MacDonald, M. Buchman, H. Harris, J. Golas, and G. Lauenstein. 1991. Contaminant Trends in the Southern California Bight: Inventory and Assessment. NOAA Technical Memorandum NOS ORCA 62. National Oceanic and Atmospheric Administration, Seattle, WA.

Nelson, J.R., J.R. Beers, R.W. Eppley, G.A. Jackson, J.J. McCarthy, and A. Souter. 1987. A particle flux study in the Santa Monica – San Pedro Basin off Los Angeles: Particle flux, primary production, and transmissometer survey. Cont. Shelf Res. 7:307-328.

NOAA. 1999. Sediment Quality Guidelines developed for the National Status and Trends Program (6/12/1999). 12 pp. http://response.restoration.noaa.gov/book_shelf/121_sedi_qual_guide.pdf.

Klasing, S. and R. Brodberg. 2008. Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Sacramento, CA. http://oehha.ca.gov/fish/gtlsv/pdf/FCGsATLs27June2008.pdf.

Ranasinghe, J.A., A.M. Barnett, K. Schiff, D.E. Montagne, C. Brantley, C. Beegan, D.B. Cadien, C. Cash, G.B. Deets, D.R. Diener, T.K. Mikel, R.W. Smith, R.G. Velarde, S.D. Watts, and S.B. Weisberg. 2007. Southern California Bight 2003 Regional Monitoring Program: III. Benthic Macrofauna. Technical Report 529. Southern California Coastal Water Research Project, Costa Mesa, CA. ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/529_B03_Benthic.pdf.

San Diego RWQCB. 1994. Water Quality Control Plan for the San Diego Basin (Basin Plan). California Regional Water Quality Control Board, San Diego Region, San Diego, CA. http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml.

San Diego RWQCB. 2008. National Pollutant Discharge Elimination System Permit No. CA0107409, City of San Diego, E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant and Ocean Outfall. http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2002/R9_2002_0025.pdf.

Schiff, K.C., M.J. Allen, E.Y. Zeng, and S.M. Bay. 2000. Southern California. Marine Pollution Bulletin 41(1-6):76-93. ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/JournalArticles/329_scb.pdf.

Schiff, K., K. Maruya, and K. Christenson. 2006. Southern California Bight 2003 Regional Monitoring Program: II. Sediment Chemistry. Technical Report 492. Southern California Coastal Water Research Project, Westminster, CA. ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/492_B03_sed_chem.pdf.

Smith, R.W., M. Bergen, S.B. Weisberg, D. Cadien, A. Dalkey, D. Montagne, J. Stull, and R.G. Velarde 2001. Benthic response index for assessing infaunal communities on the Southern California mainland shelf. Ecological Applications 11(4):1073-1087.

SWRCB. 2005. Water Quality Control Plan, Ocean Waters of California (California Ocean Plan). California State Water Resources Control Board, Sacramento, CA. http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/oplans/oceanplan2005.pdf.

USEPA. 1982. Revised Section 301(h) Technical Support Document. EPA 430/9-82-011. U.S. Environmental Protection Agency, Office of Water Operations, Washington, D.C.

USEPA. 1994. Discharges into Marine Waters; Modification of Secondary Treatment Requirements; Final Rule. U.S. Environmental Protection Agency, Washington, D.C. Federal Register: August 9, 1994, Vol. 59, No. 152, pp. 40642-40669.

USEPA. 1994. Amended Section 301(h) Technical Support Document. EPA 842-B-94-007. U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds, Washington, D.C.

USEPA. 1995. Tentative decision document: City of San Diego's application for 301(h) discharge from the E.W. Blom Metropolitan Wastewater Treatment Plant and Ocean Outfall. U.S. Environmental Protection Agency, Region IX, San Francisco.

USEPA. 2000. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories. Volume 1: Fish Sampling and Analysis. Third Edition. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. http://www.epa.gov/waterscience/fish/advice/volume1/index.html.

USEPA. 2001. Water Quality Criteria: Notice of Availability of Water Quality Criterion for the Protection of Human Health: Methylmercury; Final Rule. U.S. Environmental Protection Agency, Washington, D.C. Federal Register: January 8, 2001, Vol. 66, No. 5, pp 1344-1359. http://www.epa.gov/fedrgstr/EPA-WATER/2001/January/Day-08/w217.htm.

USEPA. 2002. Tentative decision document: City of San Diego's application for 301(h) discharge from the E.W. Blom Metropolitan Wastewater Treatment Plant and Ocean Outfall. U.S. Environmental Protection Agency, Region IX, San Francisco.

USEPA, 2004. Water Quality Standards for Coastal and Great Lakes Recreation Waters; Final Rule. U.S. Environmental Protection Agency, Washington D.C. Federal Register: November 16, 2004, Vol. 69, No. 220. pp. 67217-67243. http://www.epa.gov/fedrgstr/EPA-WATER/2004/November/Day-16/w25303.htm.

(Page intentionally blank)

APPENDIX A – FIGURES

(Page intentionally blank)

Figure A-1. Map of the San Diego Metropolitan Sewage System service area.

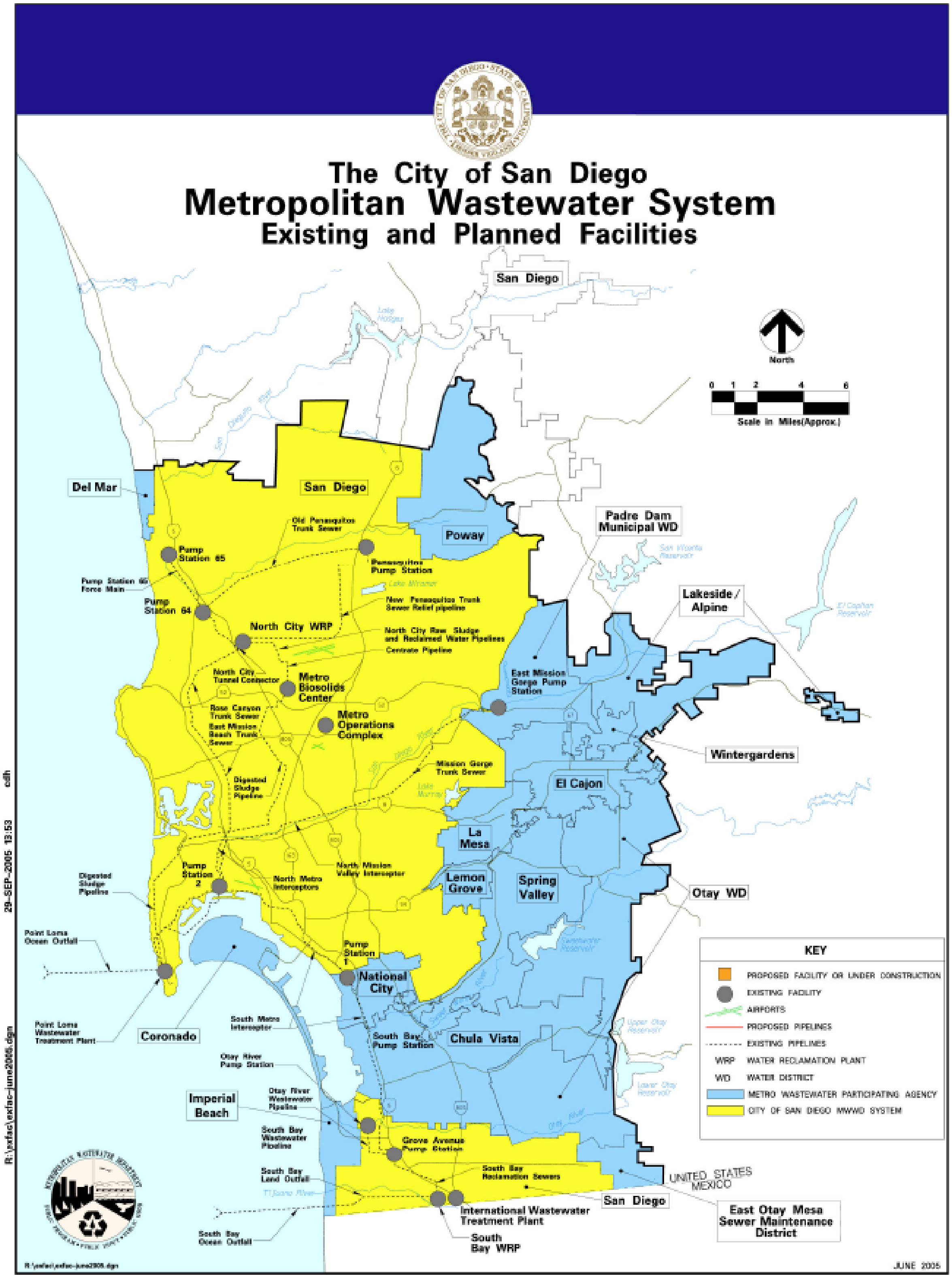


Figure A-2. Schematic of the existing Metro System treatment and solids handling facilities.

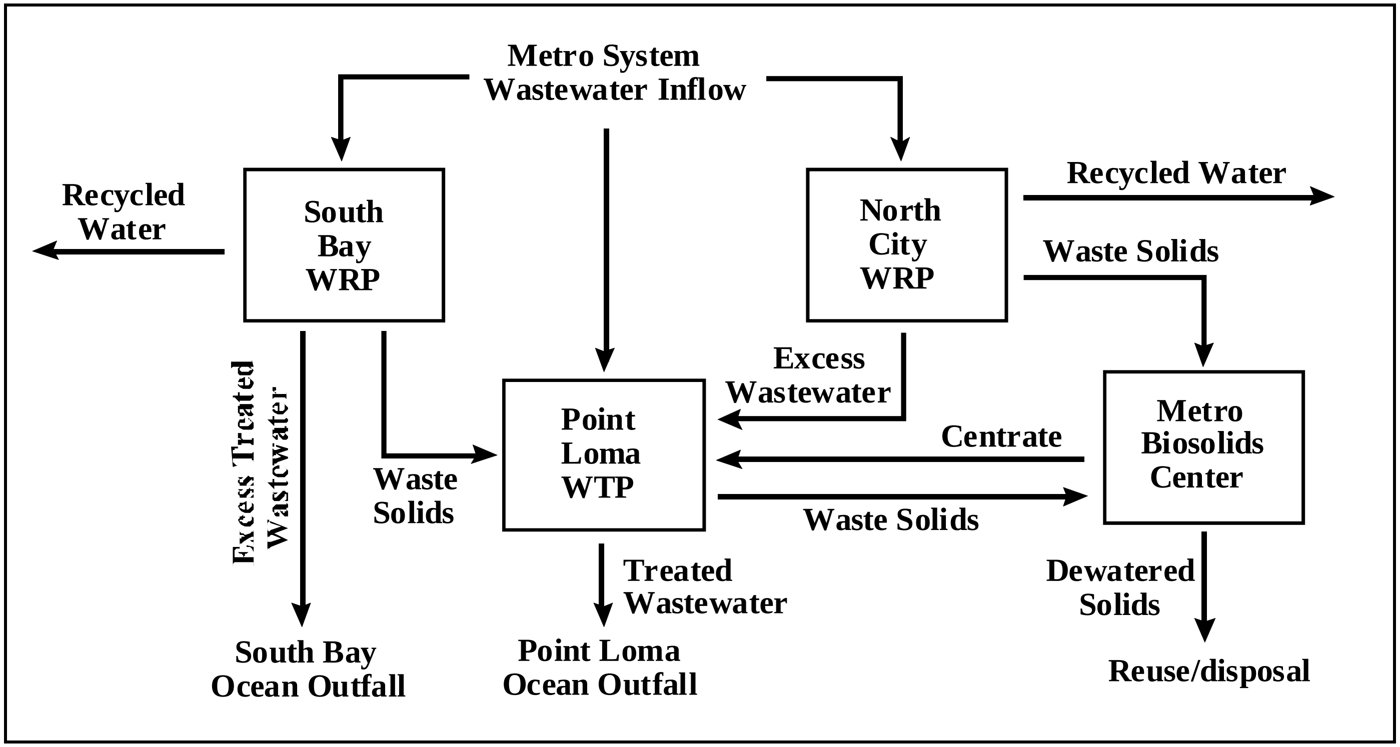


Figure A-3. Map of water quality monitoring station locations in offshore, kelp bed, and shoreline areas.

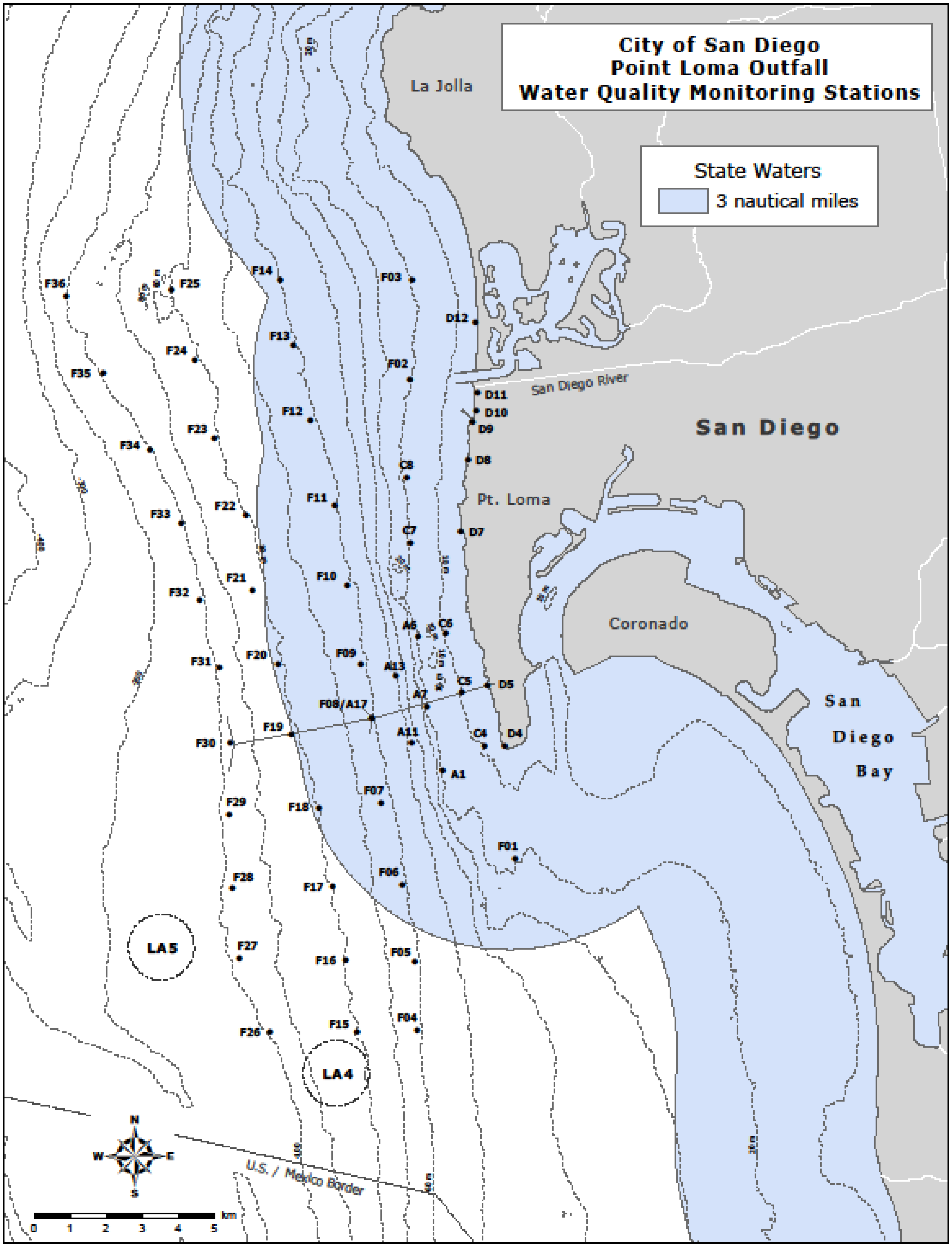


Figure A-4. Map of sediment chemistry and benthic macrofauna monitoring station locations in offshore area.

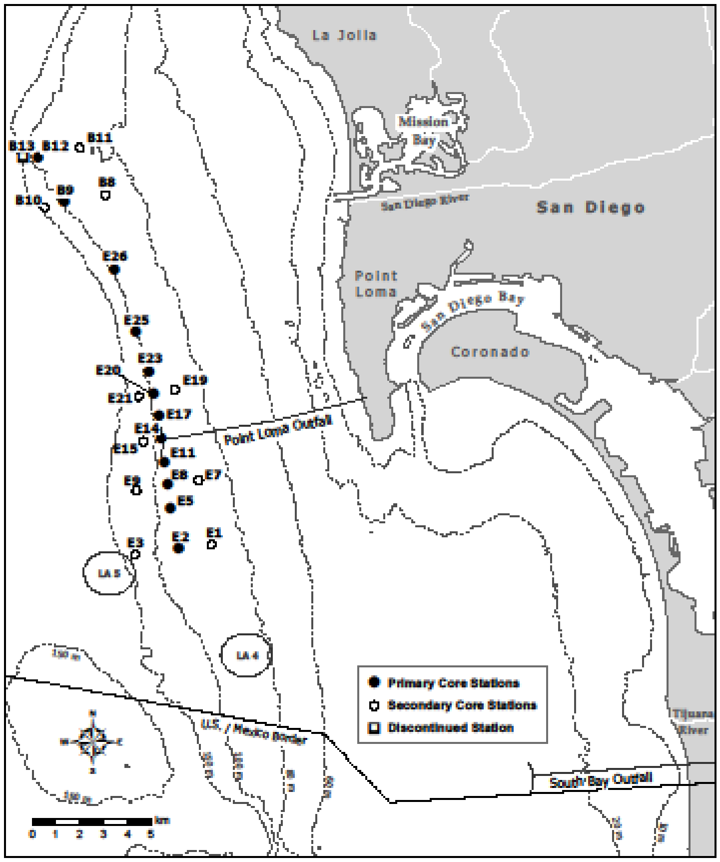


Figure A-5. Long-term average and standard deviation for percent transmissivity at 20, 60, 80, and 100 meter contours (October 2003 through October 2007).

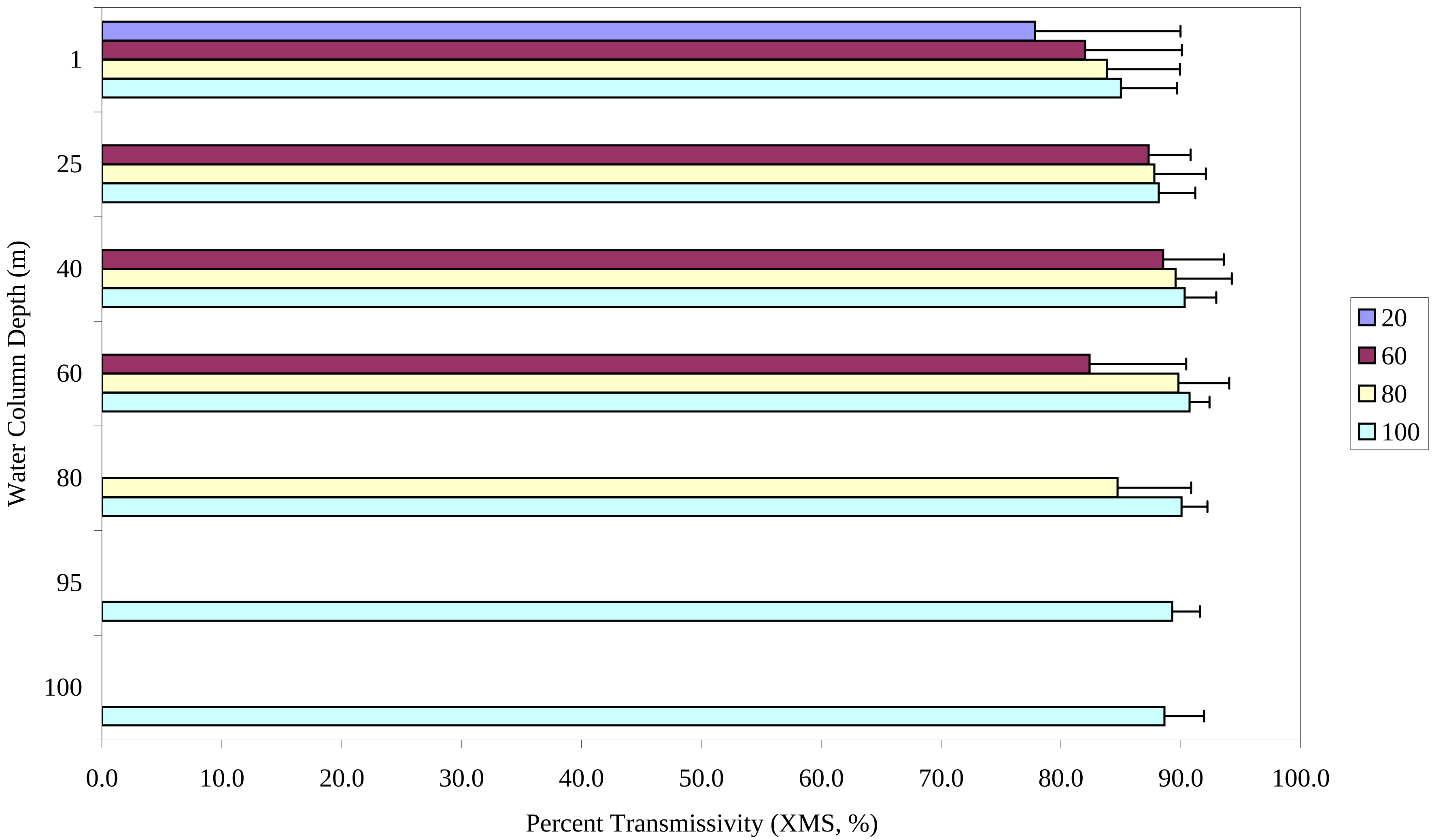


Figure A-6. Long-term average and standard deviation for dissolved oxygen concentration at 20, 60, 80, and 100 meter contours (October 2003 through October 2007).

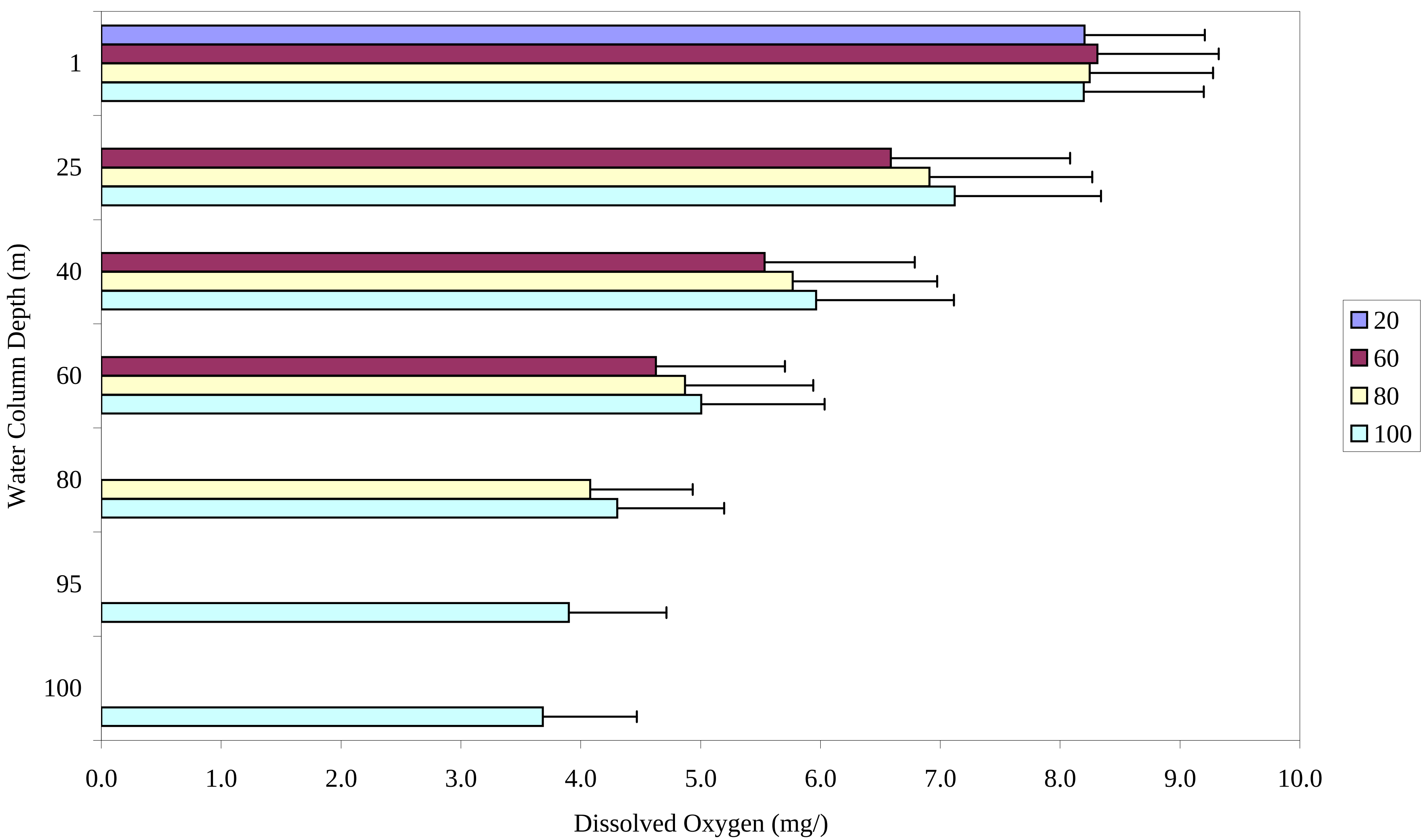


Figure A-7. Long-term average and standard deviation for pH at 20, 60, 80 and 100 meter contours (October 2003 through October 2007).

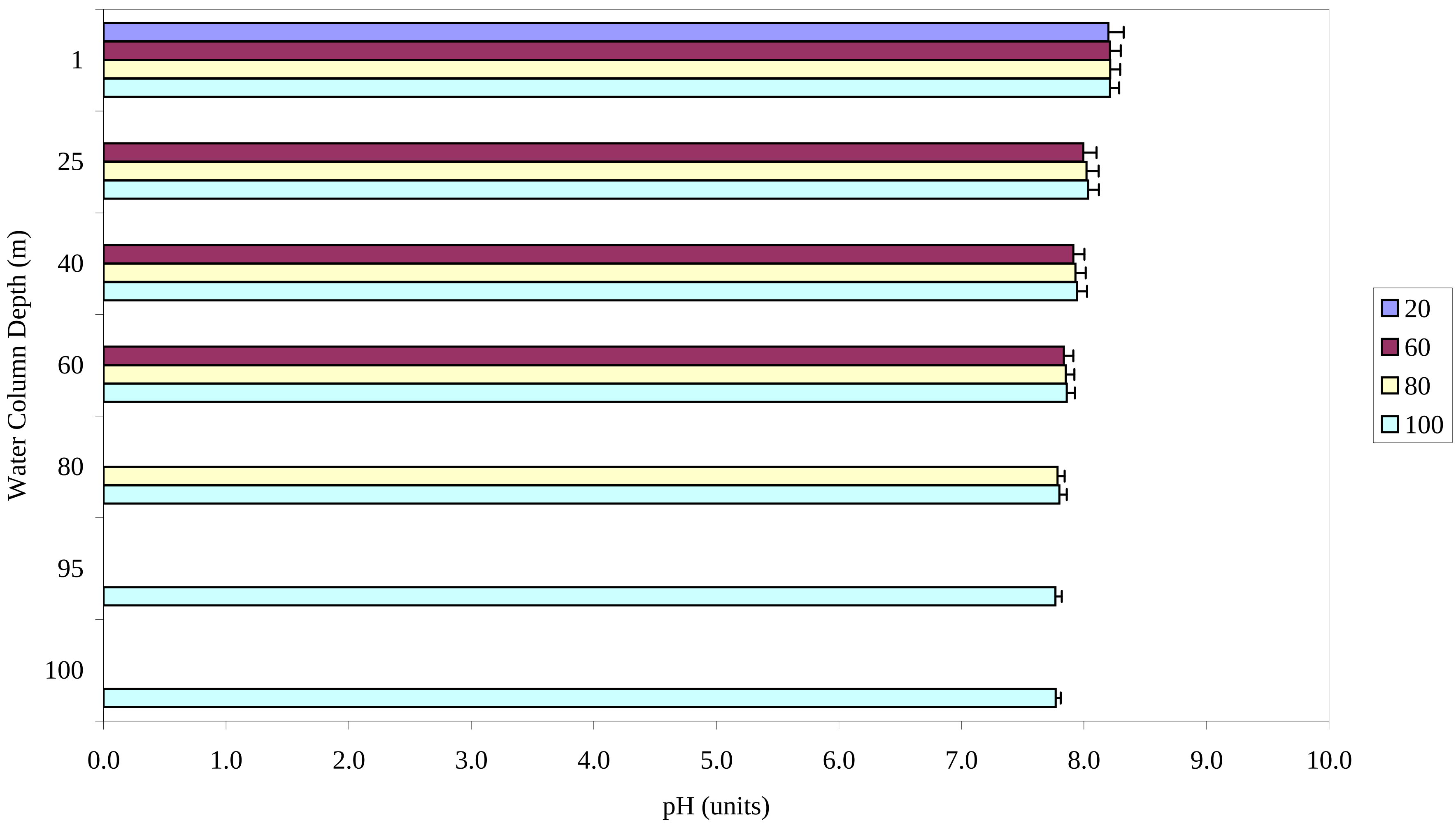


Figure A-8. Percent total solids in sediment at 98 meter B and E stations during July (1991-2006).

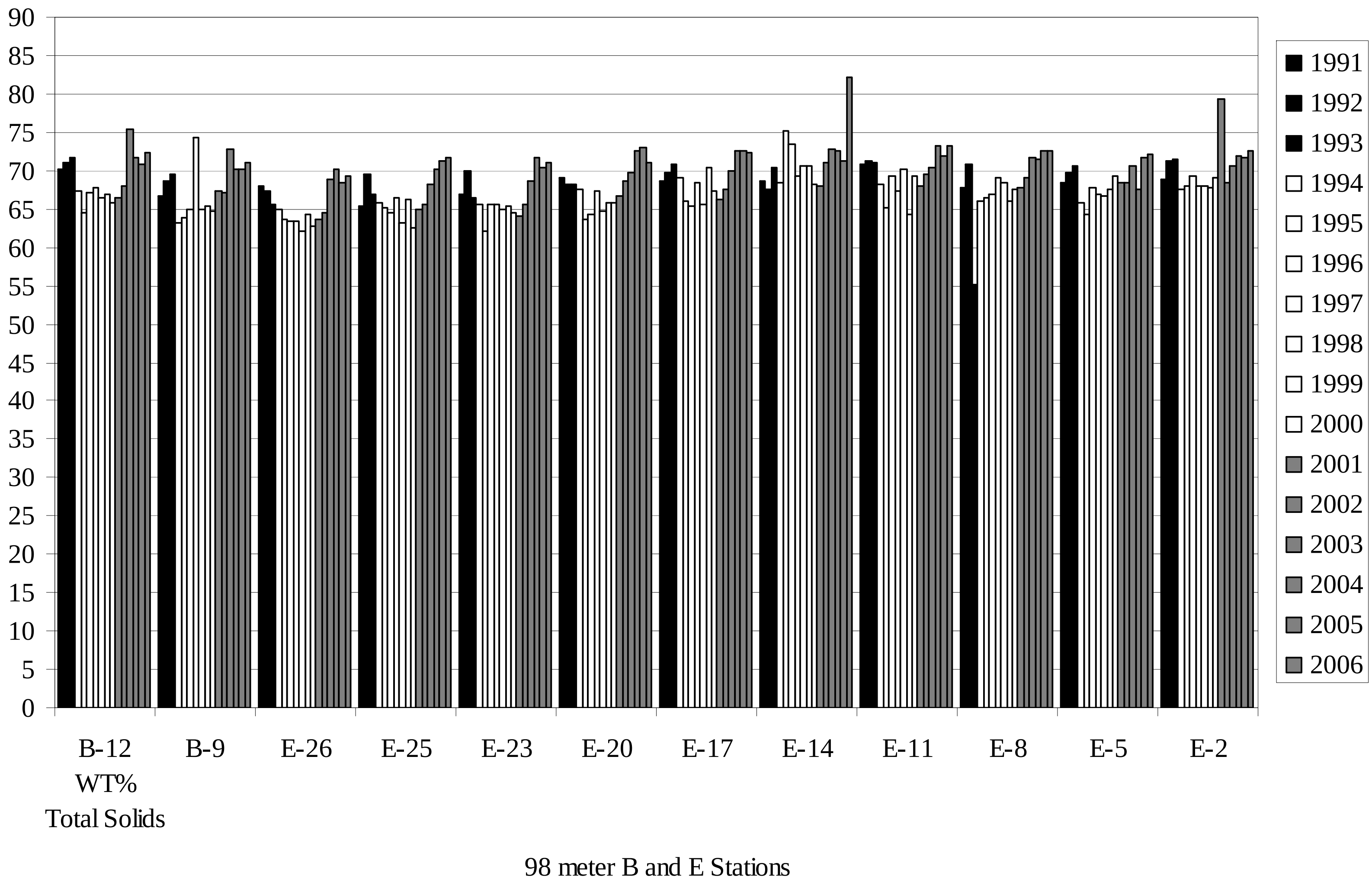


Figure A-9. Percent total organic carbon in sediment at 98 meter B and E stations during July (1991-2006).

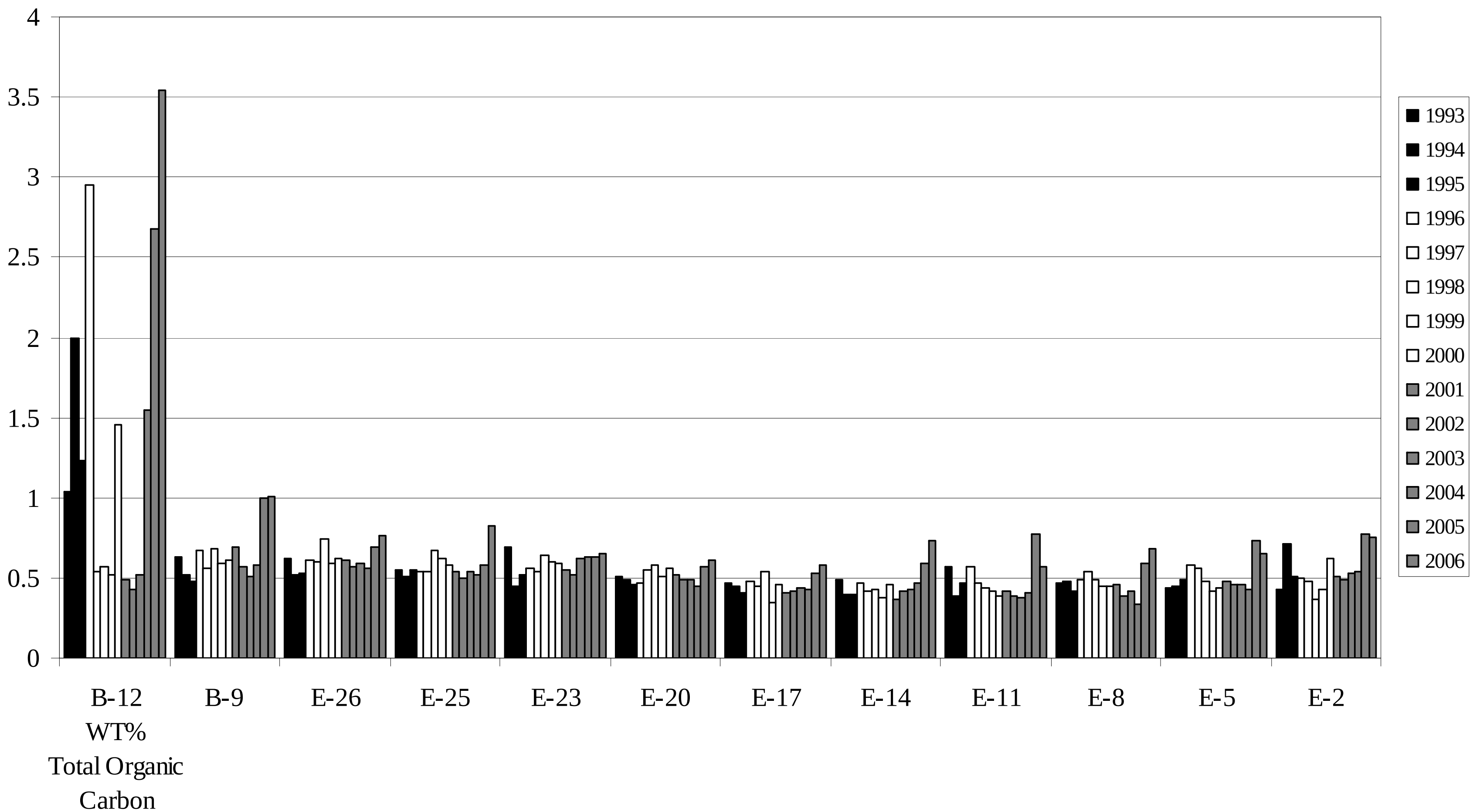


Figure A-10. Percent total volatile solids in sediment at 98 meter B and E stations during July (1991-2006).

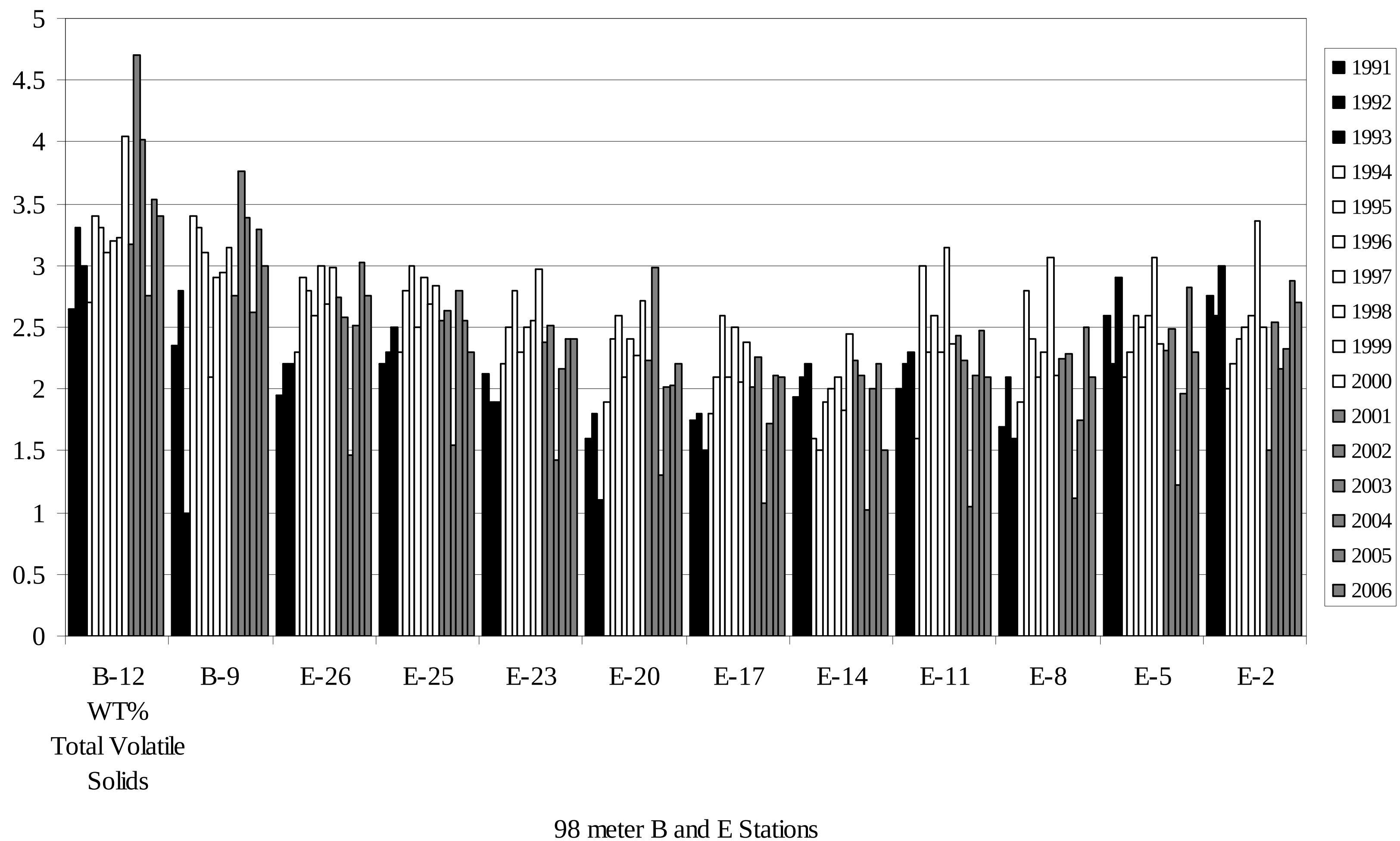


Figure A-11. Percent total nitrogen in sediment at 98 meter B and E stations during July (1991-2006).

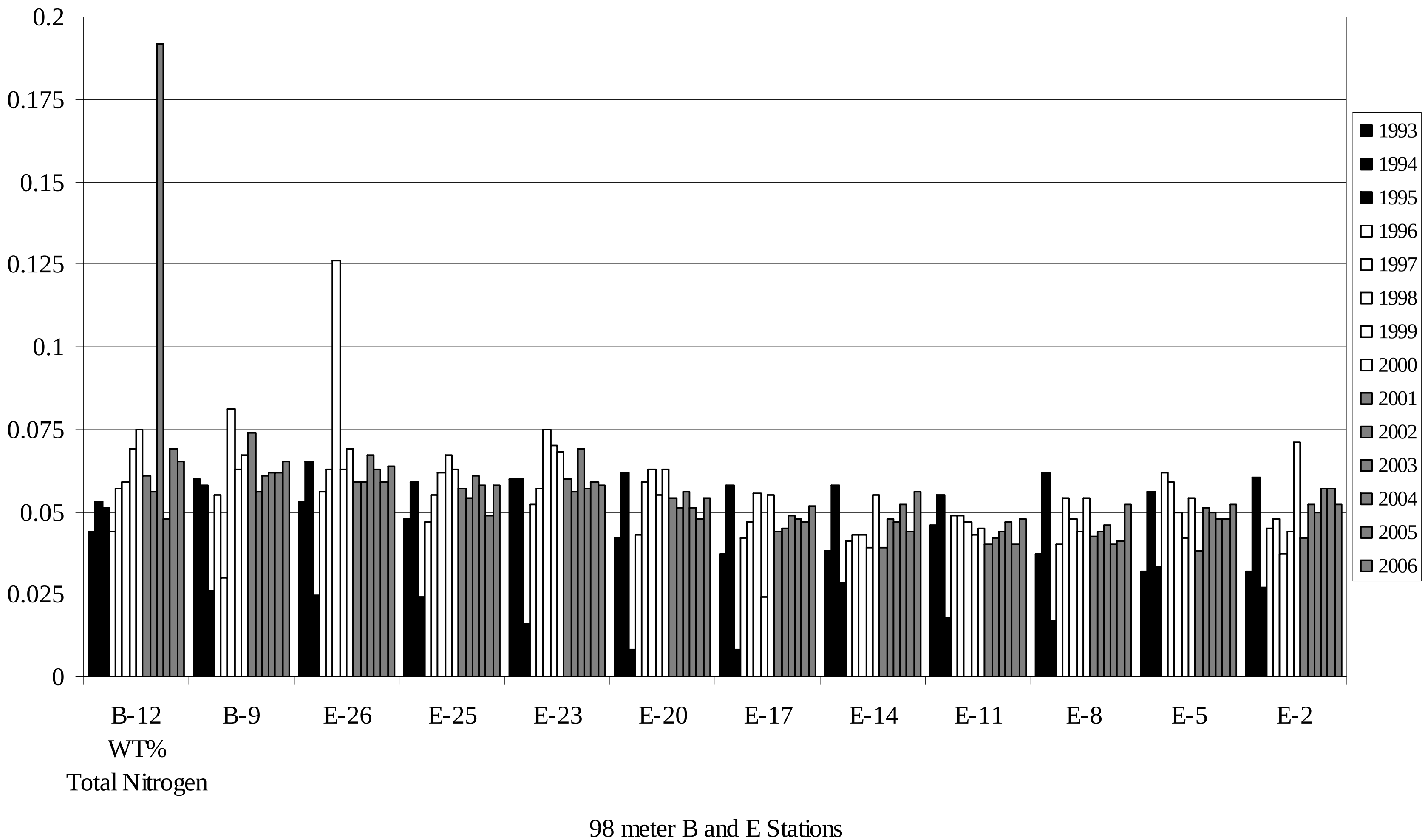


Figure A-12. Biochemical oxygen demand concentrations (mg/kg or ppm) in sediment at 98 meter B and E stations during July (1991-2006).

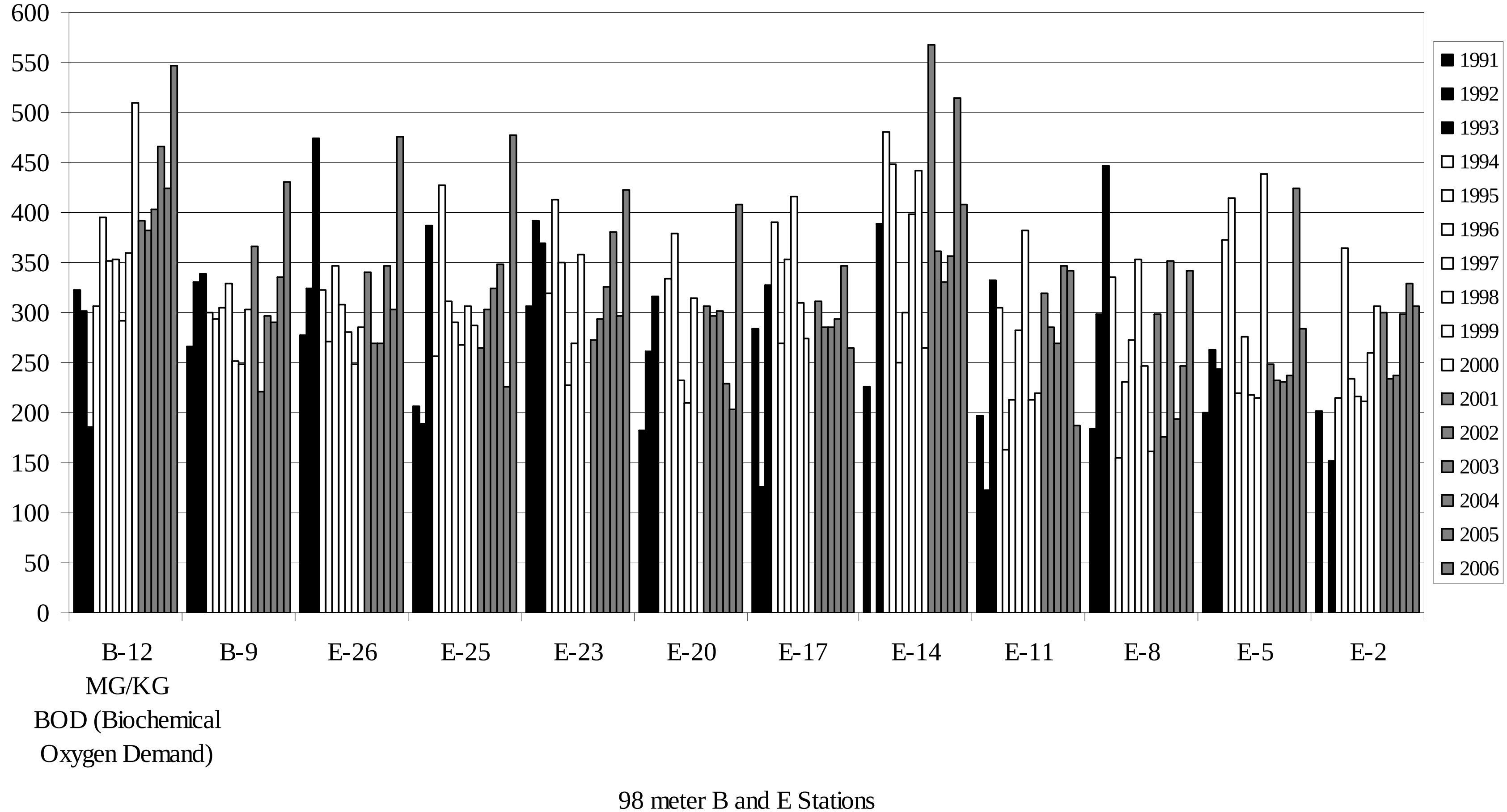


Figure A-13. Total sulfides concentrations (mg/kg or ppm) in sediment at 98 meter B and E stations during July (1991-2006).

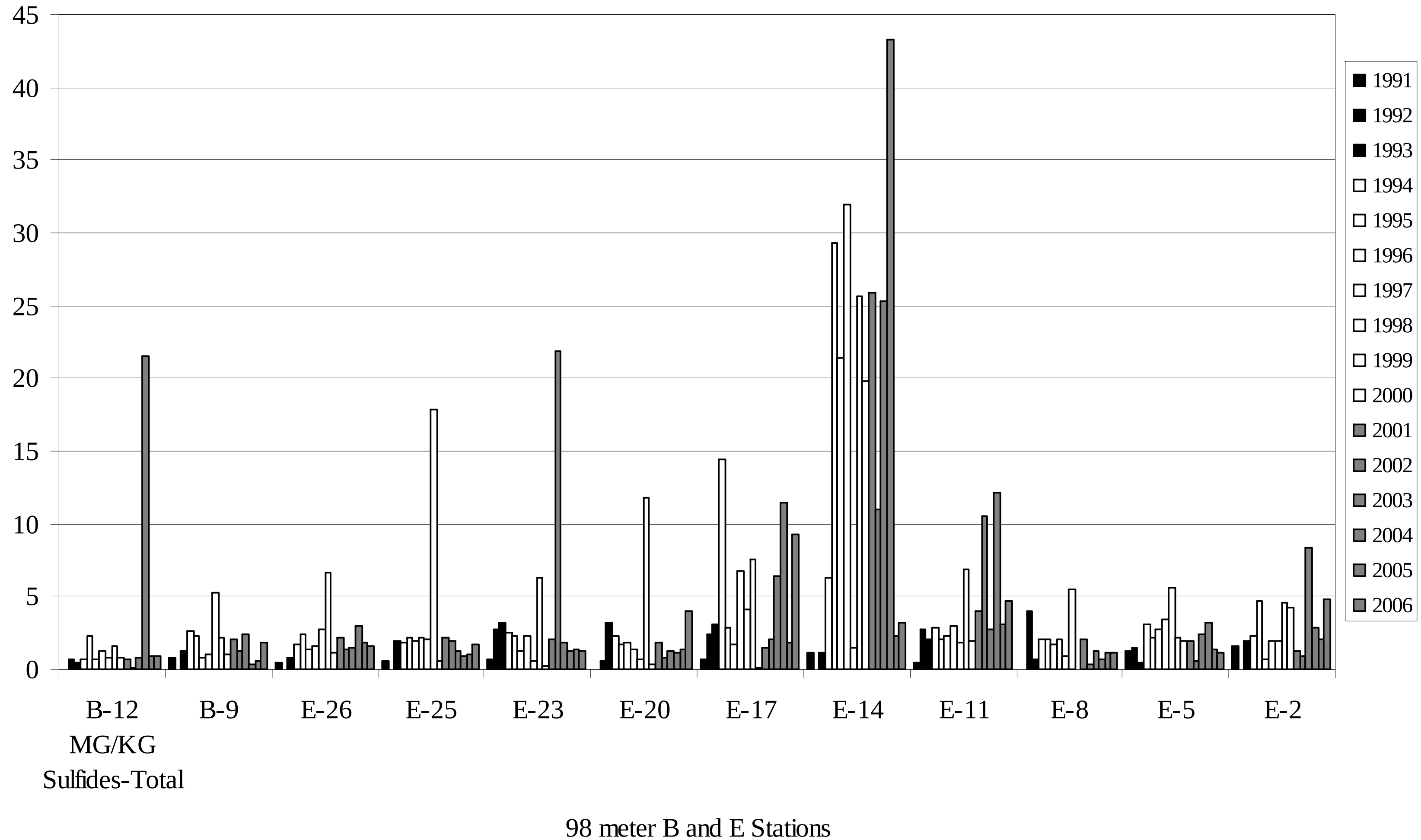


Figure A-14. Arsenic concentrations (mg/kg or ppm) in sediment at 98 meter B and E stations during July (1991-2006).

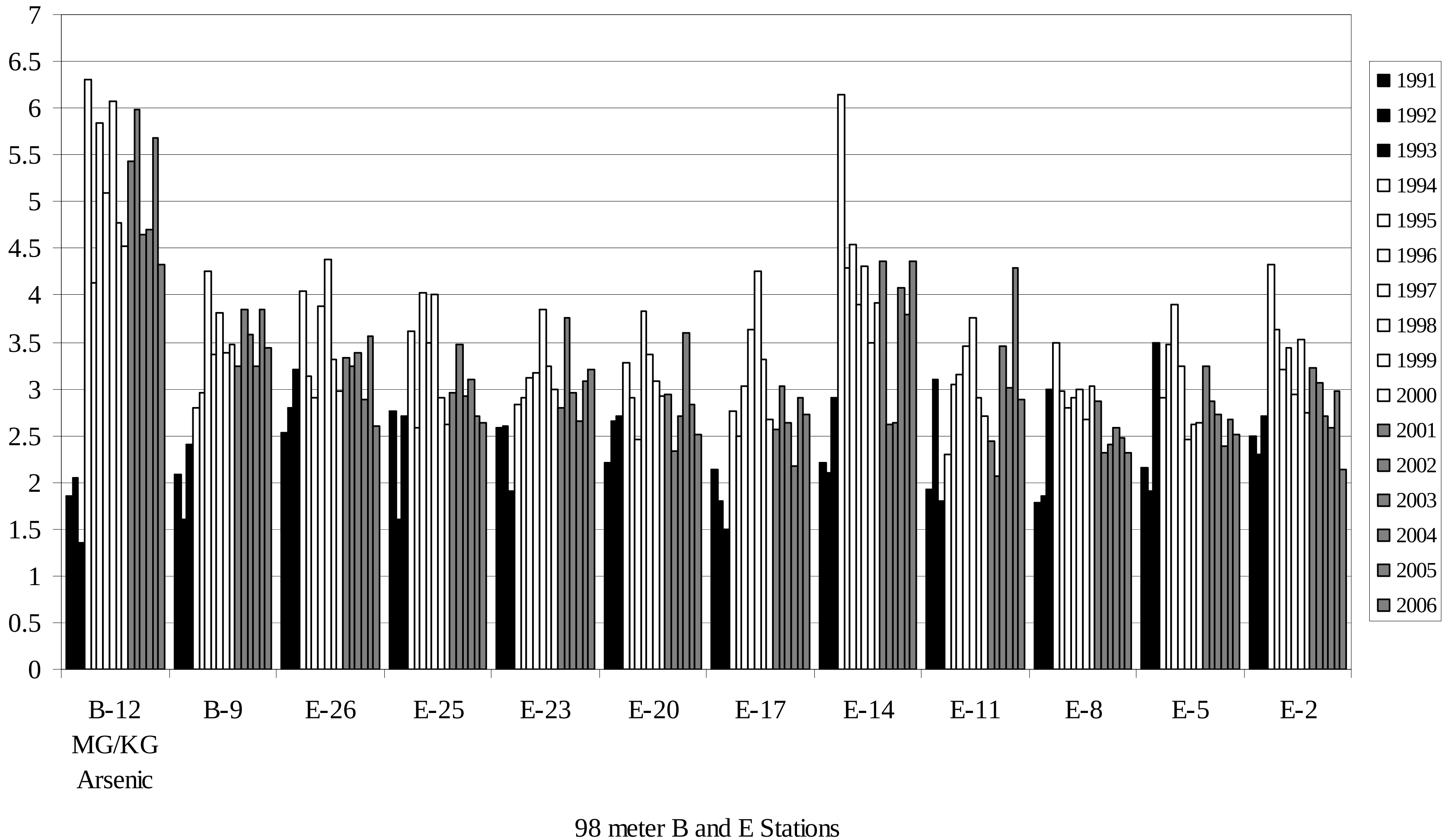


Figure A-15. Cadmium concentrations (mg/kg or ppm) in sediment
at 98 meter B and E stations during July (1991-2006).

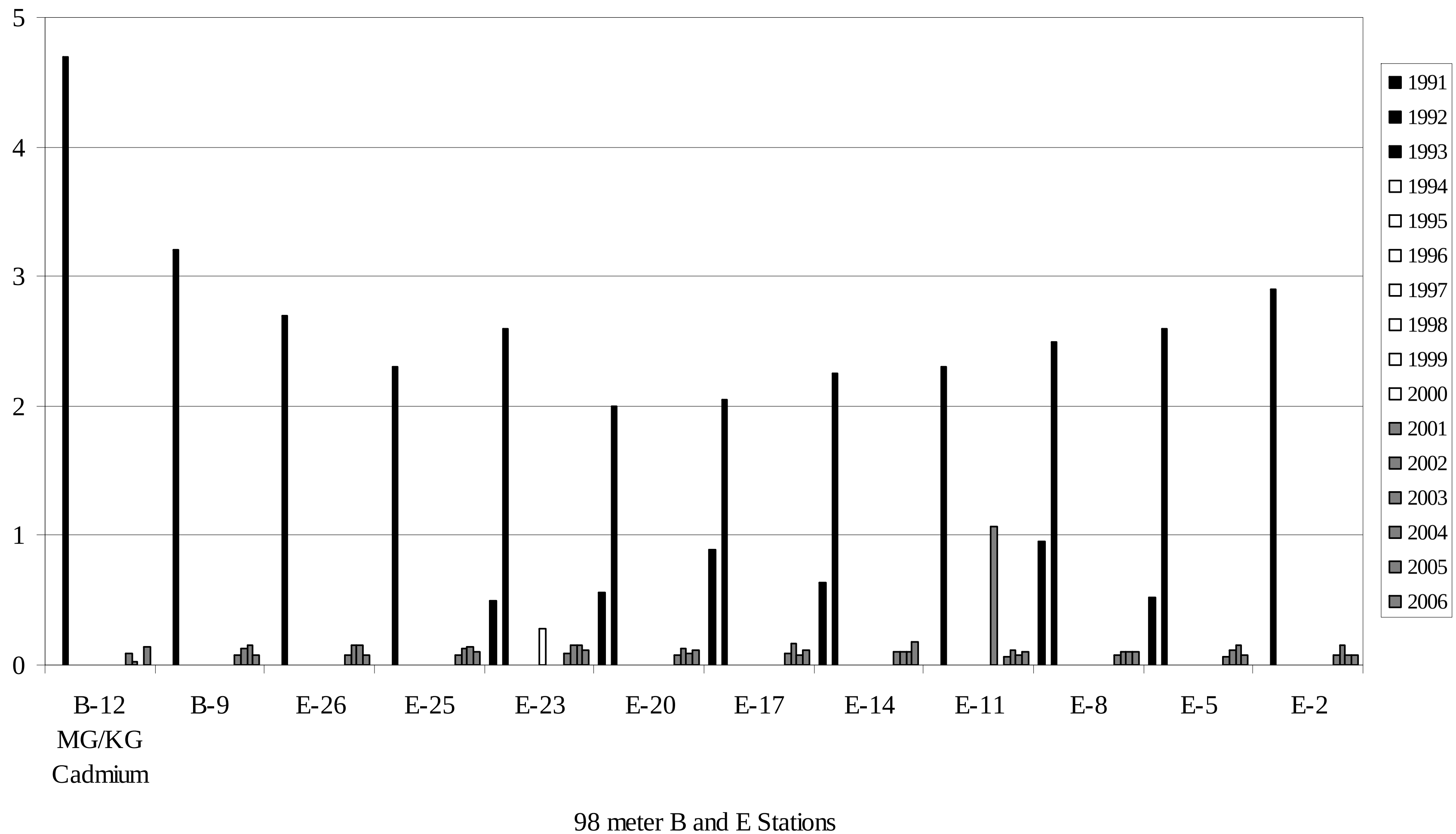


Figure A-16. Chromium concentrations (mg/kg ppm) in sediment at 98 meter B and E stations during July (1991-2006).

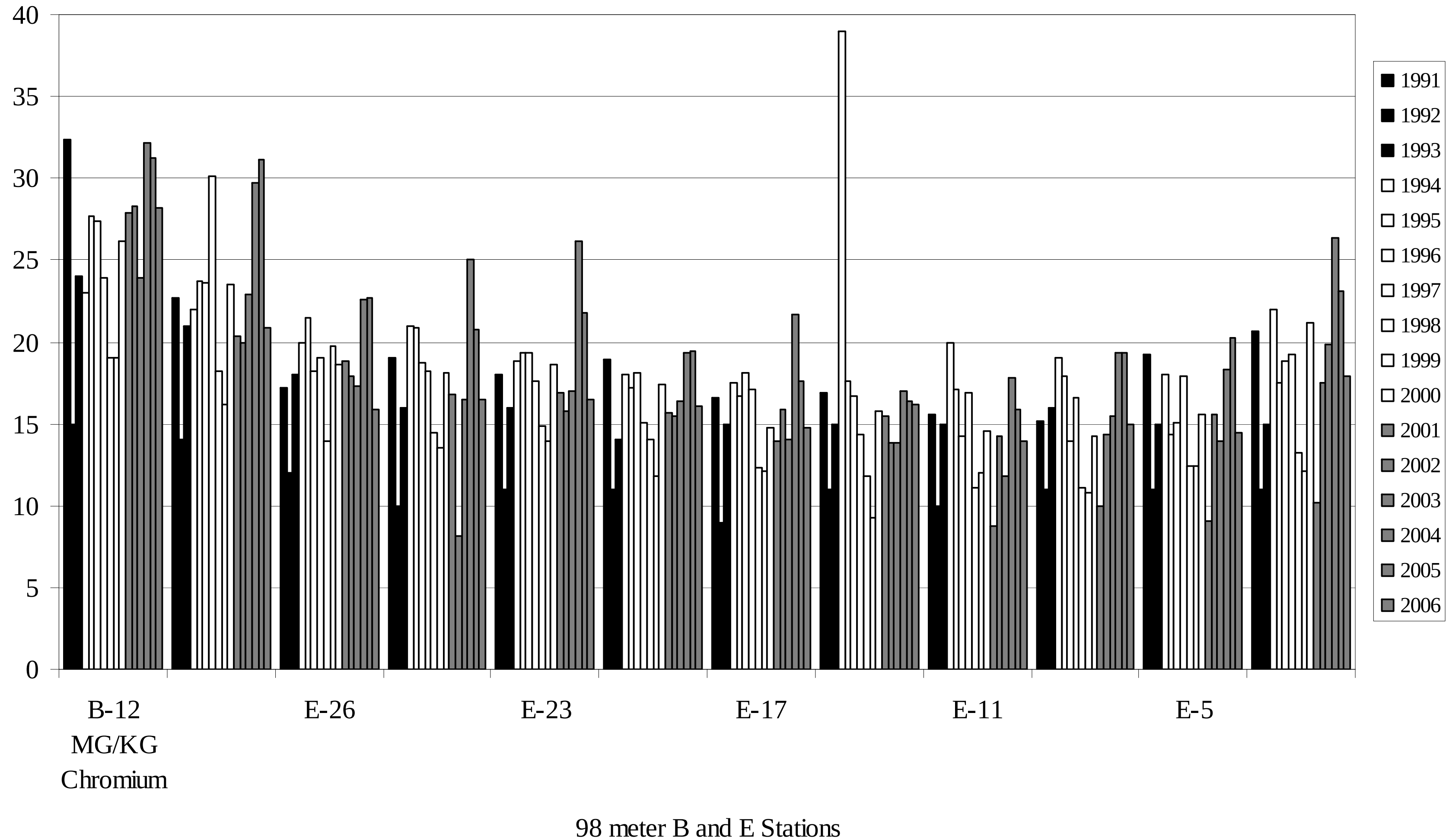


Figure A-17. Copper concentrations (mg/kg or ppm) in sediment
at 98 meter B and E stations during July (199-2006).

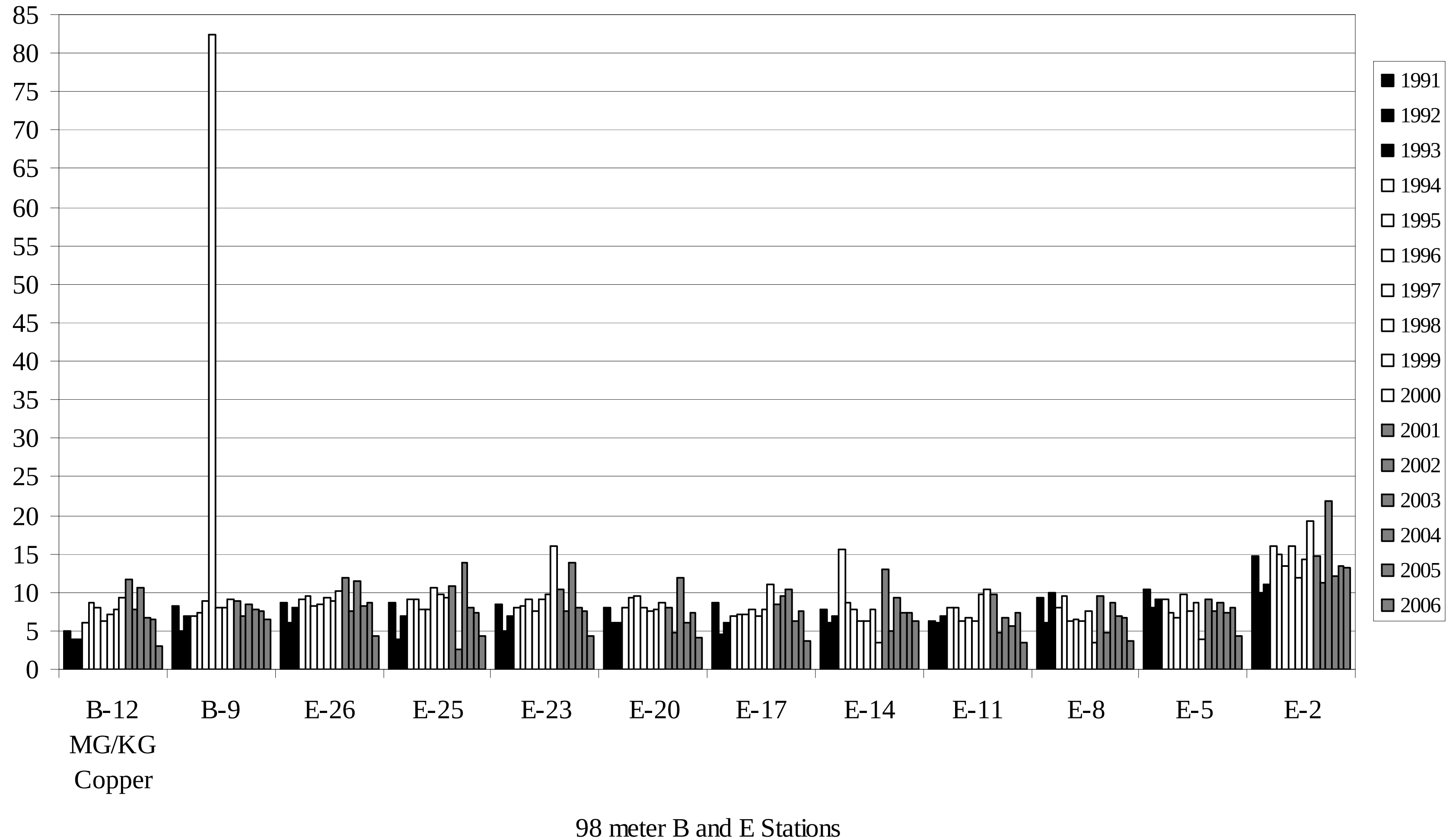


Figure A-18. Lead concentrations (mg/kg or ppm) in sediment at 98 meter B and E stations during July (1991-2006).

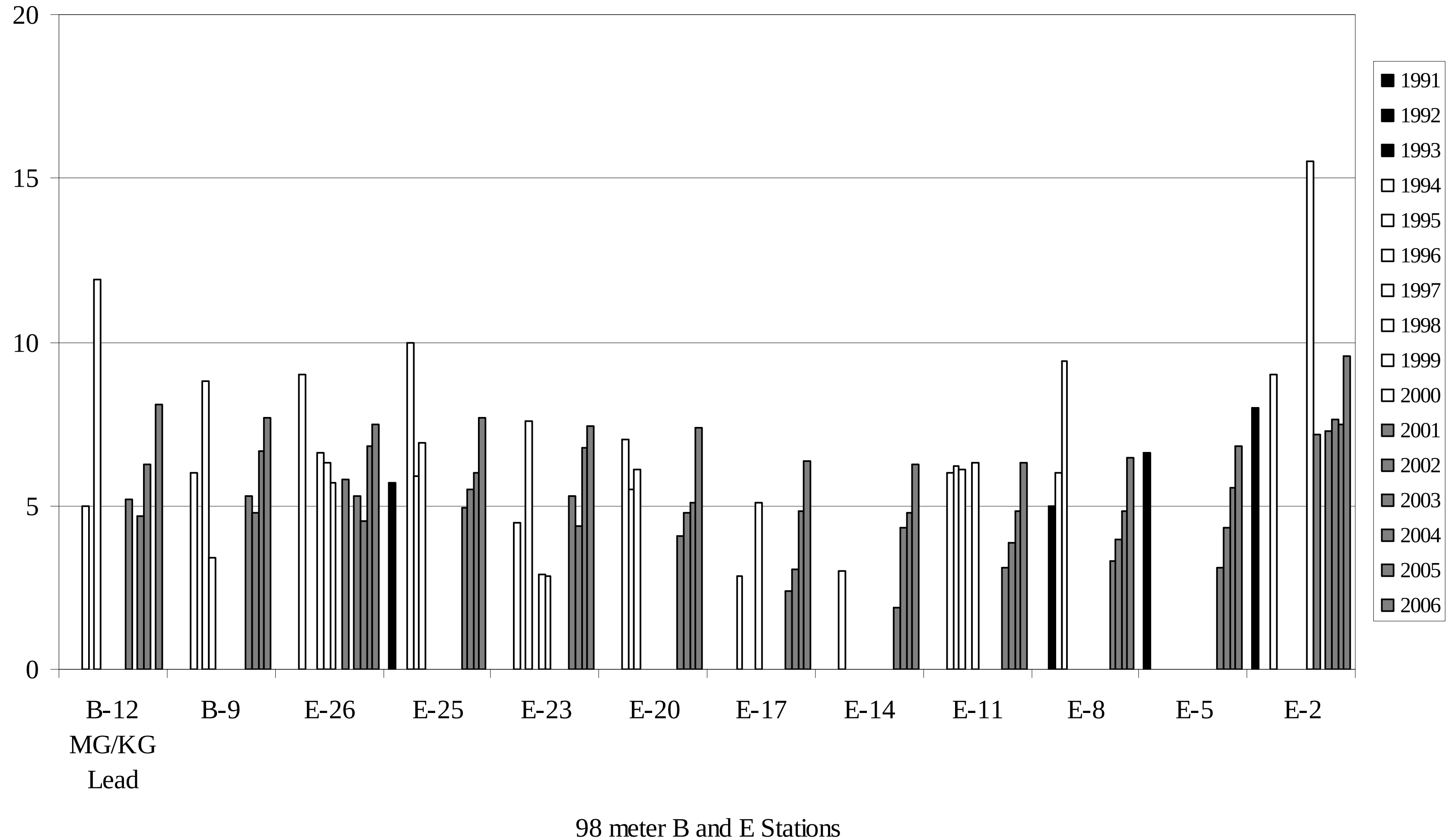


Figure A-19. Mercury concentrations (mg/kg or ppm) in sediment at 98 meter B and E stations during July (1991-2006).

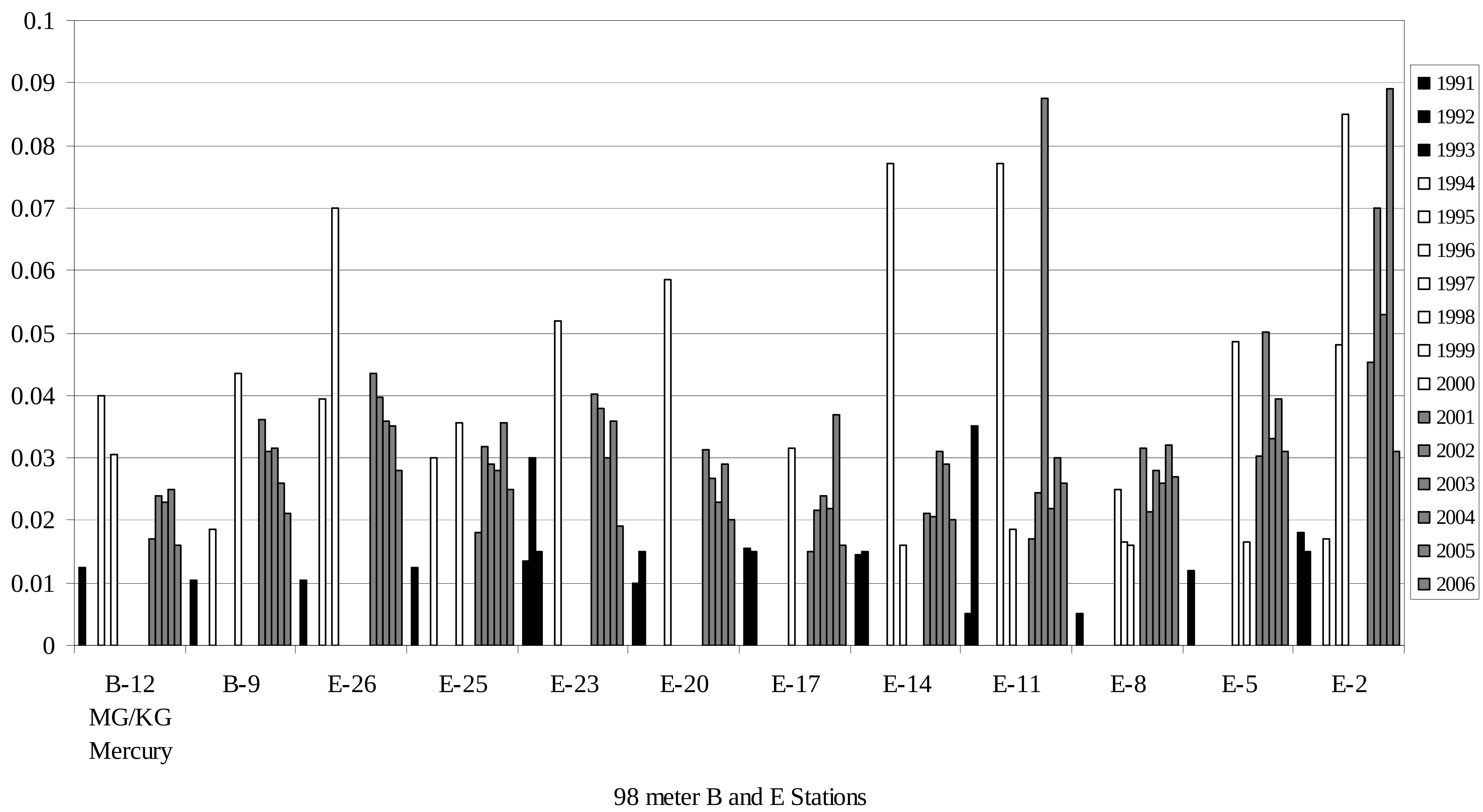


Figure A-20. Nickel concentrations (mg/kg or ppm) in sediment
at 98 meter B and E stations during July (1991-2006).

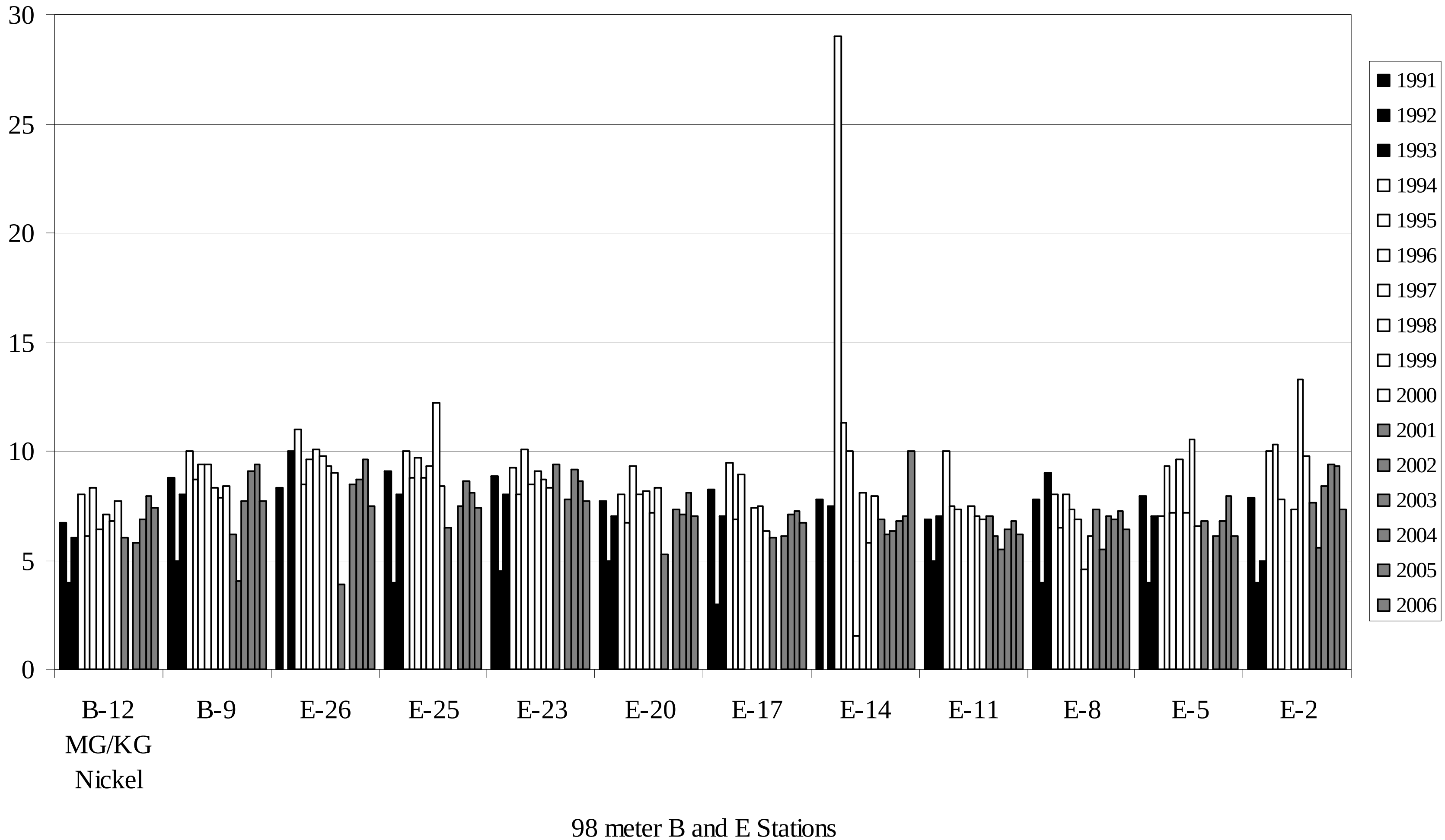


Figure A-21. Selenium concentrations (mg/kg or ppm) in sediment
at 98 meter B and E stations during July (1991-2006).

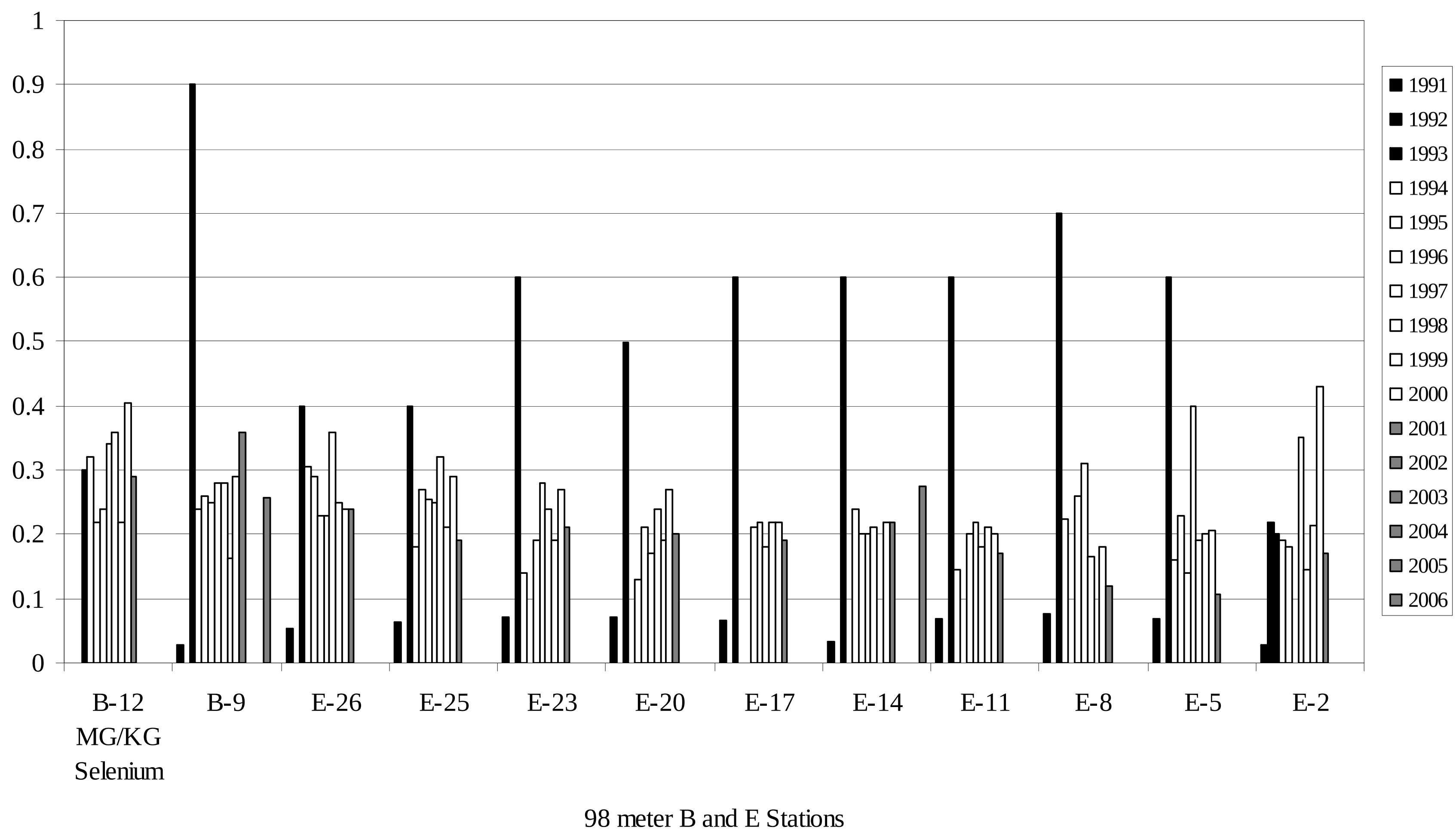


Figure A-22. Silver concentrations (mg/kg or ppm) in sediment at 98 meter B and E stations during July (1991-2006).

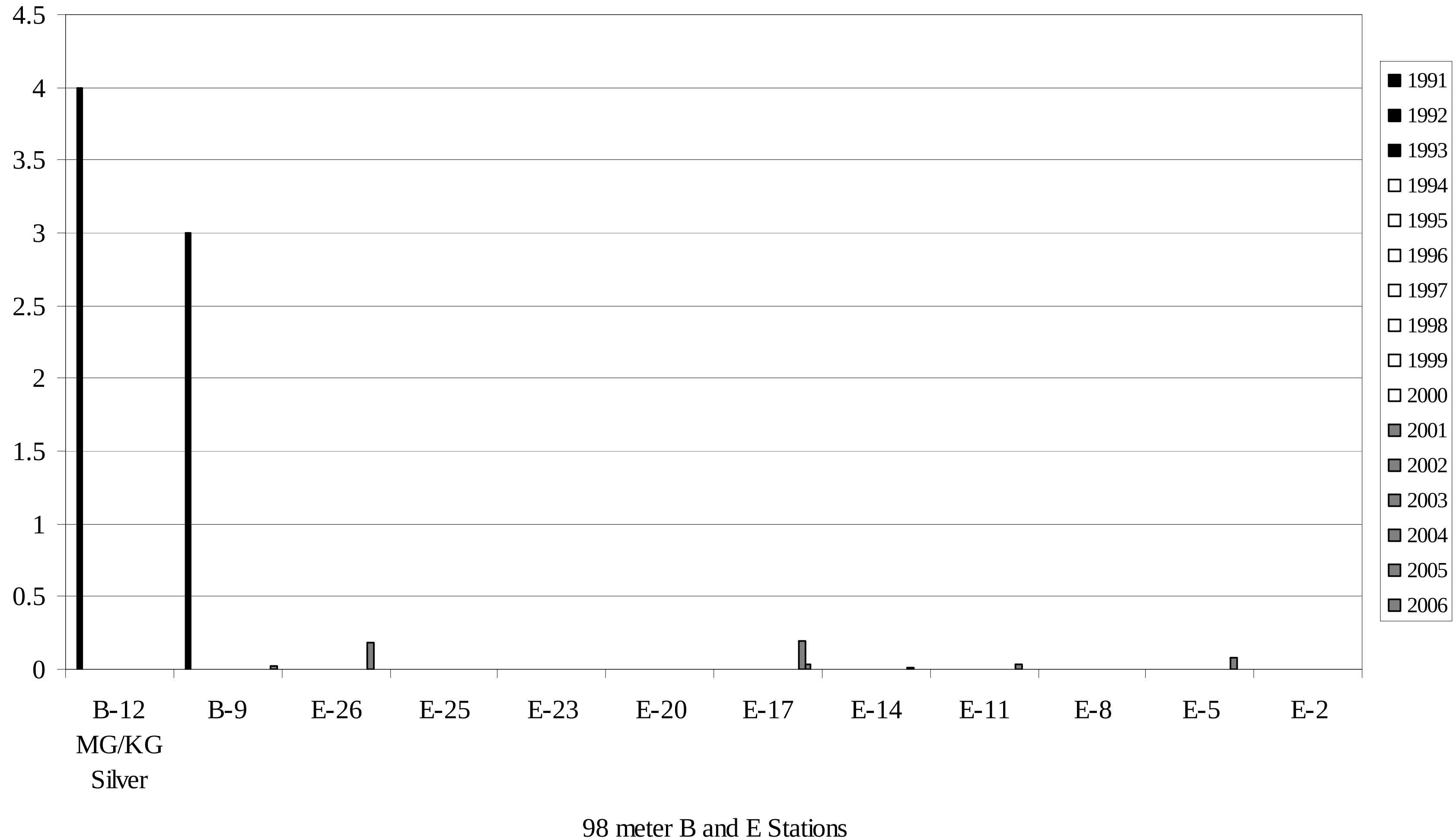


Figure A-23. Zinc concentrations (mg/kg or ppm) in sediment
at 98 meter B and E stations during July (1991-2006).

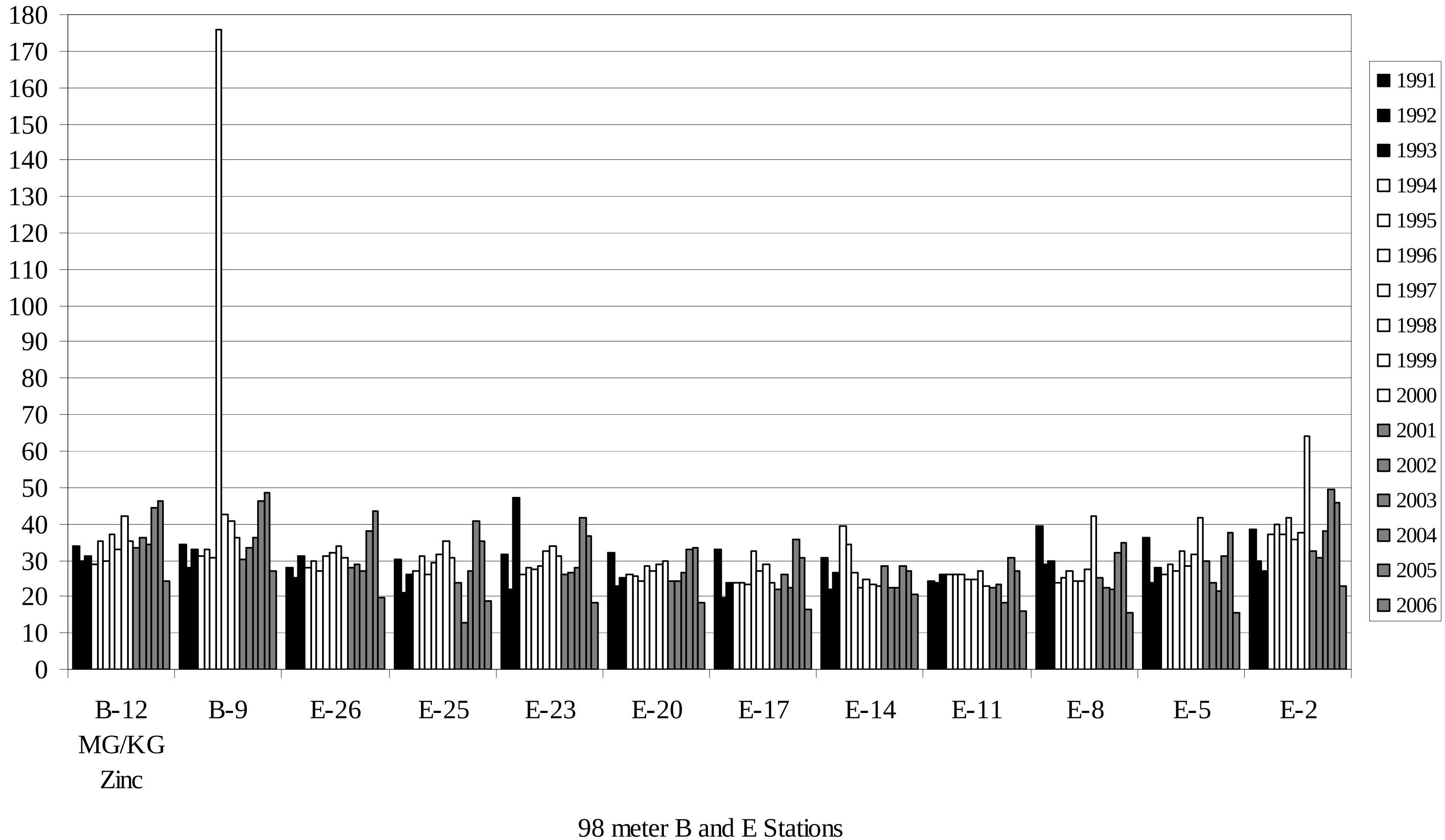


Figure A-24. Total DDTs concentrations (ng/kg or ppt) in sediment at 98 meter B and E stations during July (1991-2006).

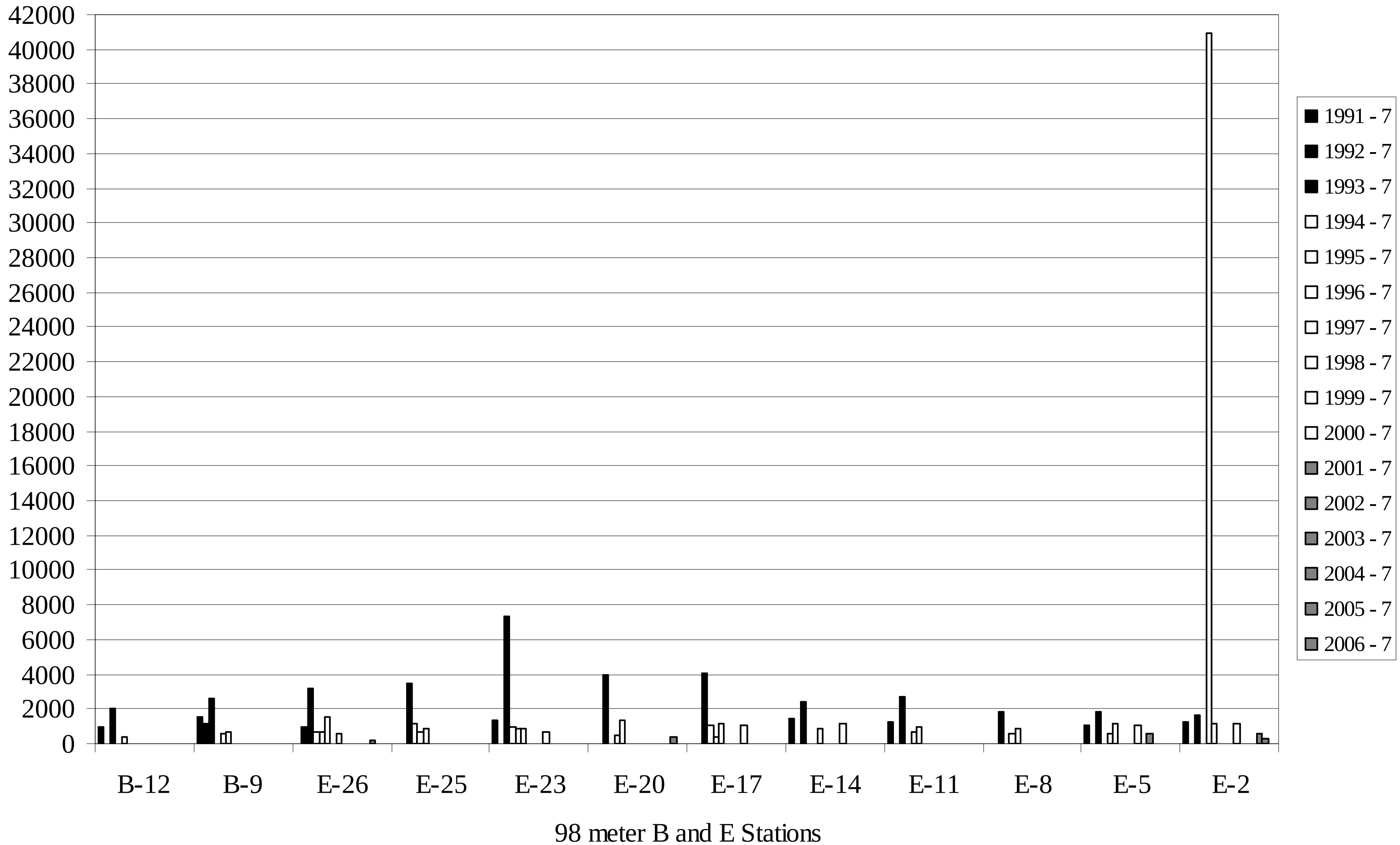


Figure A-25. Total PAHs concentrations (ug/kg or ppb) in sediment at 98 meter B and E stations during July (1991-2006).

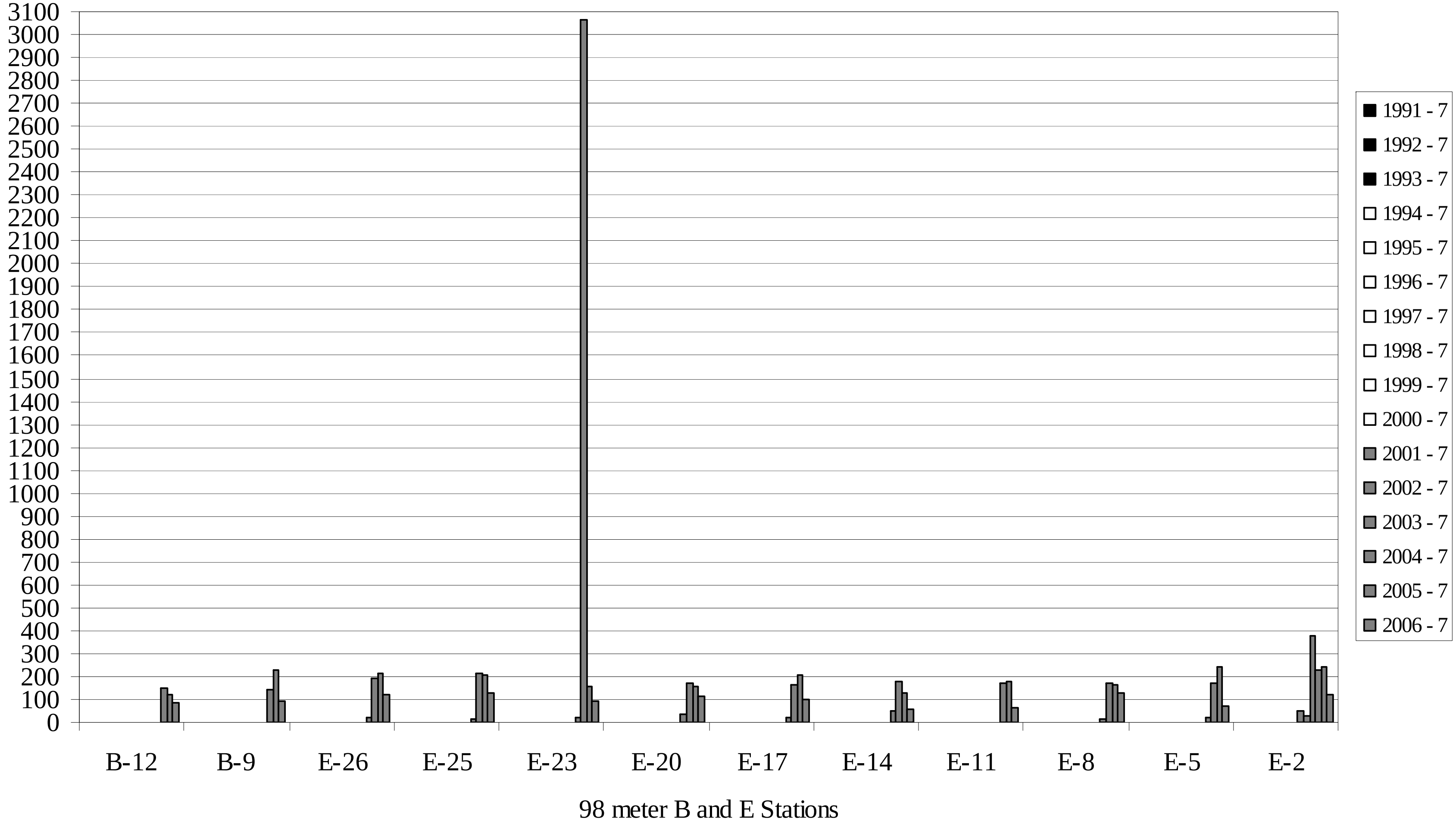


Figure A-26. Long-term average and standard deviation for chlorophyll a concentrations at 20, 60, 80, and 100 meter contours (October 2003 through October 2007).

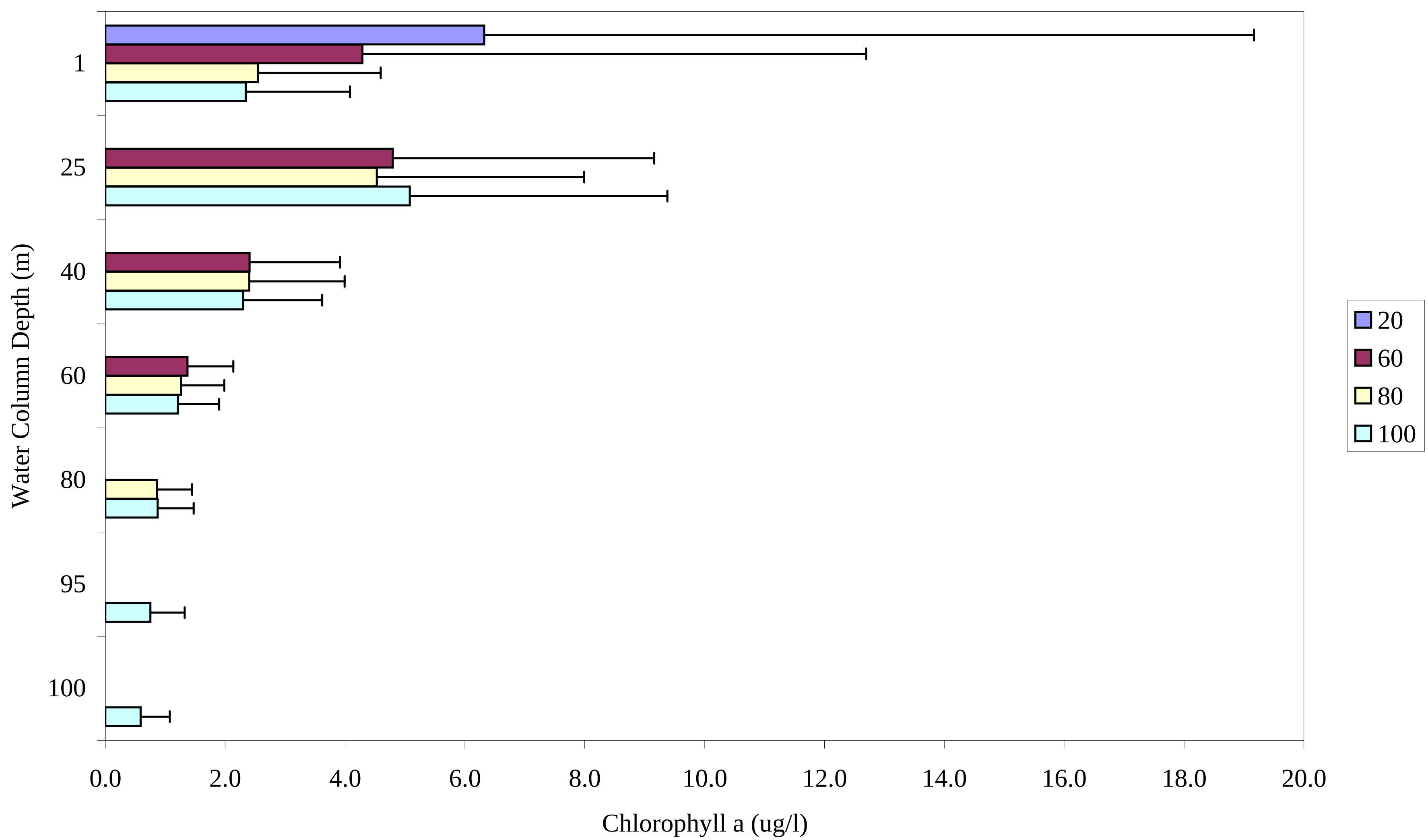


Figure A-27. Average species richness of benthic macrofauna per 0.1 m^2 in sediment at 98 meter B and E stations during July (1991-2006).

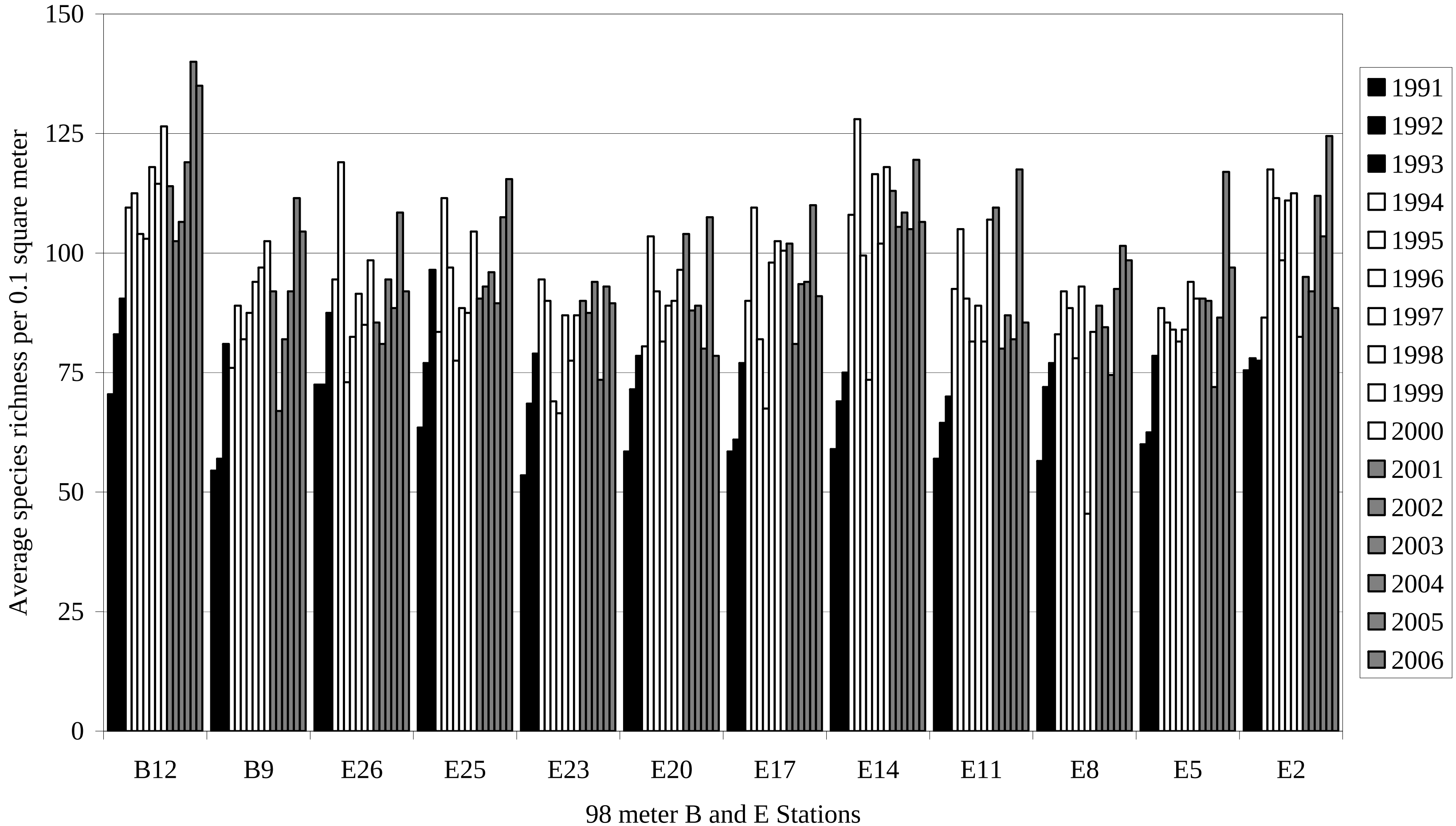


Figure A-28. Average total abundance of benthic macrofauna taxa per 0.1 m^2 in sediment at 98 meter B and E stations during July (1991-2006).

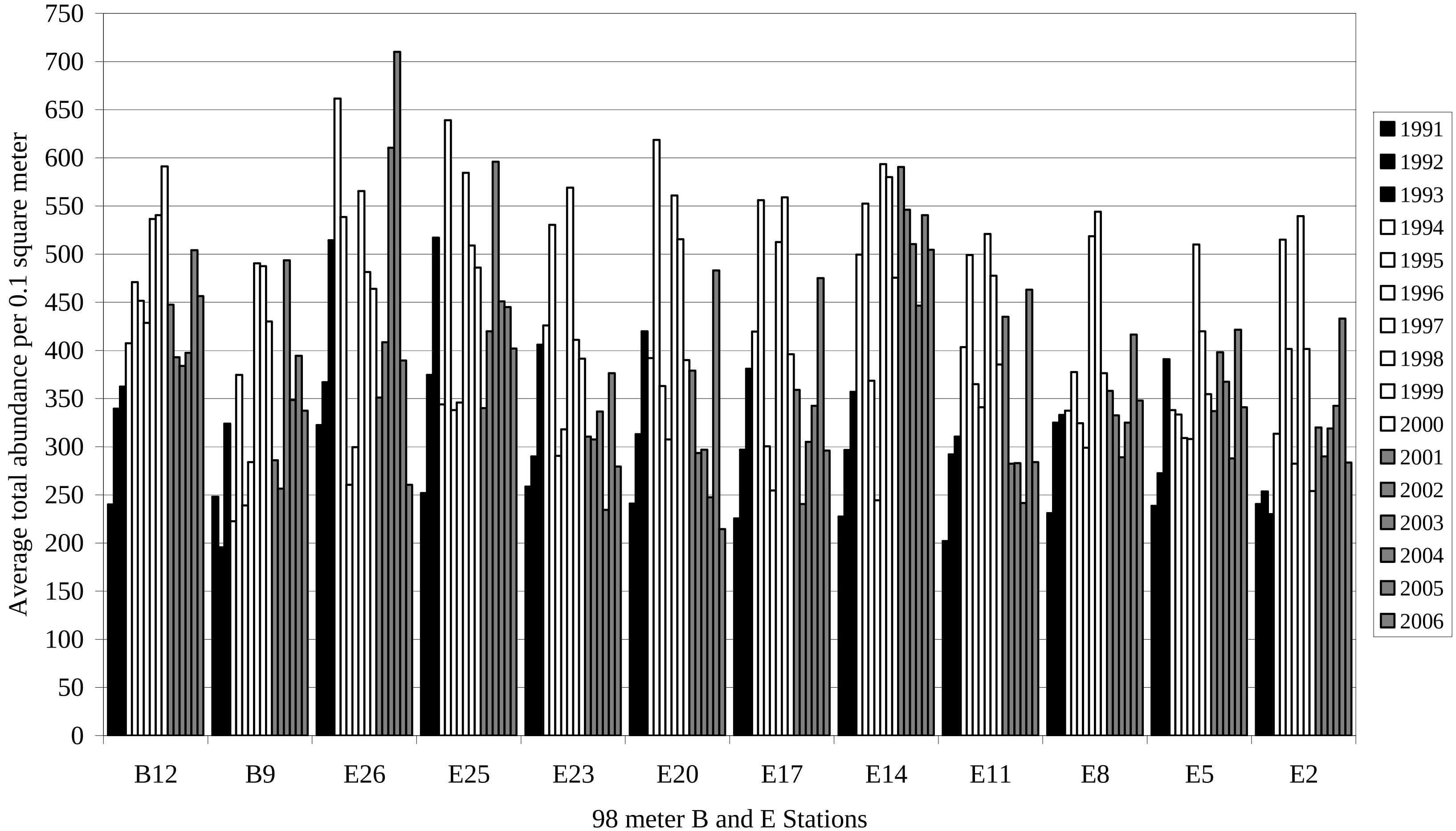


Figure A-29. Average abundance of *Amphiodia* spp. per 0.1 m^2 in sediment at 98 meter B and E stations during July (1991-2006).

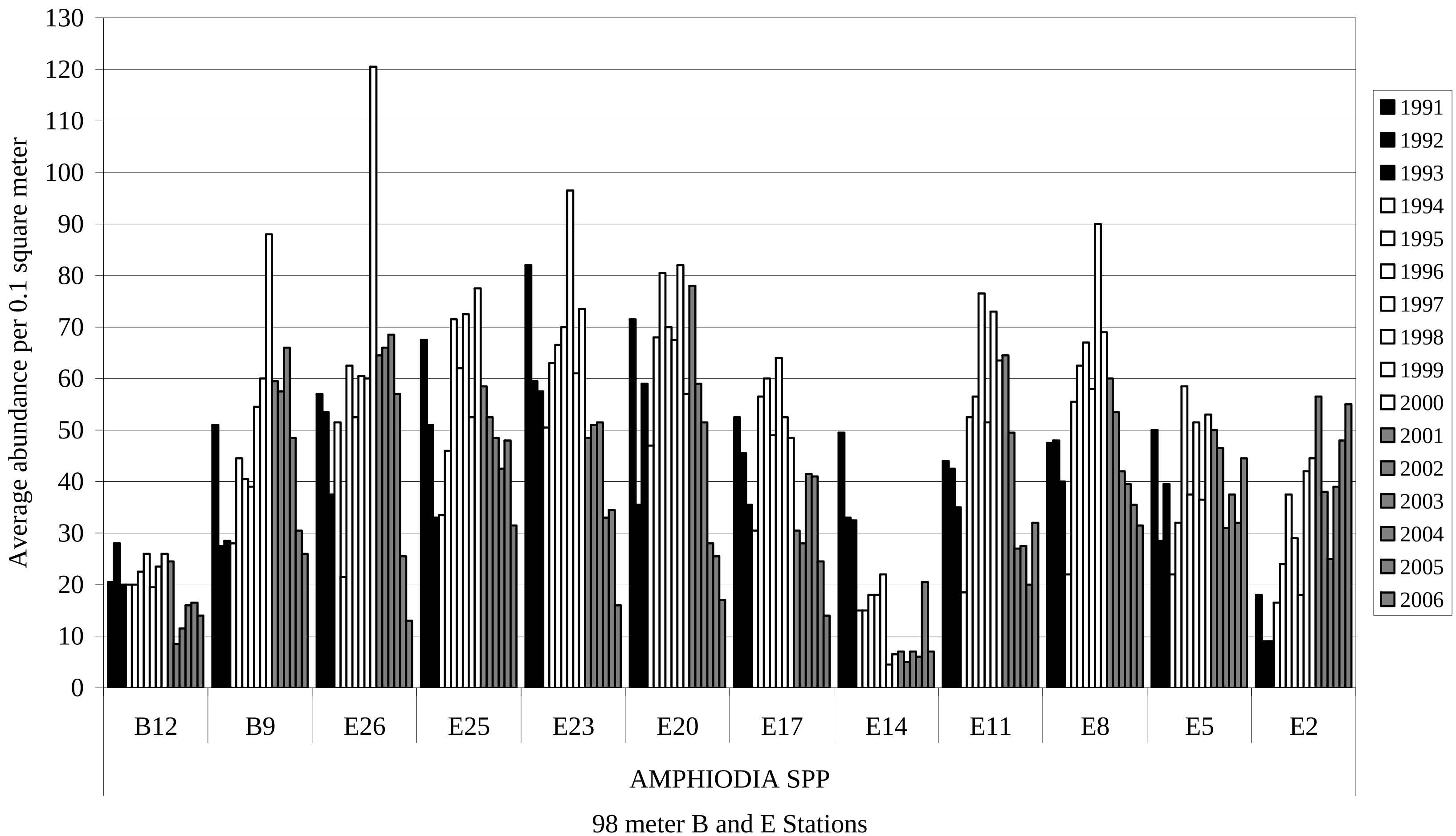


Figure A-30. Average abundance of *Euphilomedes* spp. per 0.1 m^2 in sediment at 98 meter B and E stations during July (1991-2006).

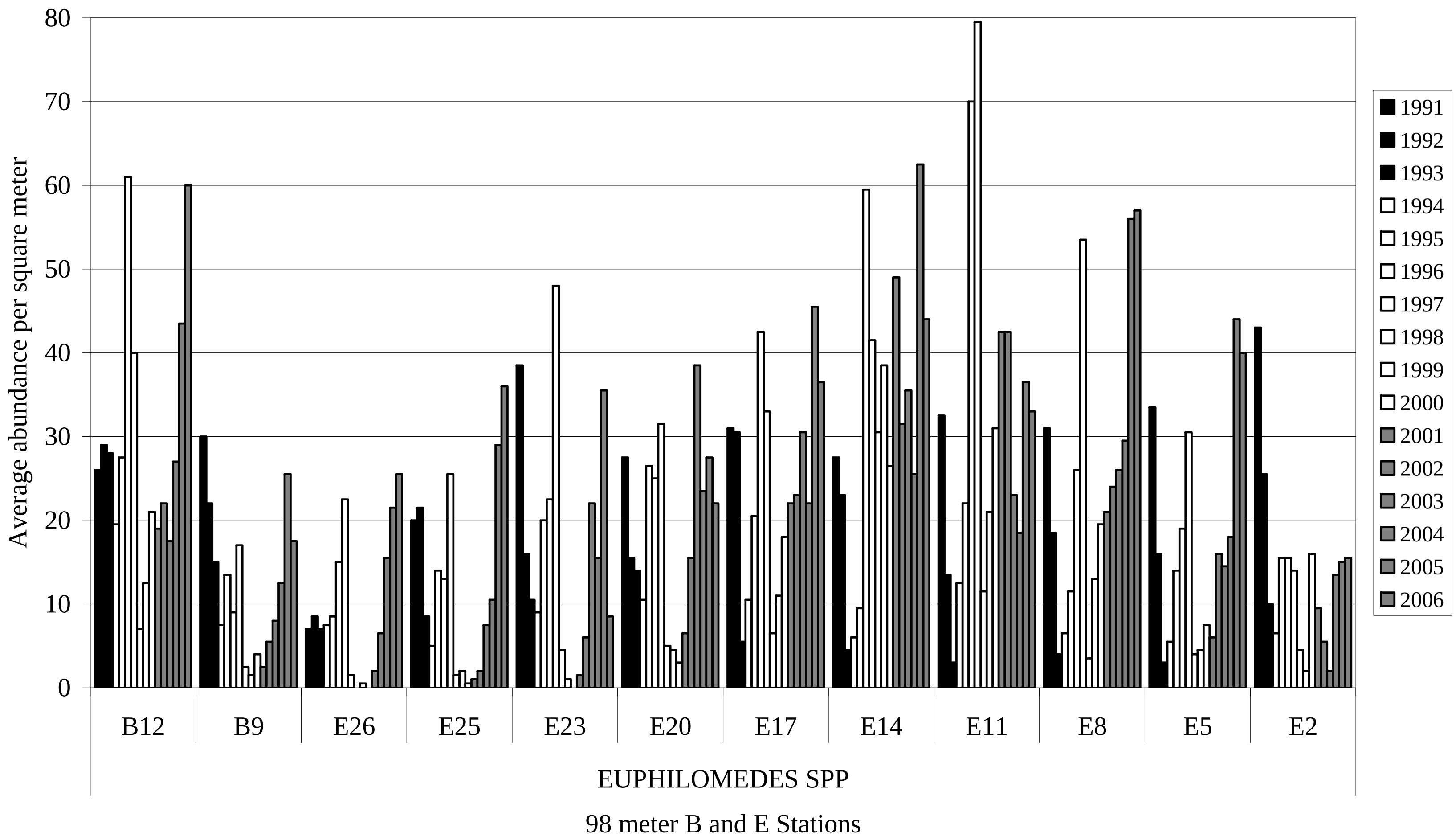


Figure A-31. Average abundance of *Parvilucina tenuisculpta* per 0.1 meter^2 in sediment at 98 meter B and E stations during July (1991-2006).

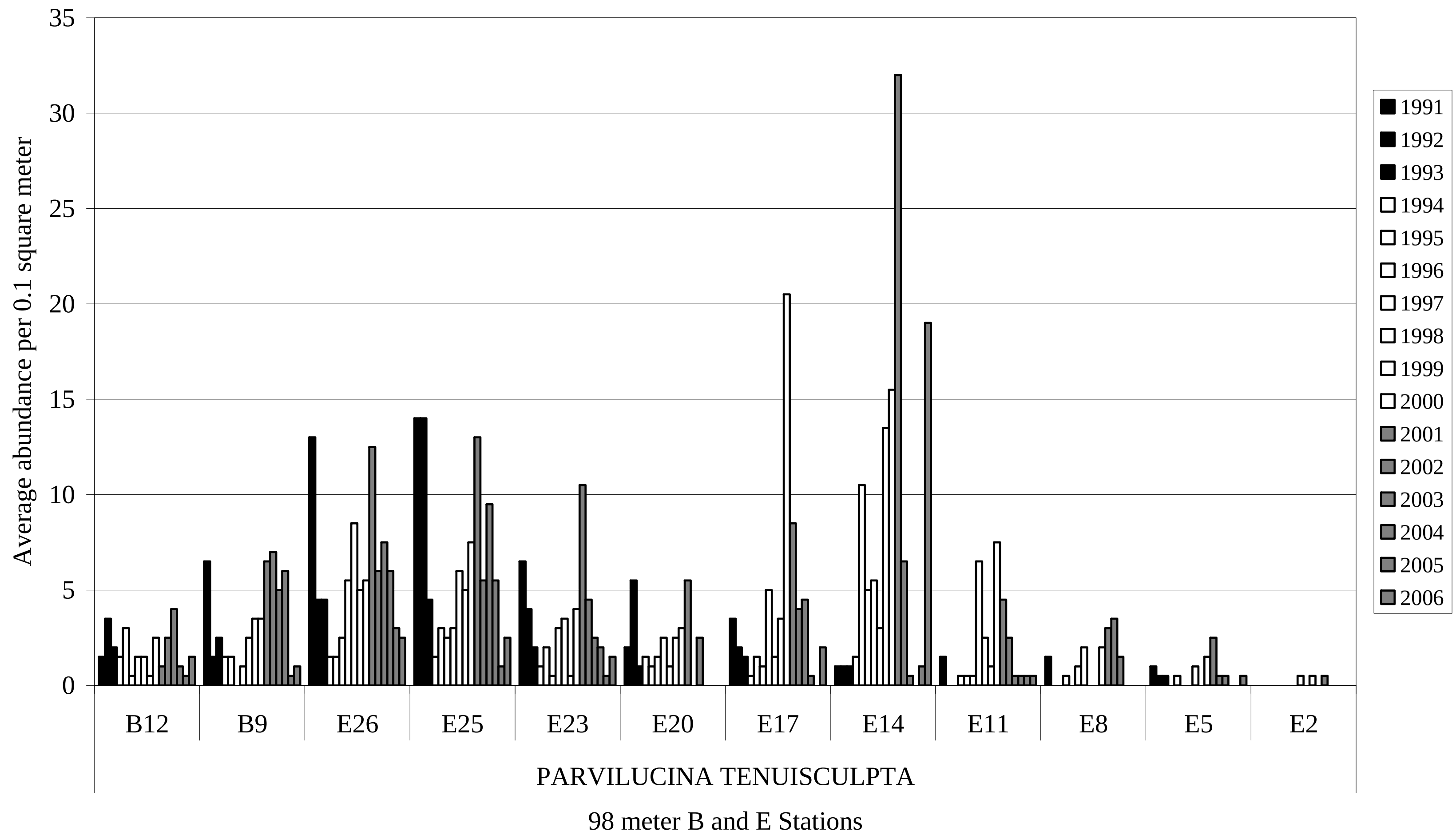


Figure A-32. Average abundance of *Capitella "capitata"* (=species complex) per 0.1 m^2 in sediment at 98 meter B and E stations during July (1991-2006).

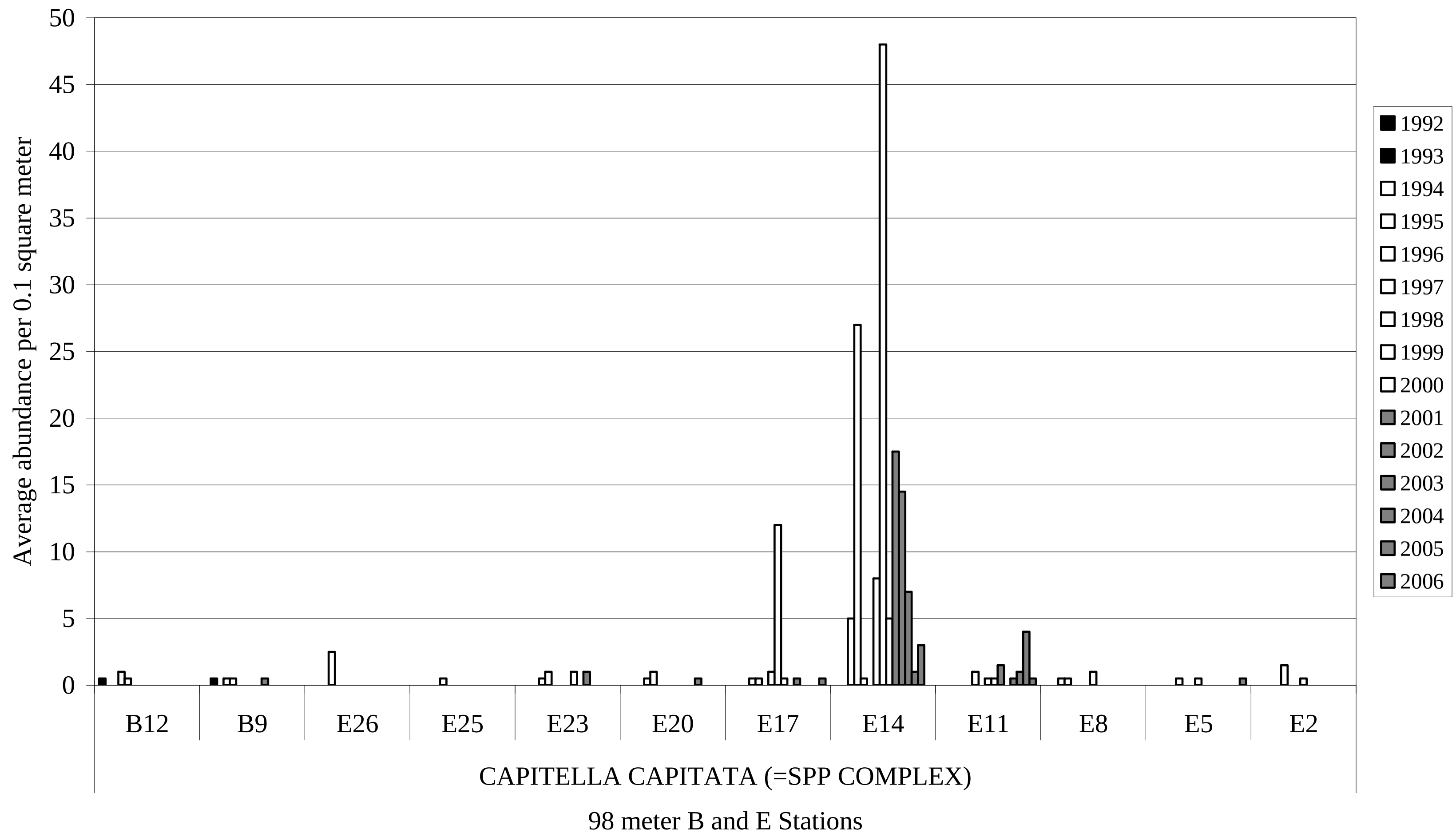


Figure A-33. Map of trawl fishing zones and rig fishing monitoring station locations in offshore area.

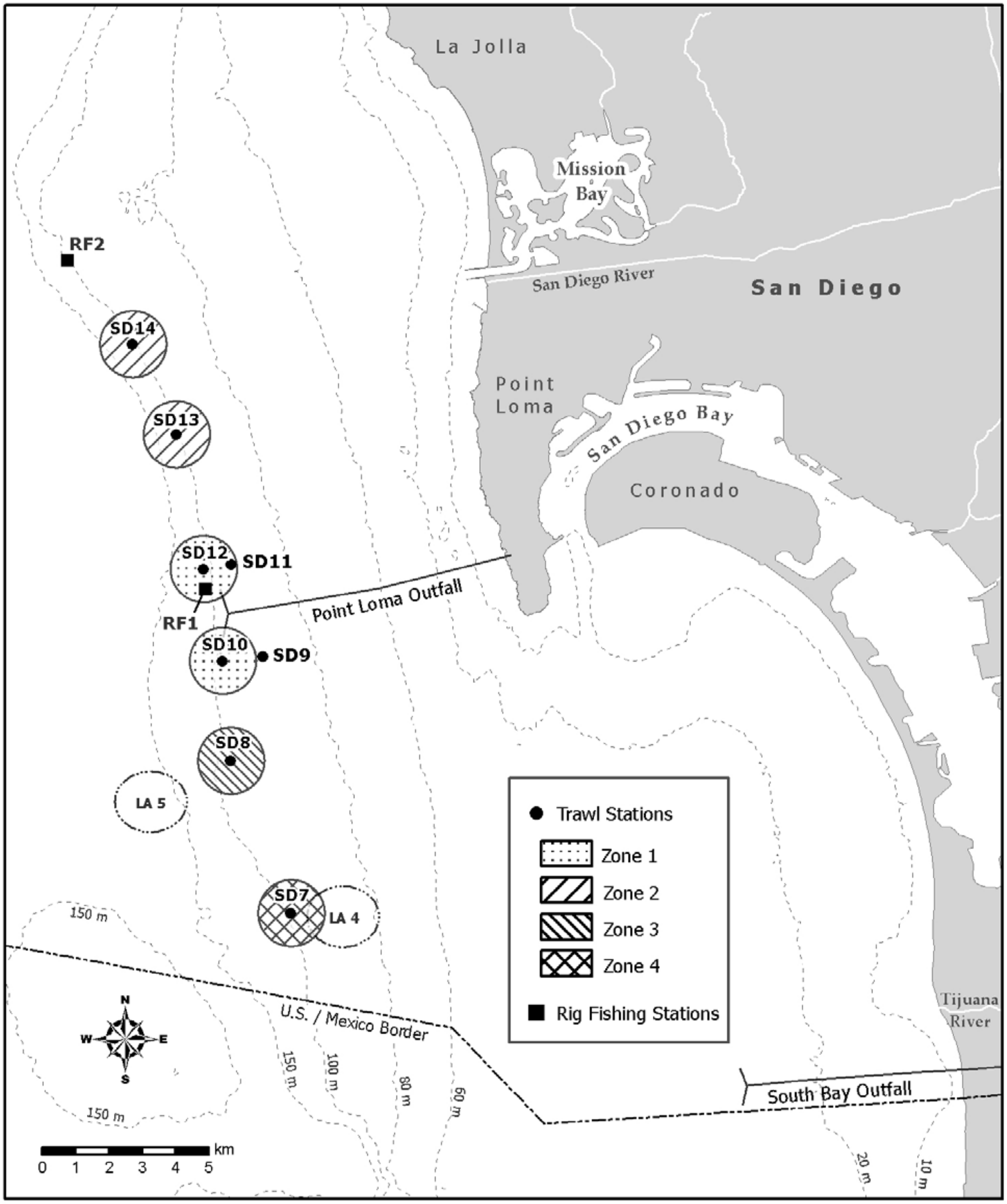


Figure A-34. Average arsenic concentrations in flatfish liver at 98 meter trawl fishing zone (TFZ) stations during October (1995-2006).

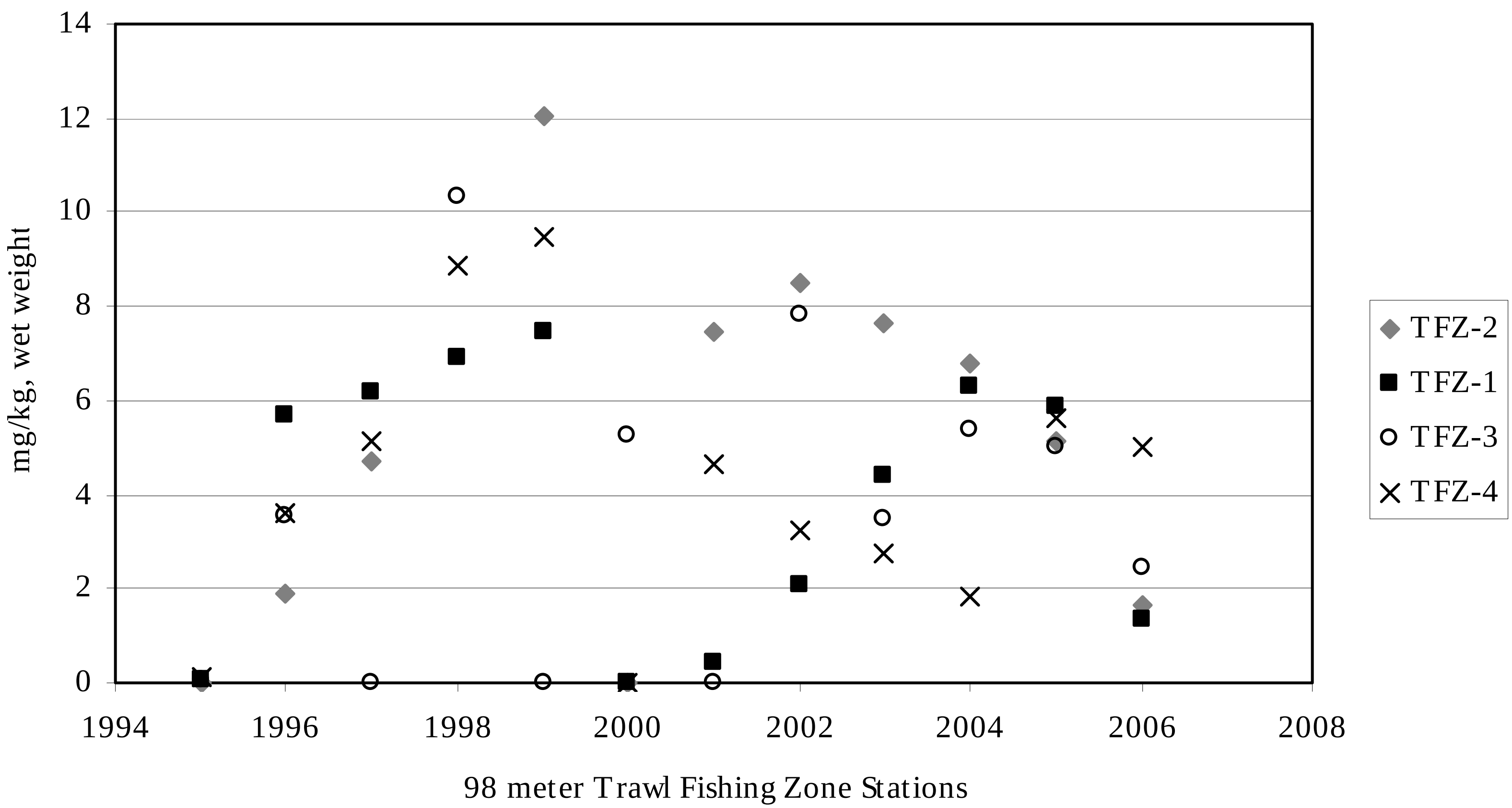


Figure A-35. Average mercury concentrations in flatfish liver at 98 meter trawl fishing zone (TFZ) stations during October (1995-2006).

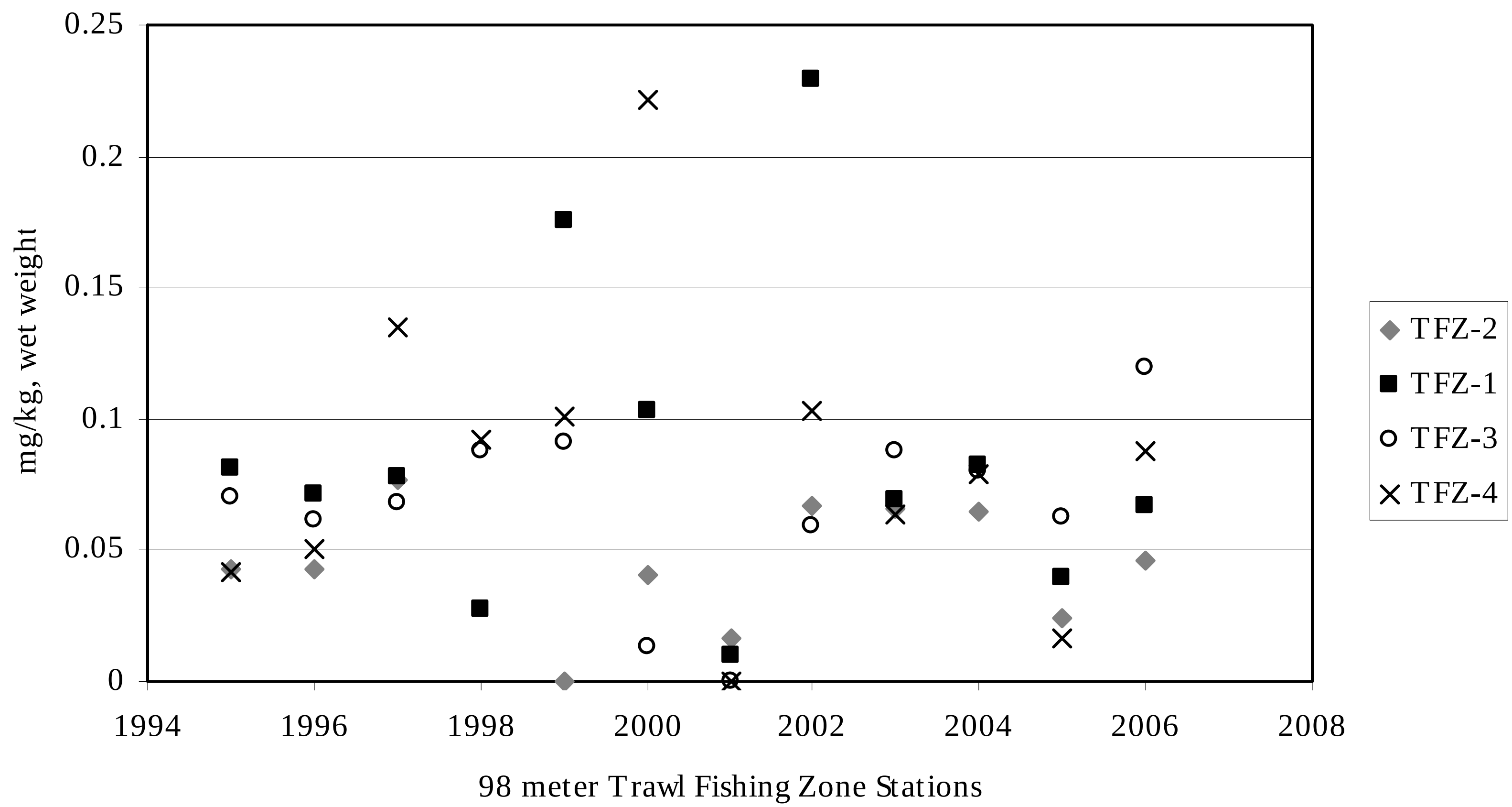


Figure A-36. Average selenium concentrations in flatfish liver at 98 meter trawl fishing zone (TFZ) stations during October (1995-2006).

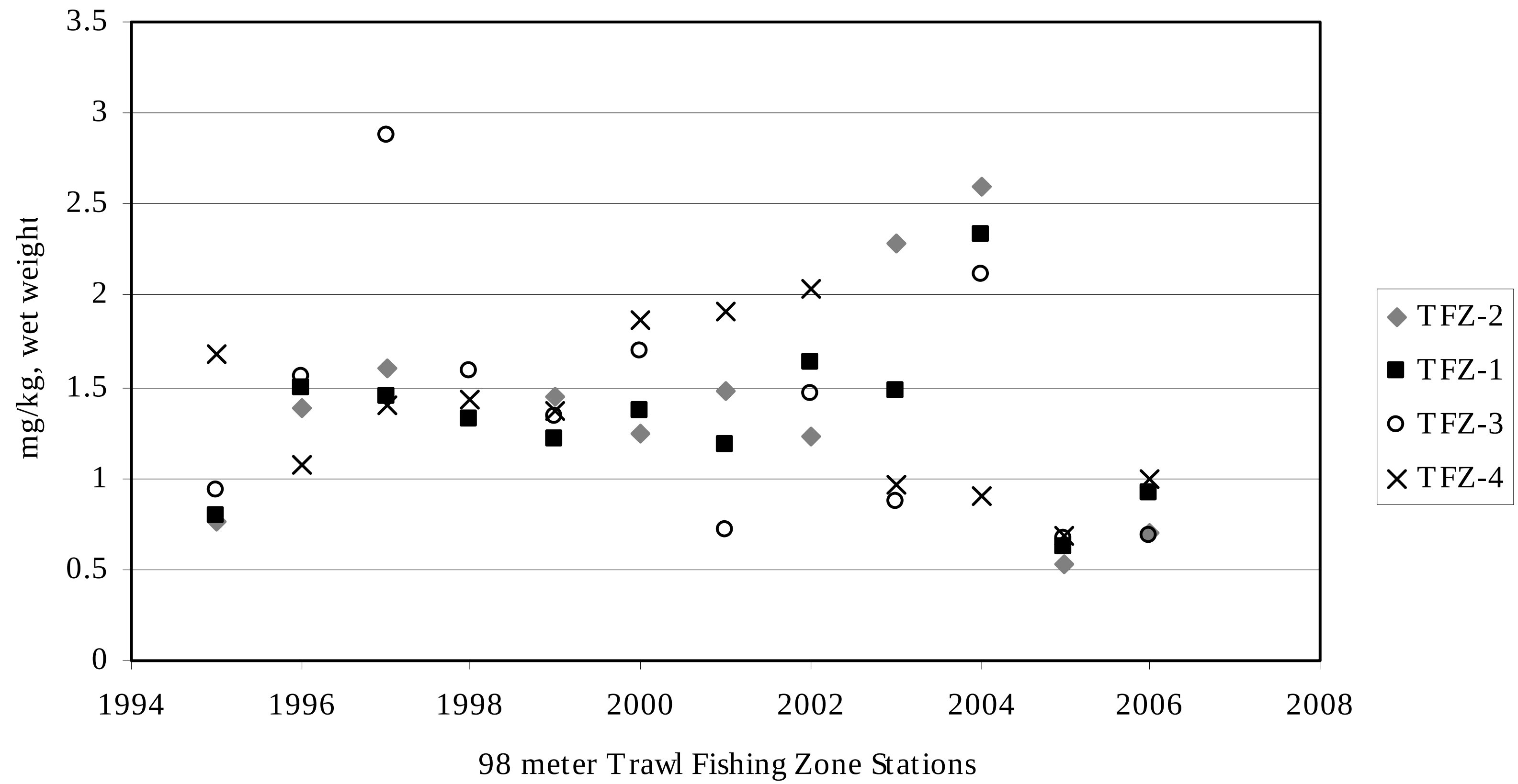


Figure A-37. Average hexachlorobenzene concentrations in flatfish liver at 98 meter trawl fishing zone (TFZ) stations during October (1995-2006).

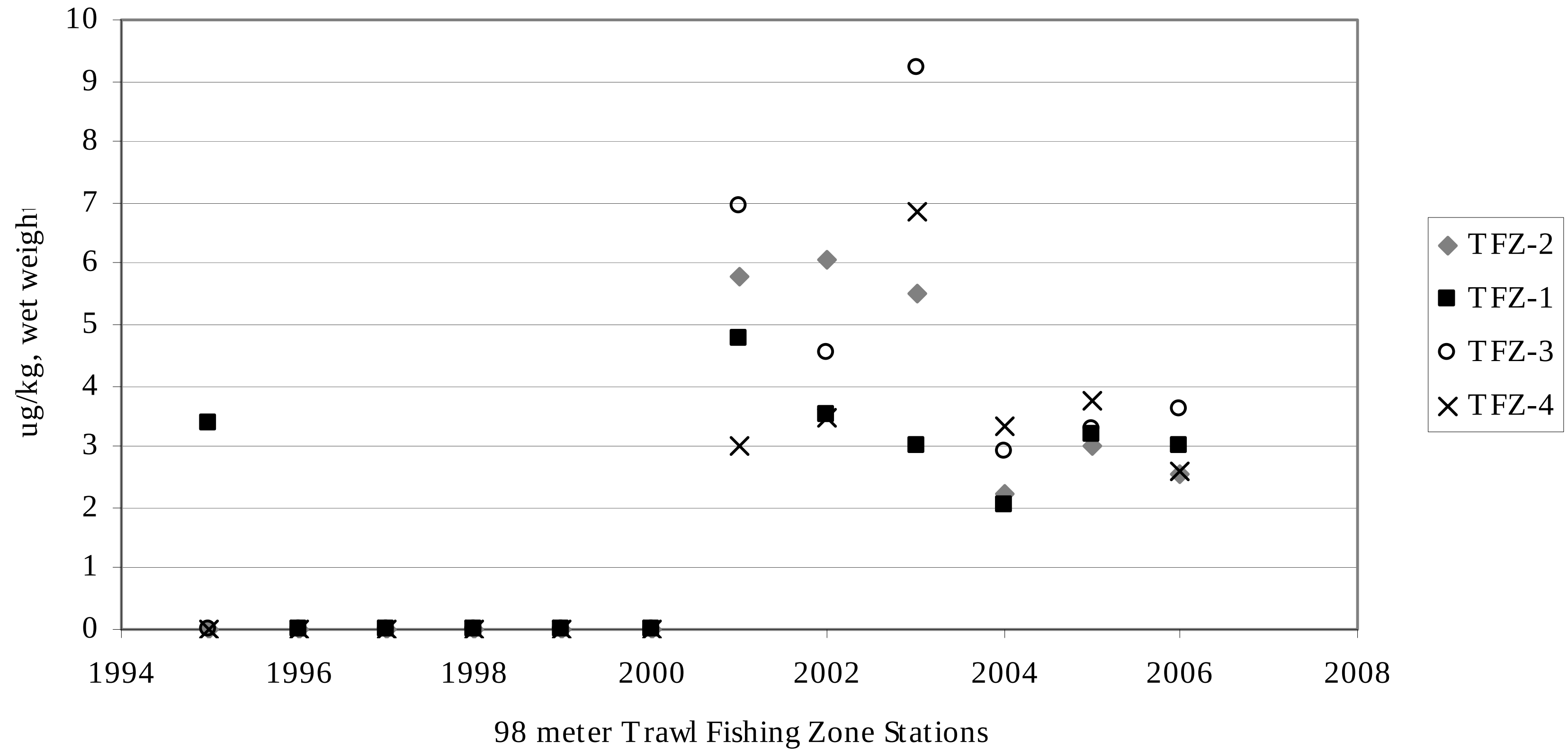


Figure A-38. Average total chlordane concentrations in flatfish liver at 98 meter trawl fishing zone (TFZ) stations during October (1995-2006).

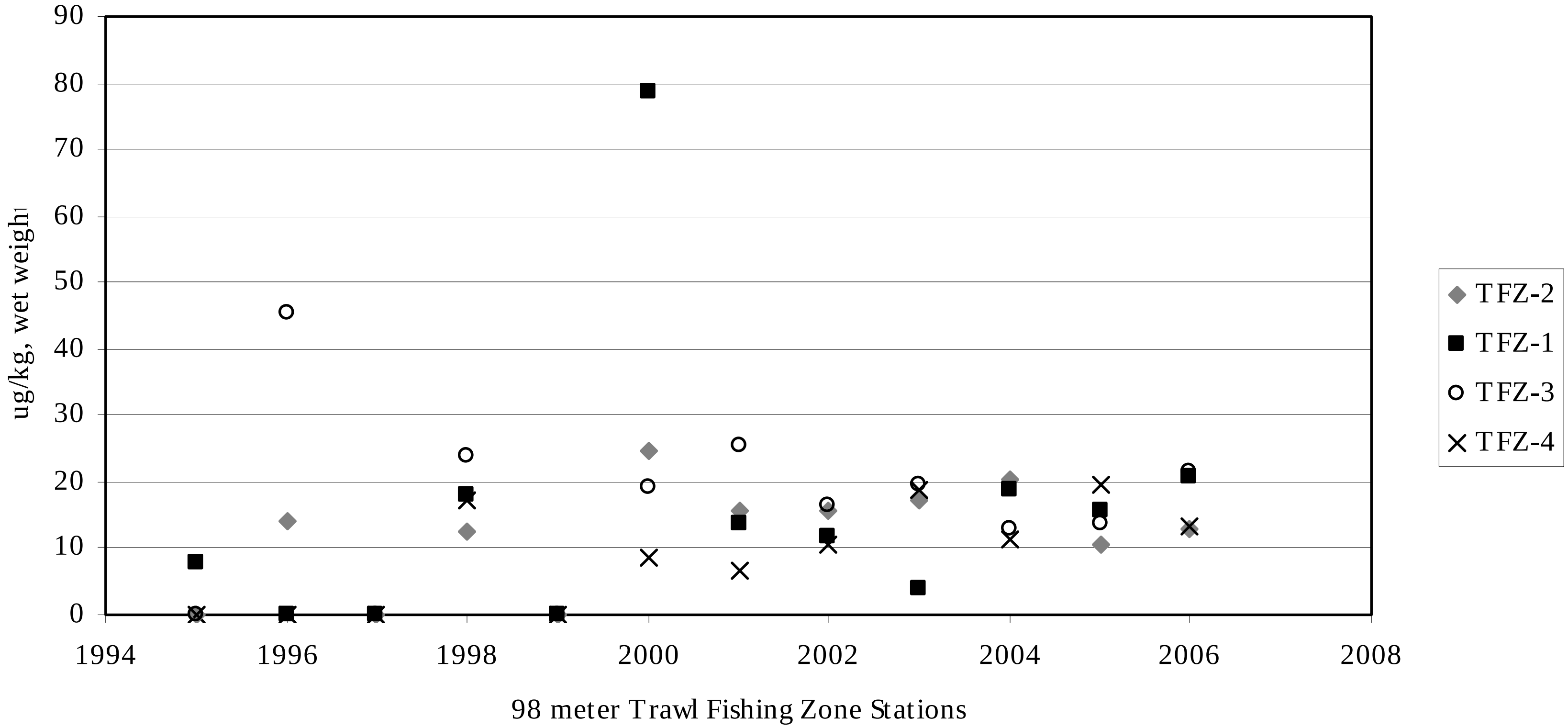


Figure A-39. Average total DDT concentrations in flatfish liver at 98 meter trawl fishing zone (TFZ) stations during October (1995-2006).

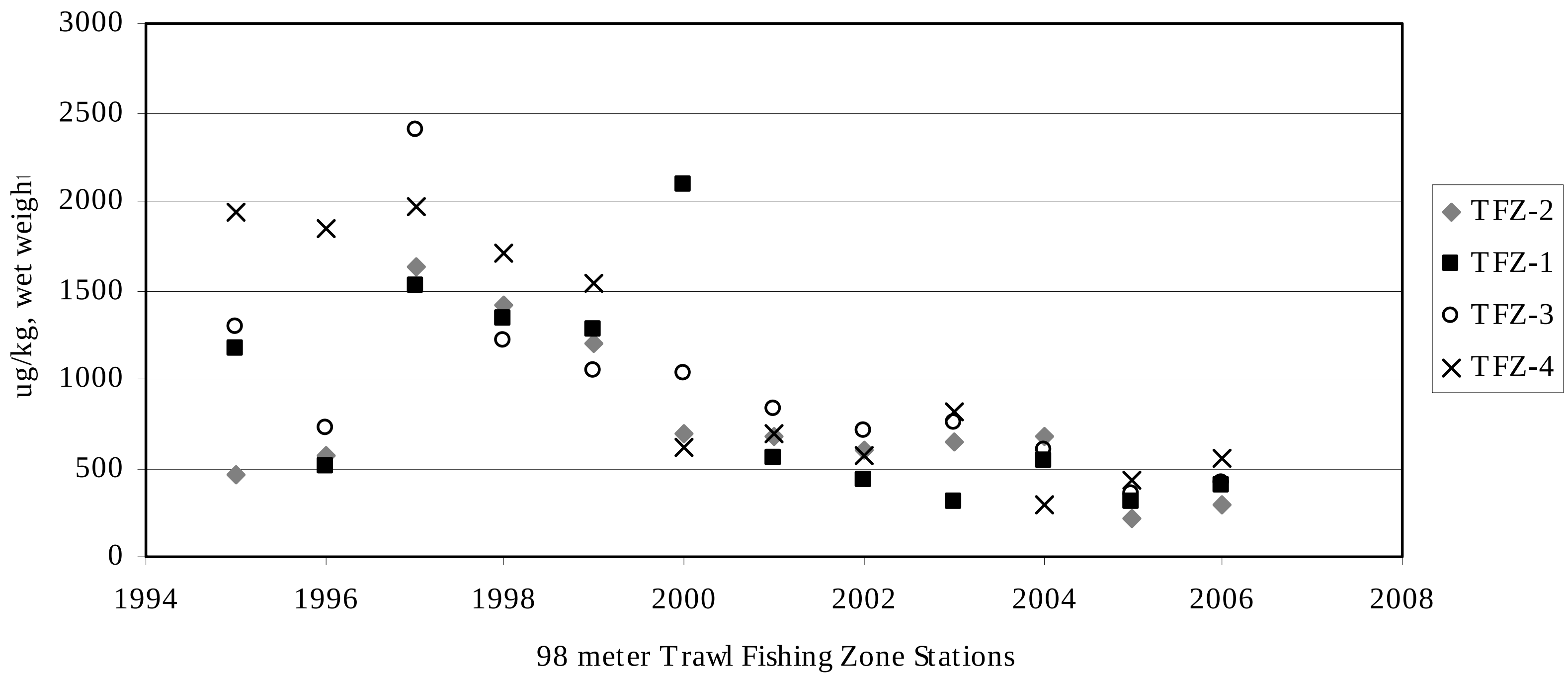


Figure A-40. Average total PCB concentrations in flatfish liver at 98 meter trawl fishing zone (TFZ) stations during October (1995-2006).

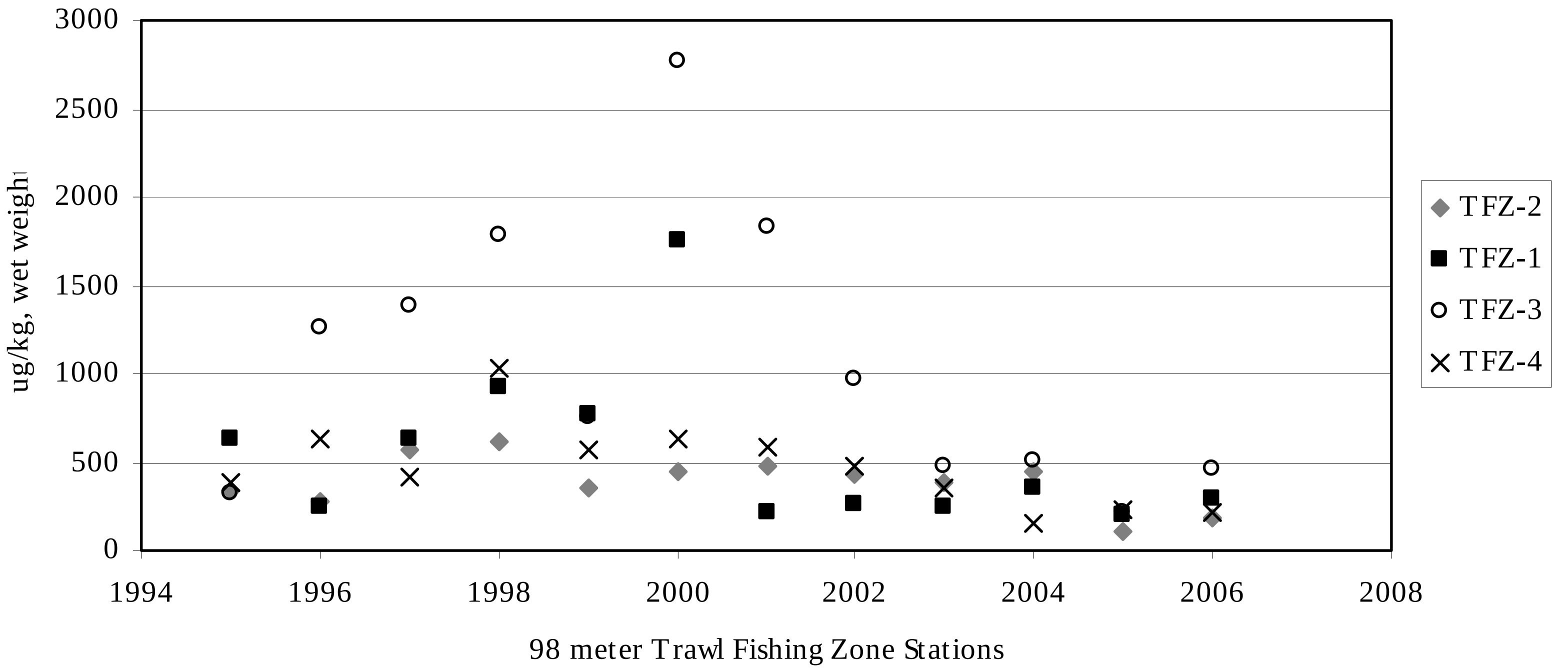


Figure A-41. Average arsenic concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

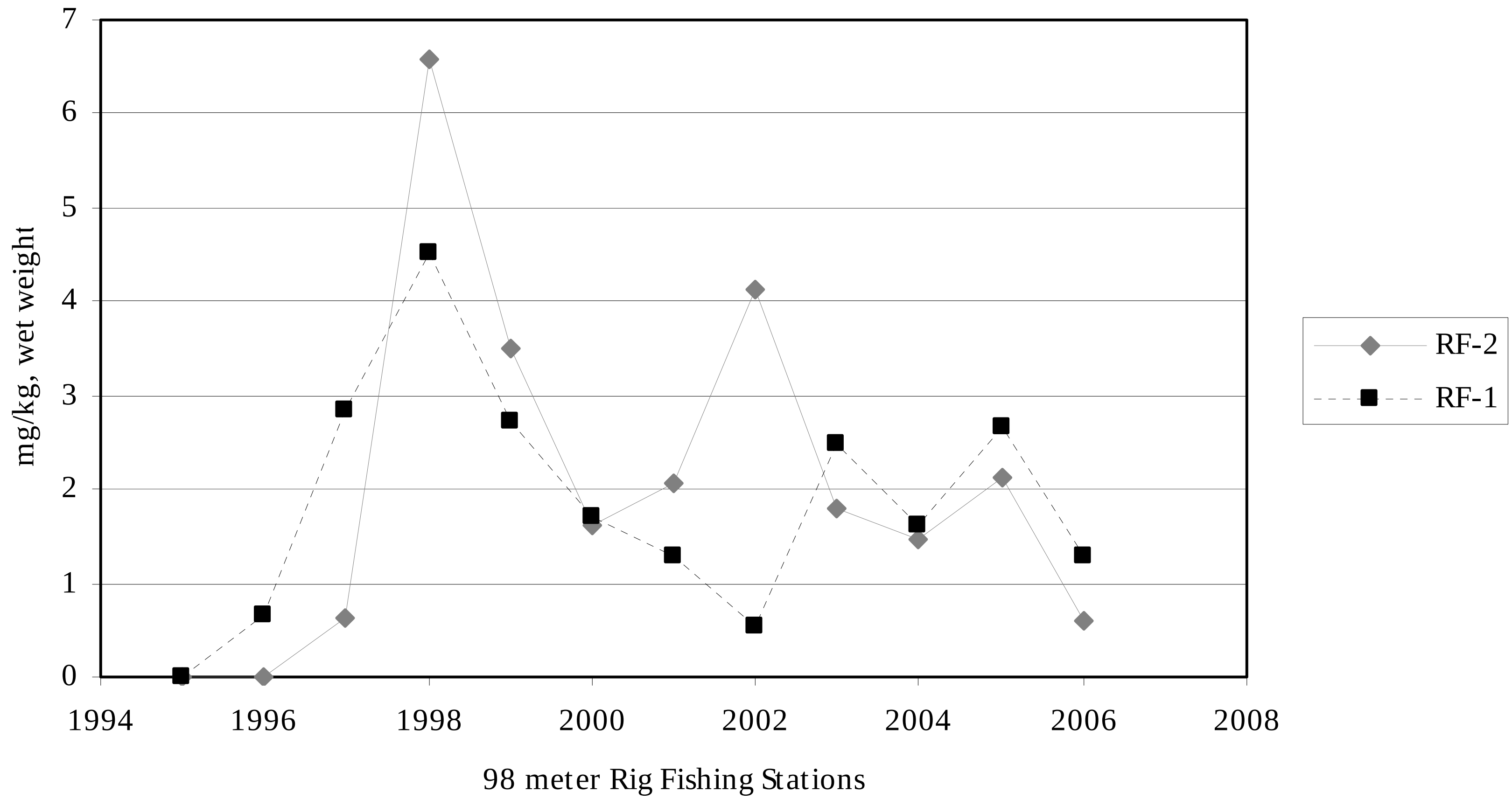


Figure A-42. Average cadmium concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

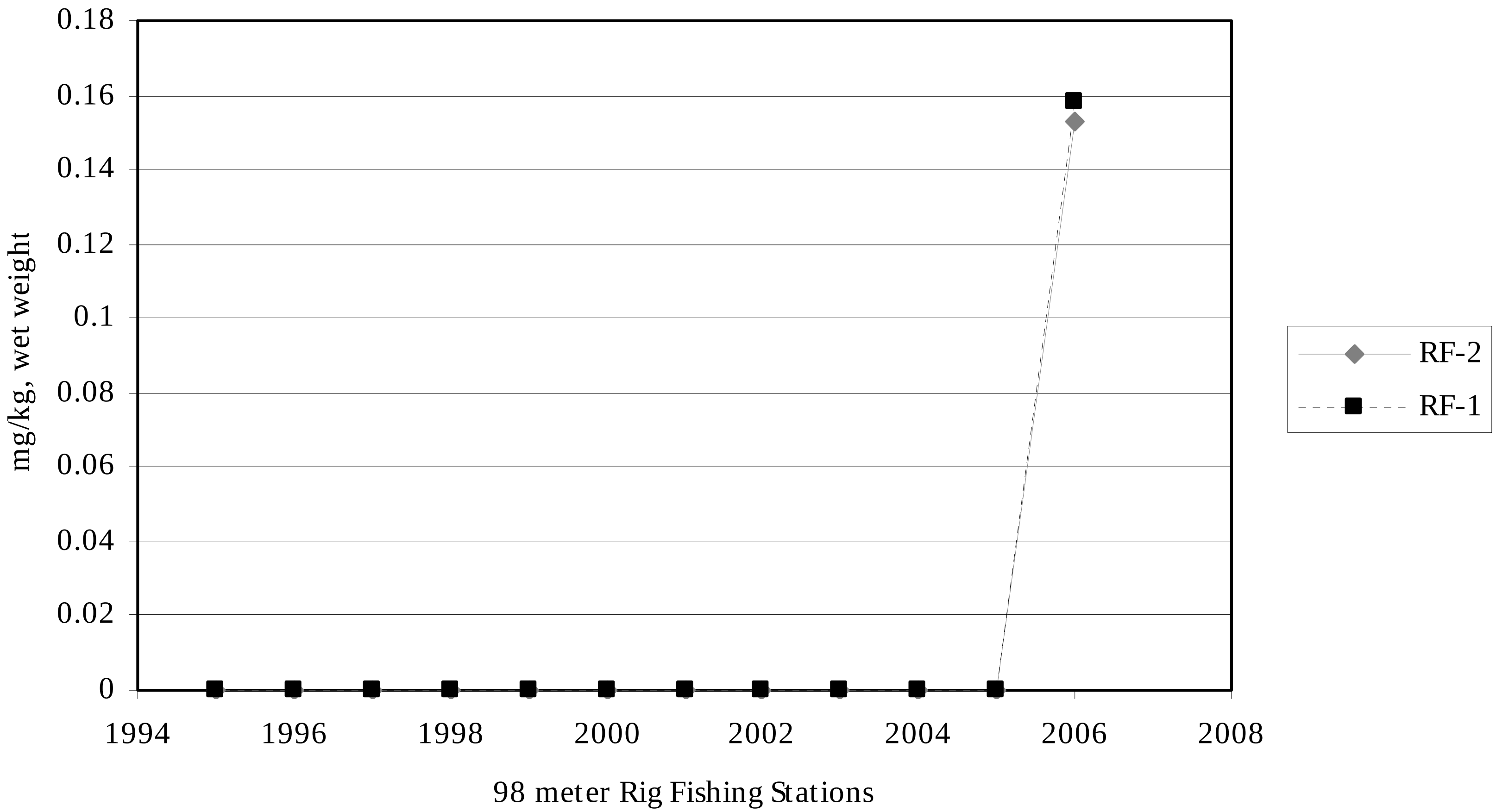


Figure A-43. Average chromium concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

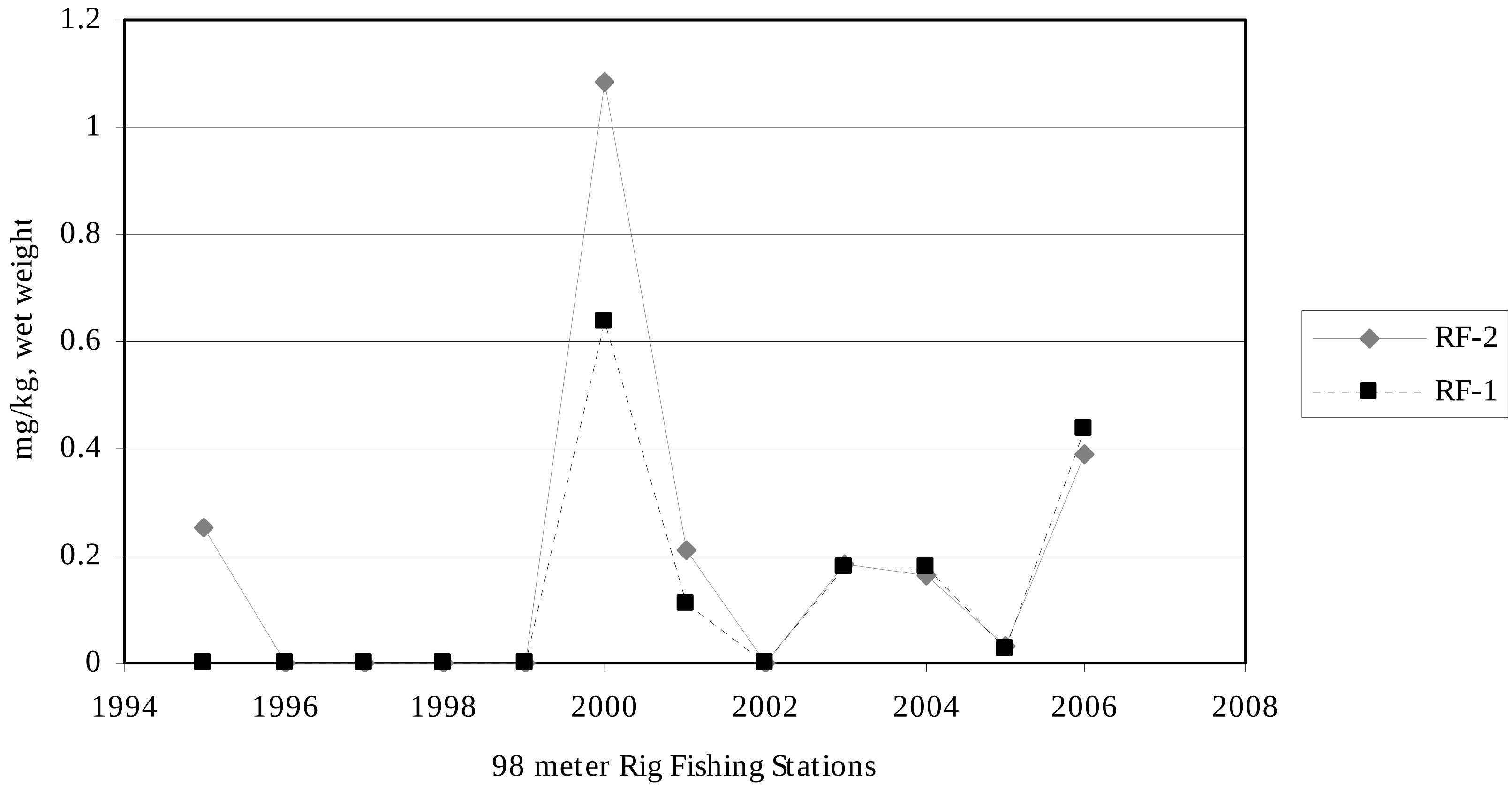


Figure A-44. Average copper concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

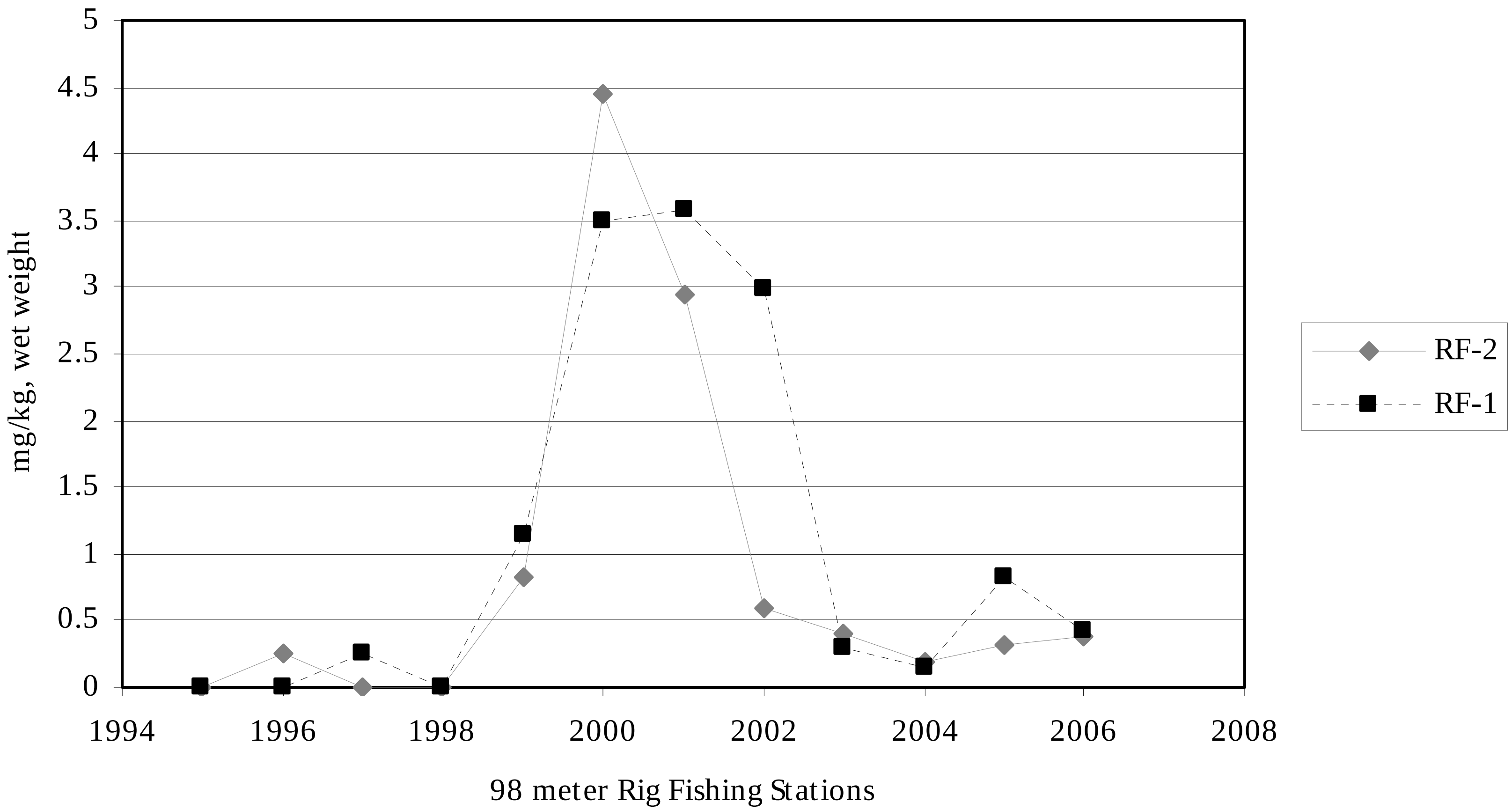


Figure A-45. Average lead concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

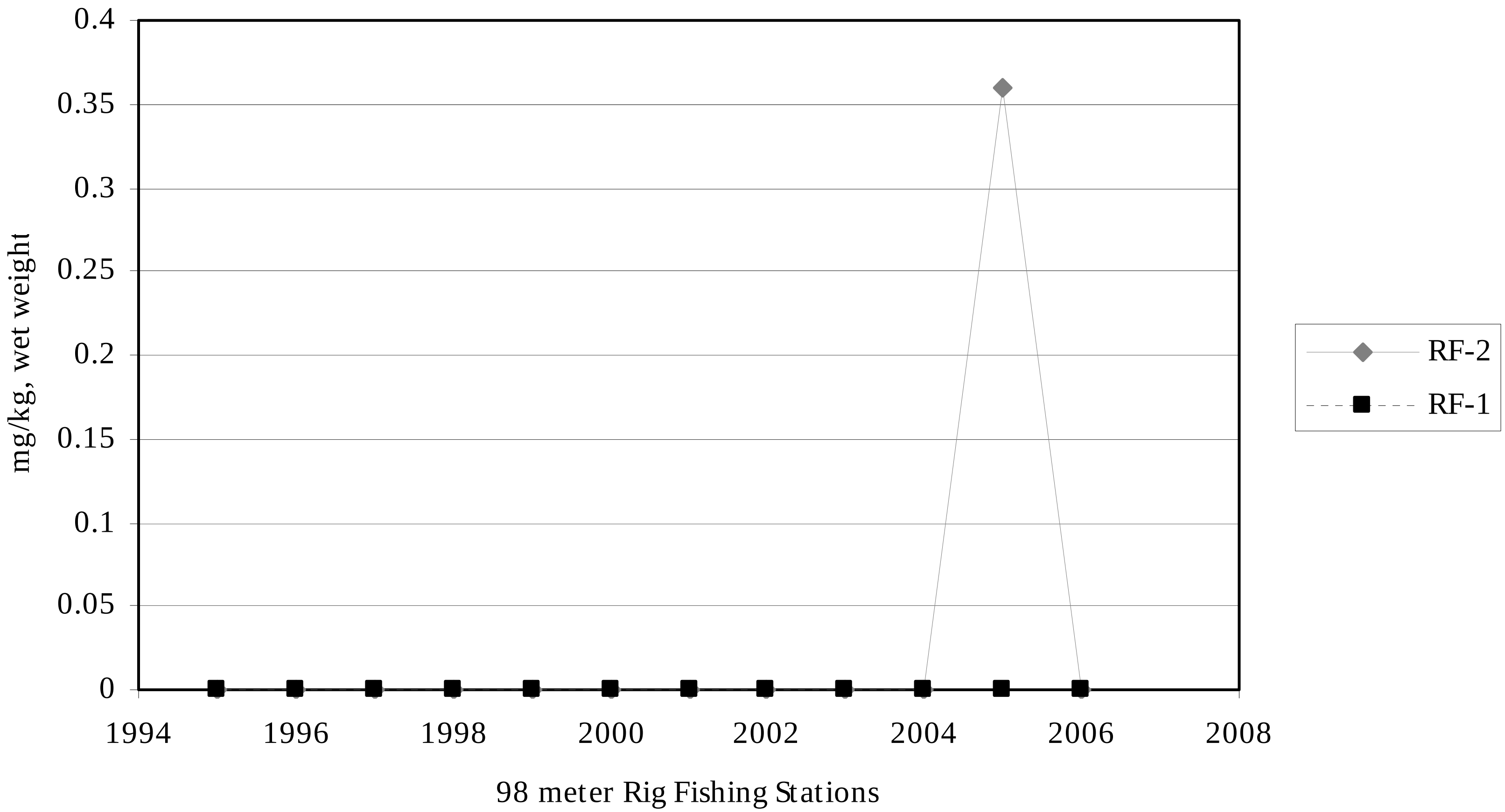


Figure A-46. Average mercury concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

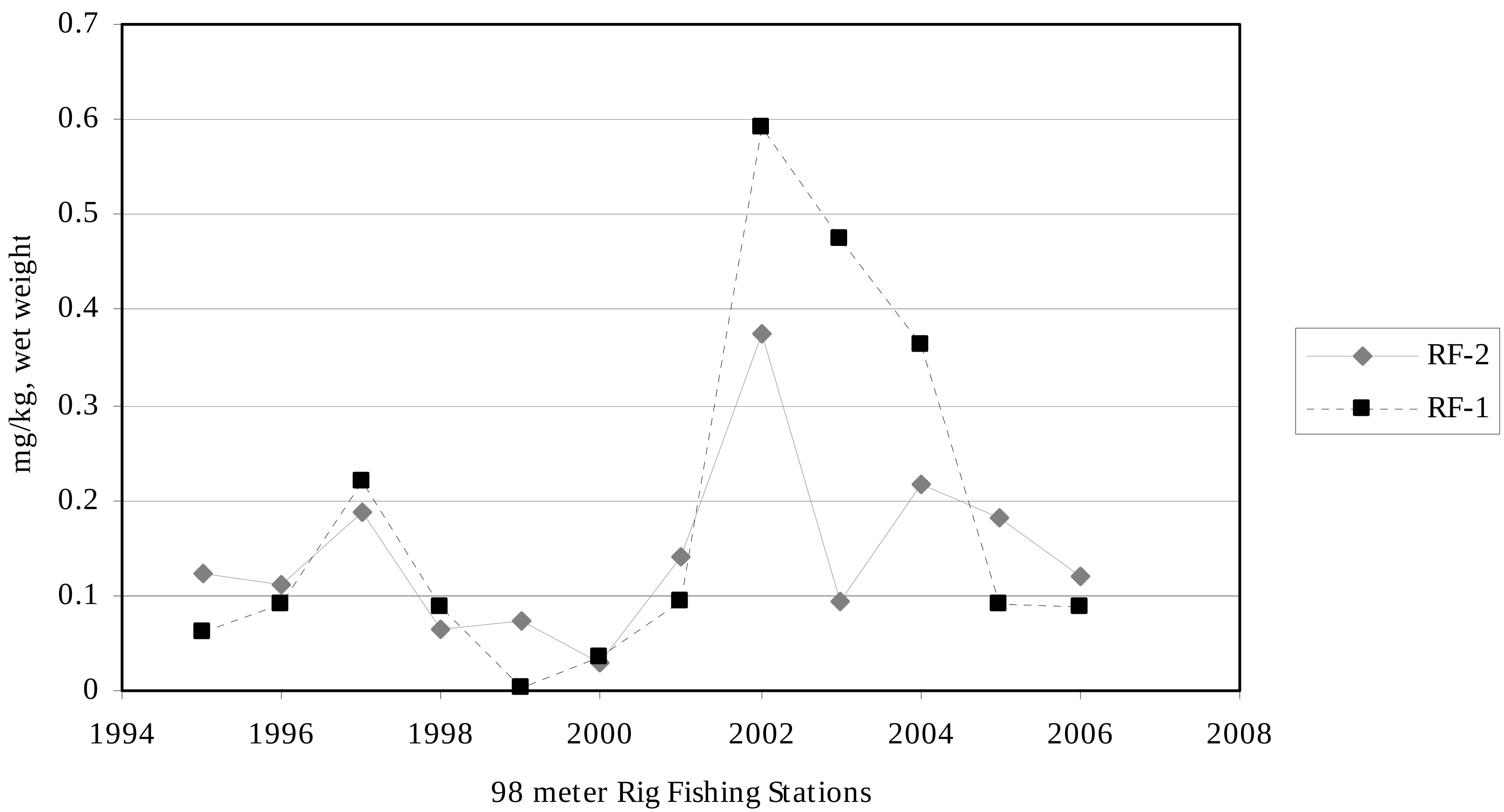


Figure A-47. Average nickel concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

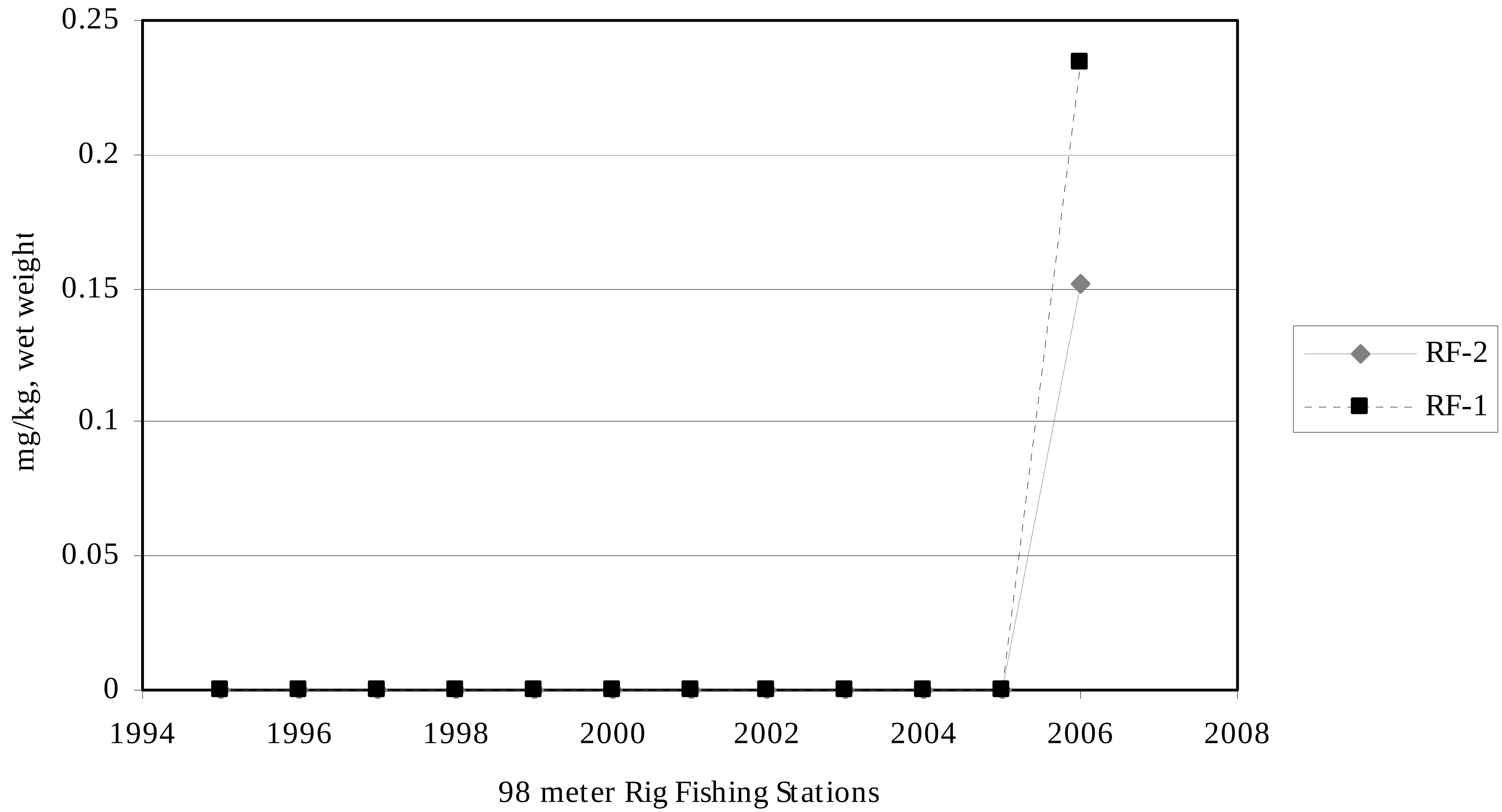


Figure A-48. Average selenium concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

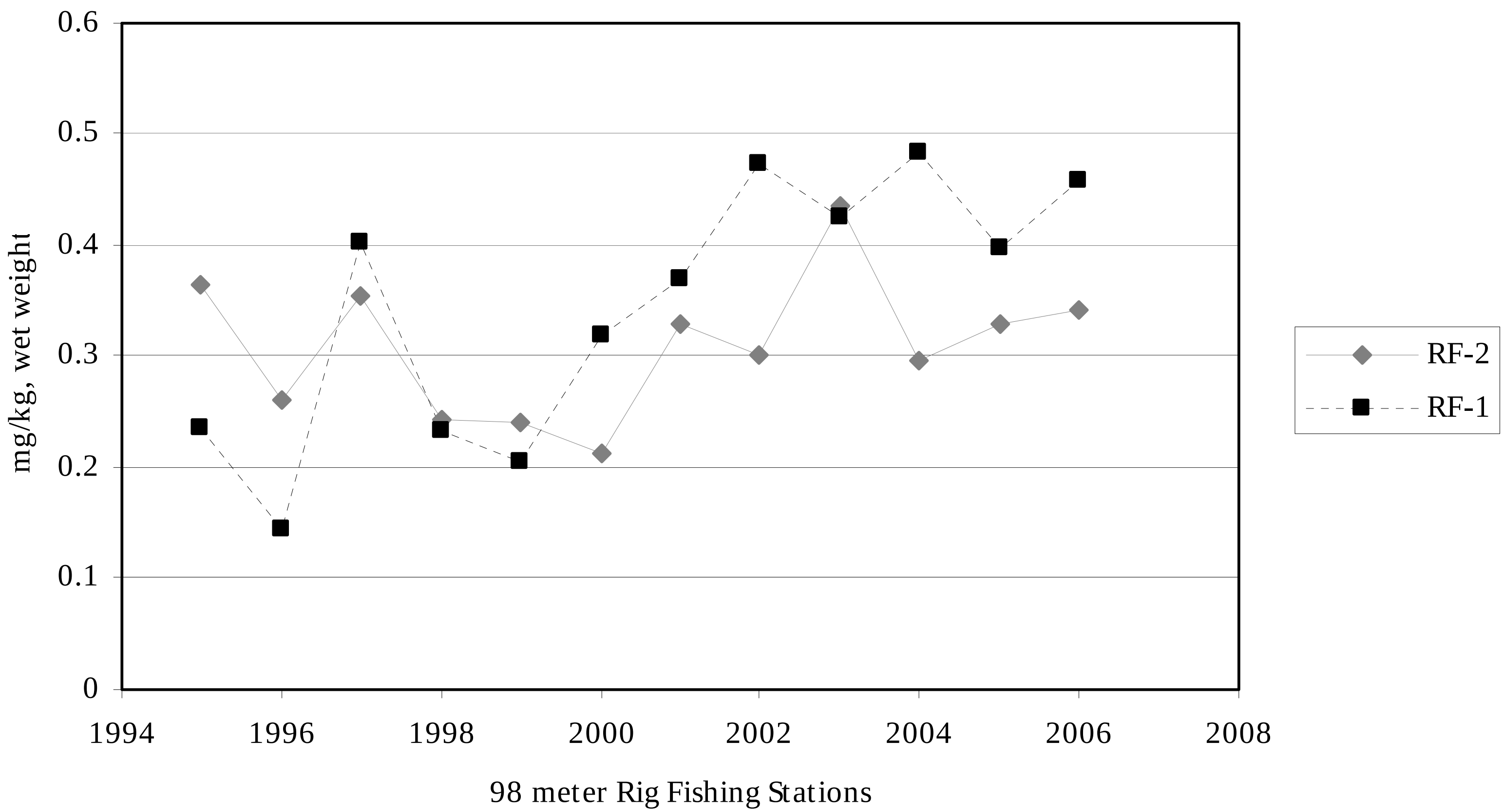


Figure A-49. Average silver concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

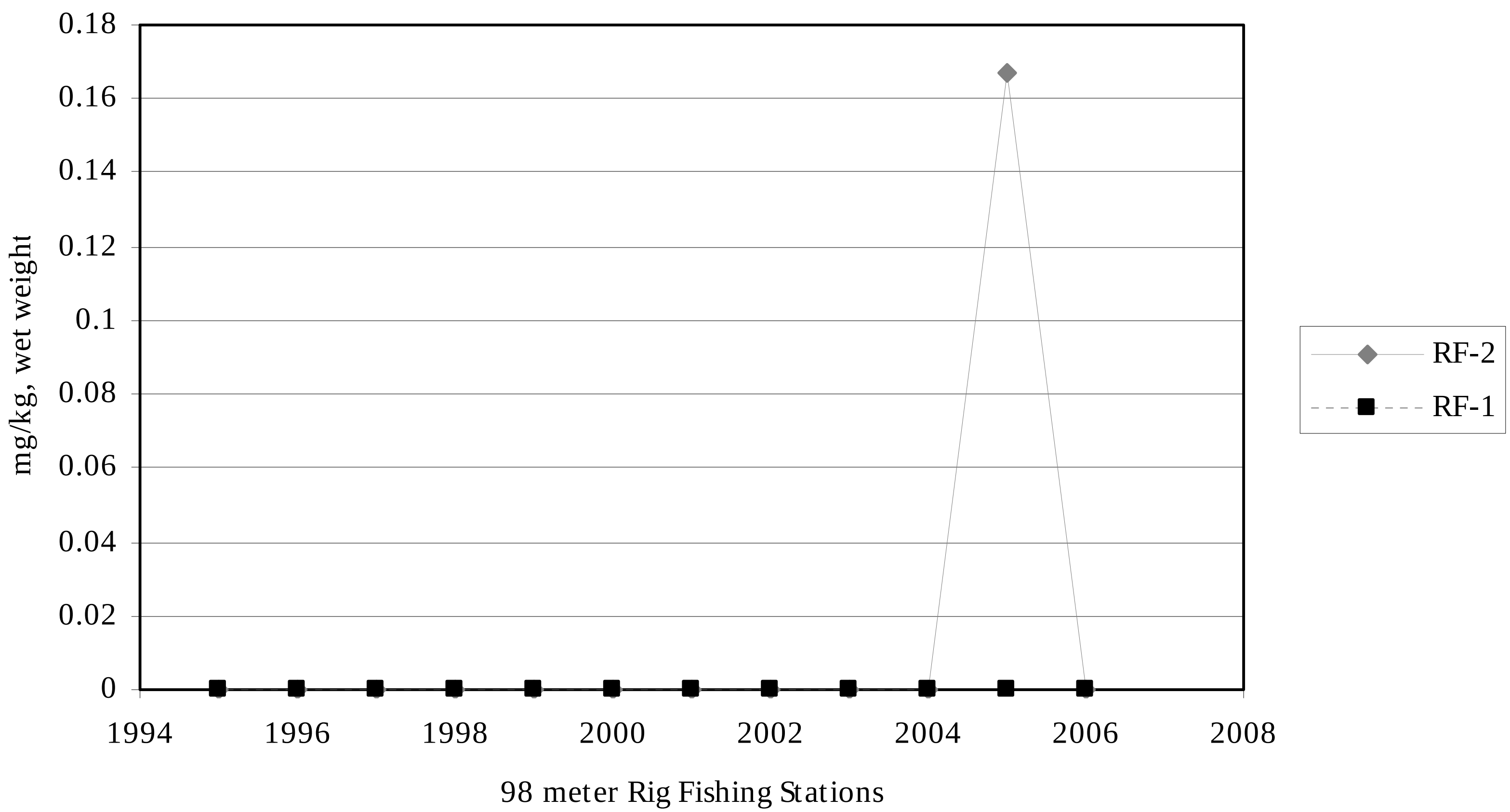


Figure A-50. Average tin concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

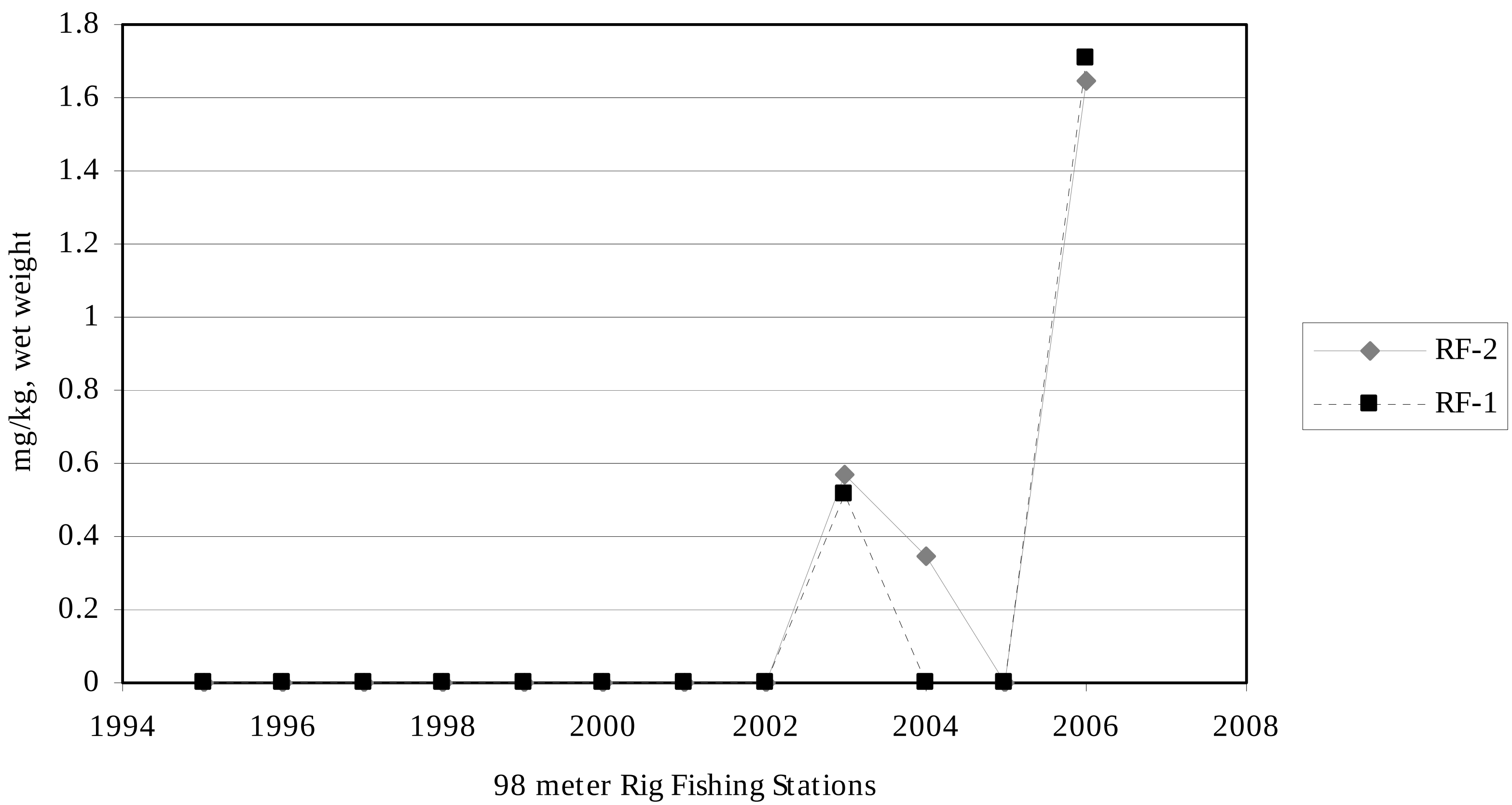


Figure A-51. Average zinc concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

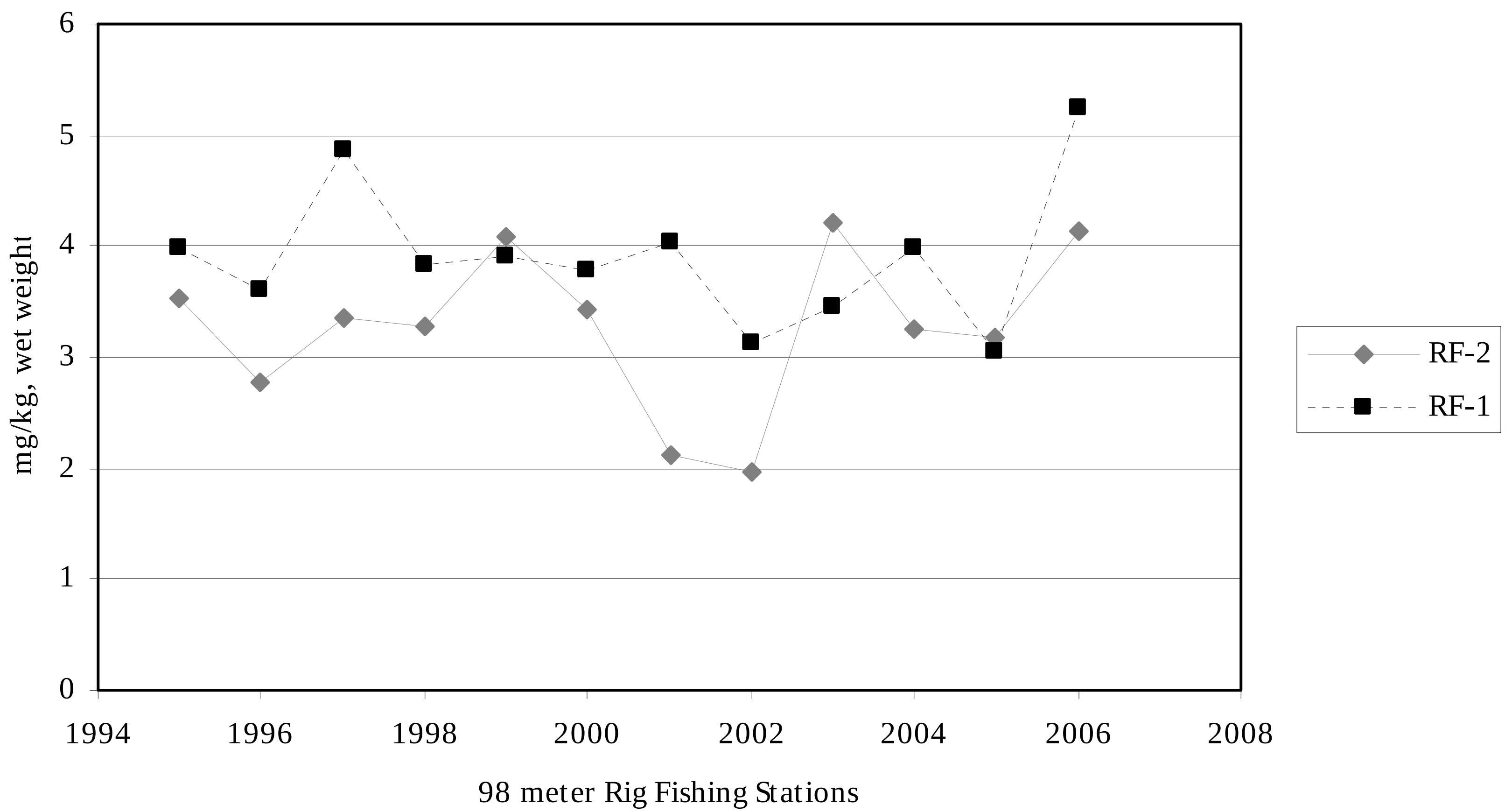


Figure A-52. Average hexachlorobenzene concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

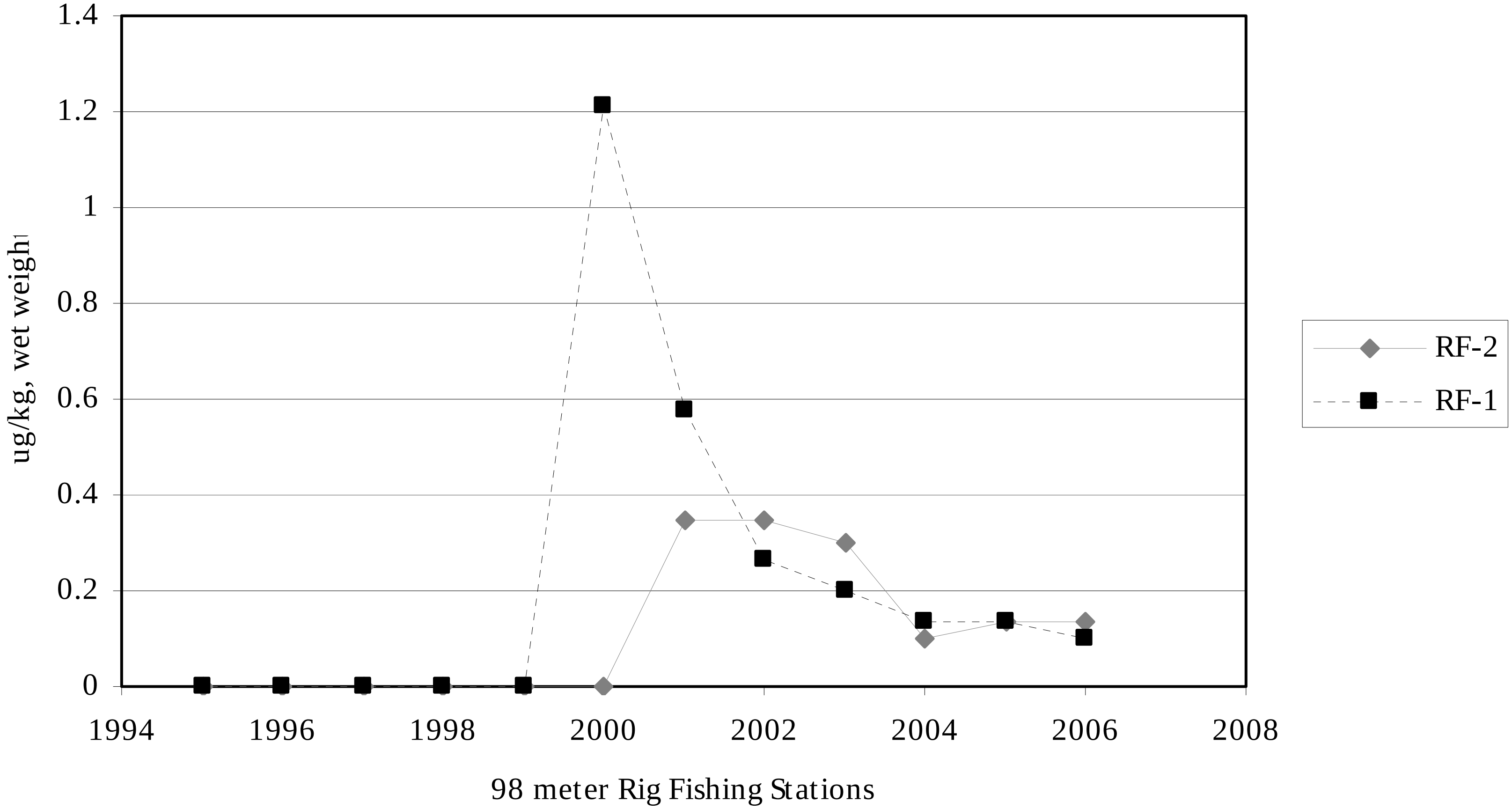


Figure A-53. Average total chlordane concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

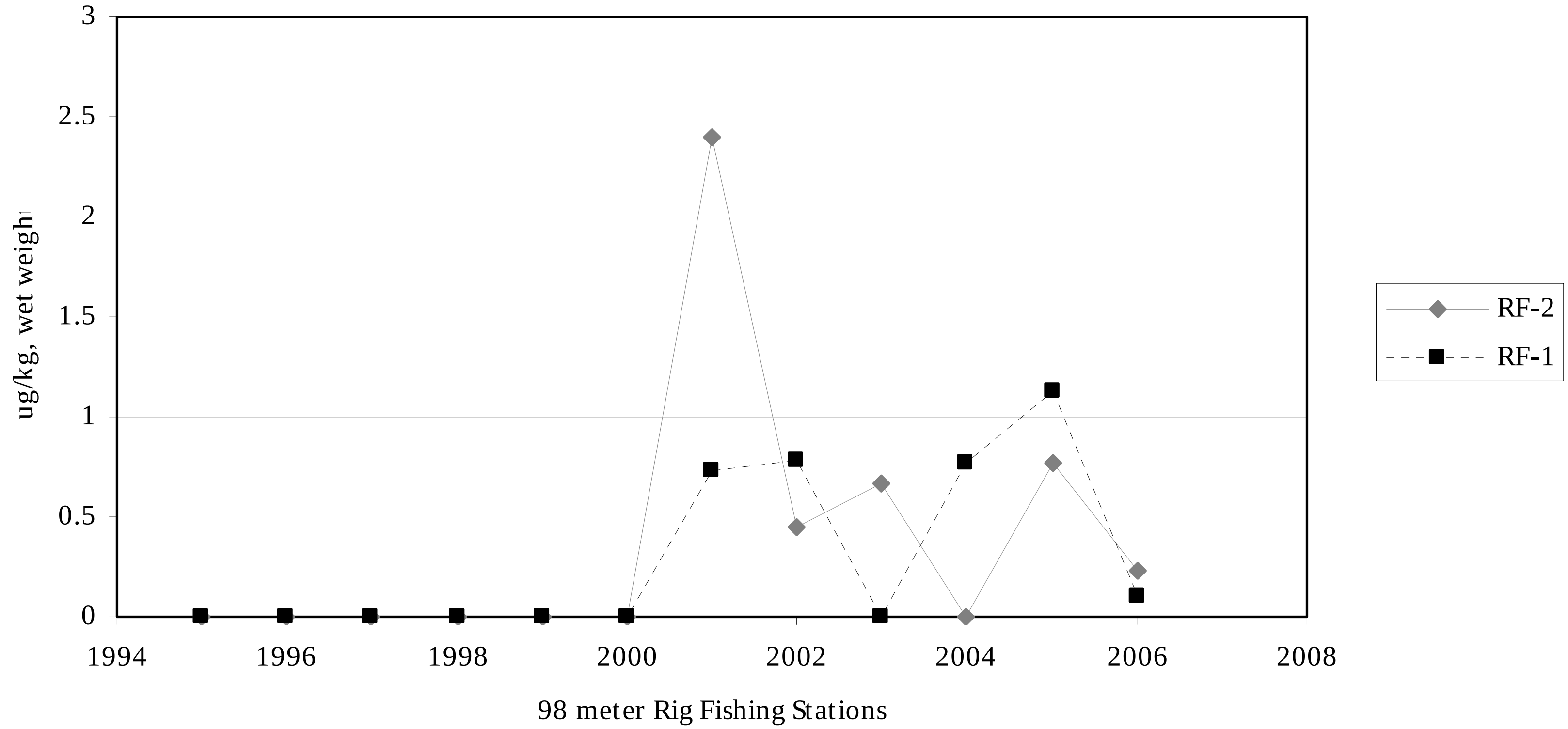


Figure A-54. Average total DDT concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).

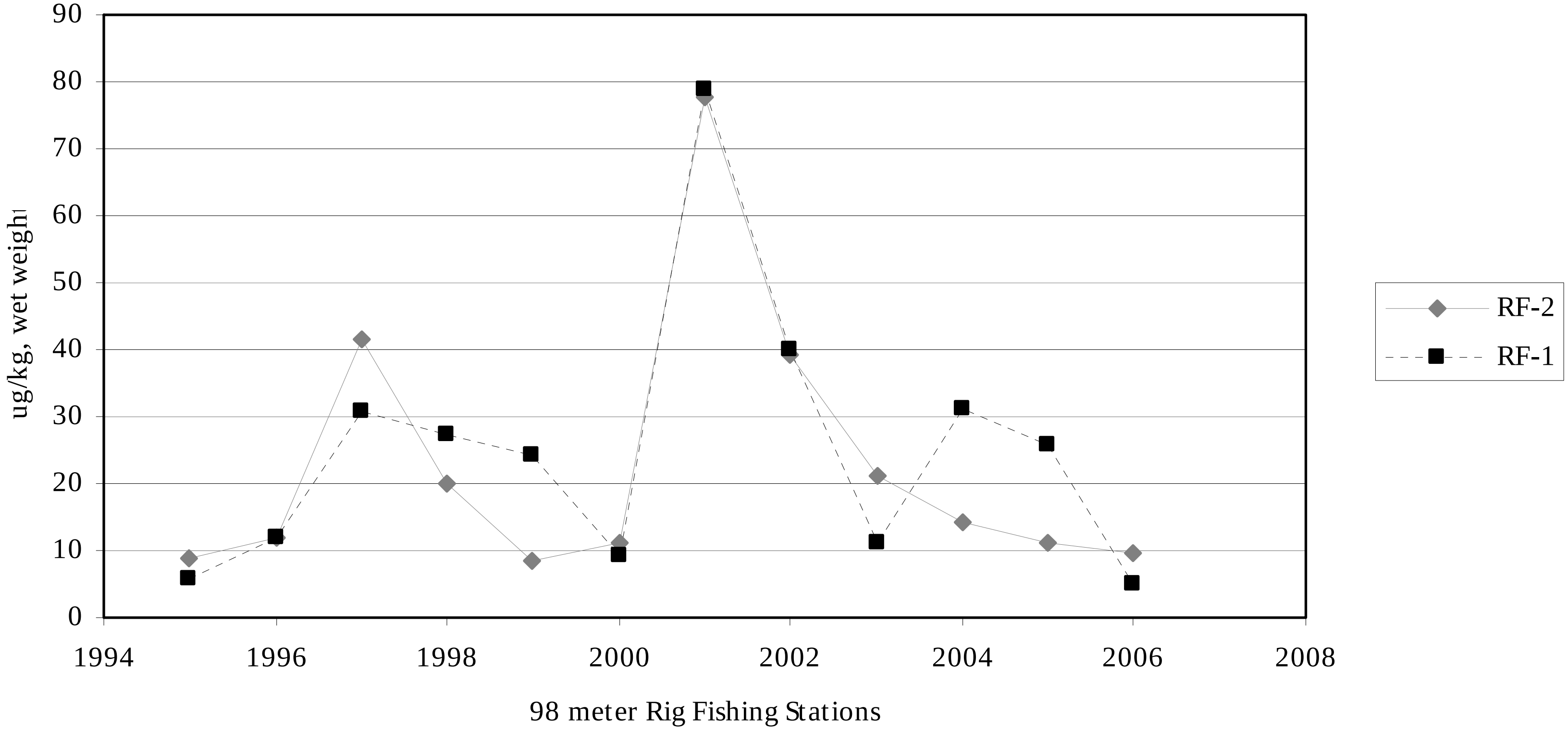
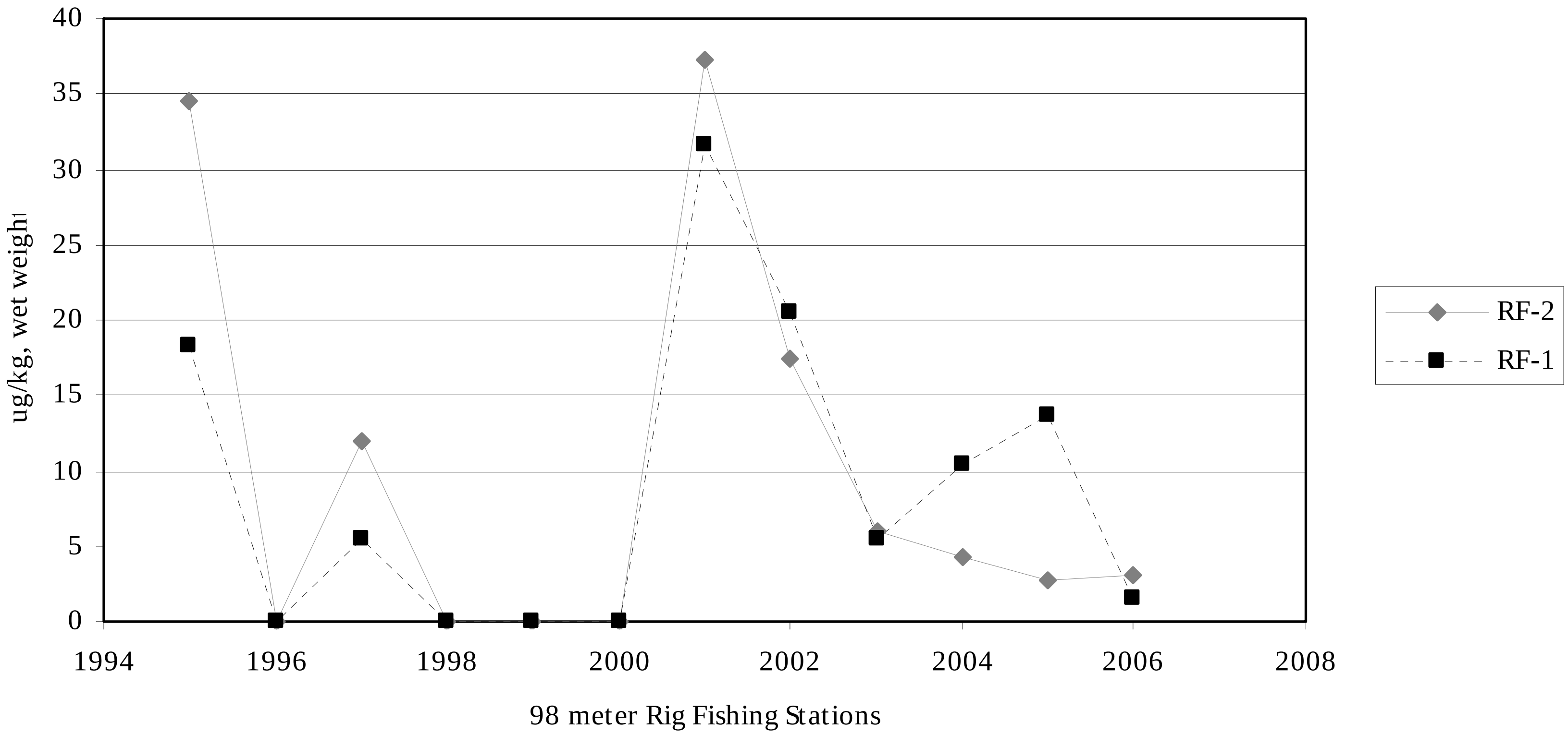


Figure A-55. Average total PCB concentrations in rockfish muscle at 98 meter rig fishing (RF) stations during October (1995-2006).



(Page intentionally blank)

APPENDIX B – TABLES

(Page intentionally blank)

Table B-1. Long-term average and ±1 standard deviation for percent transmissivity (XMS, %) at offshore station water depths, by contour, from October 2003 through October 2

Contour (m) and Station		Water Depth (m) 1	15	25	40	60	70	80	95	100
20	F03	77 ± 18	83 ± 5							
	F02	79 ± 9	82 ± 5							
	F01	78 ± 8	80 ± 10							
60	F14	83 ± 4	86 ± 3	88 ± 3	89 ± 1	83 ± 3				
	F13	83 ± 5	87 ± 2	88 ± 3	89 ± 2	85 ± 3				
	F12	82 ± 9	86 ± 3	87 ± 4	89 ± 3	82 ± 5				
	F11	78 ± 18	85 ± 6	86 ± 5	88 ± 4	80 ± 7				
	F10	82 ± 5	85 ± 6	87 ± 3	88 ± 2	82 ± 7				
	F09	82 ± 5	85 ± 5	87 ± 4	89 ± 2	82 ± 5				
	F08	82 ± 5	85 ± 3	87 ± 3	88 ± 3	84 ± 5				
	F07	83 ± 5	85 ± 3	88 ± 3	89 ± 2	83 ± 8				
	F06	82 ± 6	86 ± 3	86 ± 4	84 ± 15	78 ± 20				
	F05	81 ± 10	87 ± 3	88 ± 2	89 ± 2	81 ± 6				
	F04	83 ± 5	87 ± 4	89 ± 3	90 ± 1	85 ± 8				
80	F25	84 ± 6	86 ± 6	88 ± 4	90 ± 1	90 ± 1	90 ± 1	86 ± 3		
	F24	84 ± 6	86 ± 6	88 ± 3	90 ± 1	90 ± 2	89 ± 2	85 ± 2		
	F23	84 ± 5	85 ± 6	88 ± 3	89 ± 4	89 ± 4	88 ± 3	86 ± 4		
	F22	84 ± 4	86 ± 3	87 ± 4	90 ± 2	91 ± 1	89 ± 1	86 ± 3		
	F21	85 ± 4	85 ± 4	88 ± 3	90 ± 1	90 ± 1	89 ± 2	87 ± 3		
	F20	84 ± 5	86 ± 3	88 ± 3	90 ± 2	90 ± 2	89 ± 2	85 ± 7		
	F19	84 ± 4	86 ± 3	87 ± 3	90 ± 1	91 ± 1	89 ± 2	85 ± 7		
	F18	83 ± 5	84 ± 9	86 ± 11	87 ± 13	87 ± 12	86 ± 12	83 ± 9		
	F17	83 ± 6	87 ± 3	88 ± 3	88 ± 7	90 ± 2	88 ± 6	82 ± 10		
	F16	81 ± 13	87 ± 3	89 ± 2	90 ± 2	90 ± 2	89 ± 2	84 ± 5		
	F15	85 ± 6	87 ± 4	89 ± 2	91 ± 1	90 ± 1	90 ± 2	84 ± 8		
100	F36	84 ± 9	87 ± 4	88 ± 4	91 ± 1	92 ± 1	91 ± 1	91 ± 1	90 ± 2	90 ± 1
	F35	85 ± 5	86 ± 4	88 ± 3	91 ± 1	91 ± 2	91 ± 2	90 ± 2	89 ± 2	90 ± 1
	F34	84 ± 6	85 ± 6	87 ± 4	90 ± 3	90 ± 3	89 ± 3	89 ± 3	89 ± 4	87 ± 4
	F33	86 ± 3	86 ± 4	89 ± 2	91 ± 1	91 ± 1	91 ± 1	90 ± 1	89 ± 1	89 ± 2
	F32	85 ± 3	86 ± 4	89 ± 2	91 ± 1	90 ± 1	90 ± 2	90 ± 2	89 ± 2	87 ± 5
	F31	86 ± 3	87 ± 3	88 ± 4	90 ± 1	90 ± 1	90 ± 2	90 ± 2	88 ± 4	91
Near-ZID:	F30	85 ± 4	87 ± 2	88 ± 3	91 ± 1	90 ± 2	89 ± 3	88 ± 3	88 ± 3	90
	F29	85 ± 3	86 ± 4	88 ± 4	89 ± 7	91 ± 1	90 ± 2	90 ± 2	90 ± 1	90 ± 2
	F28	85 ± 4	87 ± 4	88 ± 3	90 ± 1	91 ± 1	91 ± 1	91 ± 2	90 ± 1	90 ± 1
	F27	85 ± 4	87 ± 5	88 ± 2	91 ± 1	91 ± 1	91 ± 1	90 ± 2	90 ± 1	89 ± 1
	F26	85 ± 5	87 ± 5	89 ± 3	91 ± 1	91 ± 1	91 ± 1	91 ± 1	89 ± 2	88 ± 3

Table B-2. Long-term average and ±1 standard deviation for dissolved oxygen (mg/l) at offshore station water depths, by contour, from October 2003 through October 2007

Contour (m) and Station		Water Depth (m) 1	15	25	40	60	70	80	95	100
20	F03	8.3 ± 0.8	7.4 ± 1.2							
	F02	8.2 ± 1.0	7.3 ± 1.2							
	F01	8.1 ± 1.2	6.9 ± 1.2							
60	F14	8.3 ± 1.1	7.8 ± 1.1	6.6 ± 1.5	5.2 ± 1.2	4.5 ± 1.1				
	F13	8.3 ± 0.9	7.7 ± 1.1	6.6 ± 1.5	5.2 ± 1.2	4.5 ± 1.0				
	F12	8.2 ± 0.9	7.7 ± 1.2	6.5 ± 1.4	5.2 ± 1.1	4.5 ± 1.0				
	F11	8.3 ± 0.8	7.6 ± 1.1	6.6 ± 1.5	5.3 ± 1.2	4.6 ± 1.1				
	F10	8.3 ± 1.0	7.7 ± 1.1	6.5 ± 1.6	5.2 ± 1.3	4.6 ± 1.1				
	F09	8.2 ± 1.0	7.6 ± 1.2	6.5 ± 1.7	5.3 ± 1.4	4.6 ± 1.2				
	F08	8.3 ± 0.8	7.6 ± 1.1	6.5 ± 1.6	5.4 ± 1.5	4.6 ± 1.2				
	F07	8.2 ± 0.9	7.7 ± 1.0	6.6 ± 1.3	5.4 ± 1.2	4.7 ± 1.1				
	F06	8.5 ± 1.4	7.7 ± 1.5	6.7 ± 1.7	5.3 ± 1.4	4.8 ± 1.4				
	F05	8.5 ± 1.2	7.7 ± 1.4	6.7 ± 1.4	5.2 ± 1.1	4.7 ± 1.1				
	F04	8.4 ± 1.2	7.7 ± 1.3	6.8 ± 1.5	5.4 ± 1.1	4.7 ± 1.1				
80	F25	8.2 ± 0.9	8.4 ± 0.7	7.1 ± 1.1	5.7 ± 1.2	4.9 ± 1.1	4.3 ± 0.9	3.8 ± 0.8		
	F24	8.3 ± 0.9	8.3 ± 0.8	7.0 ± 1.2	5.5 ± 1.2	4.8 ± 1.1	4.3 ± 0.9	3.9 ± 0.7		
	F23	8.3 ± 0.9	8.1 ± 0.8	6.9 ± 1.1	5.5 ± 1.3	4.8 ± 1.1	4.4 ± 1.0	3.9 ± 0.8		
	F22	8.2 ± 1.1	8.0 ± 0.8	6.8 ± 1.4	5.4 ± 1.1	4.8 ± 1.0	4.4 ± 0.8	4.0 ± 0.8		
	F21	8.2 ± 1.0	8.1 ± 0.7	7.0 ± 1.3	5.5 ± 1.1	4.8 ± 1.0	4.3 ± 0.9	4.0 ± 0.8		
	F20	8.2 ± 1.0	7.9 ± 0.9	7.0 ± 1.3	5.5 ± 1.3	4.8 ± 1.1	4.4 ± 1.0	4.0 ± 0.8		
	F19	8.2 ± 1.0	8.0 ± 0.9	6.8 ± 1.3	5.5 ± 1.3	4.9 ± 1.1	4.5 ± 1.0	4.0 ± 0.8		
	F18	8.3 ± 1.3	7.7 ± 1.2	6.7 ± 1.6	5.5 ± 1.3	5.0 ± 1.2	4.6 ± 1.1	4.2 ± 1.0		
	F17	8.2 ± 1.2	7.7 ± 1.4	6.8 ± 1.7	5.5 ± 1.3	5.0 ± 1.2	4.6 ± 1.1	4.2 ± 1.0		
	F16	8.3 ± 1.2	7.8 ± 1.6	6.9 ± 1.6	5.5 ± 1.2	5.0 ± 1.1	4.6 ± 1.1	4.3 ± 1.0		
	F15	8.4 ± 1.2	7.9 ± 1.1	6.9 ± 1.4	5.5 ± 1.0	5.0 ± 1.0	4.7 ± 1.0	4.4 ± 0.9		
100	F36	8.2 ± 0.9	8.3 ± 0.5	7.4 ± 1.0	5.9 ± 1.1	5.1 ± 1.1	4.6 ± 0.9	4.3 ± 0.9	3.9 ± 0.7	3.3 ± 0.5
	F35	8.2 ± 0.8	8.3 ± 0.6	7.3 ± 0.9	5.8 ± 1.1	5.0 ± 1.0	4.6 ± 1.0	4.3 ± 1.0	3.8 ± 0.7	3.4 ± 0.7
	F34	8.2 ± 0.8	8.3 ± 0.4	7.2 ± 0.9	5.7 ± 1.1	5.0 ± 1.0	4.5 ± 0.9	4.2 ± 0.9	3.8 ± 0.8	3.7 ± 0.7
	F33	8.2 ± 1.0	8.4 ± 0.6	7.2 ± 1.0	5.7 ± 1.0	4.9 ± 1.0	4.5 ± 0.9	4.2 ± 0.7	3.8 ± 0.7	3.9 ± 0.7
	F32	8.2 ± 1.1	8.2 ± 0.7	7.1 ± 1.2	5.7 ± 1.1	4.9 ± 0.9	4.5 ± 0.8	4.2 ± 0.7	3.9 ± 0.7	3.7 ± 0.7
	F31	8.2 ± 1.0	8.0 ± 0.8	7.0 ± 1.3	5.7 ± 1.2	4.9 ± 0.9	4.5 ± 0.9	4.2 ± 0.8	3.8 ± 0.8	3.4
Near-ZID:	F30	8.2 ± 1.0	8.0 ± 0.8	7.0 ± 1.3	5.7 ± 1.3	4.9 ± 1.2	4.5 ± 1.1	4.2 ± 0.9	3.9 ± 0.8	2.3
	F29	8.3 ± 1.1	8.2 ± 0.9	7.0 ± 1.4	5.7 ± 1.1	5.1 ± 1.1	4.6 ± 1.1	4.4 ± 1.0	4.0 ± 1.0	4.5 ± 1.0
	F28	8.3 ± 1.3	8.1 ± 1.0	7.1 ± 1.5	5.6 ± 1.2	5.1 ± 1.1	4.6 ± 1.1	4.4 ± 1.0	4.0 ± 1.0	4.0 ± 1.2
	F27	8.2 ± 1.2	7.9 ± 1.2	6.9 ± 1.5	5.6 ± 1.2	5.1 ± 1.1	4.7 ± 1.0	4.4 ± 1.0	4.0 ± 1.0	3.2 ± 0.9
	F26	8.2 ± 1.1	8.1 ± 1.4	7.1 ± 1.4	5.7 ± 1.1	5.1 ± 1.0	4.8 ± 1.0	4.6 ± 0.9	4.0 ± 0.9	4.1 ± 1.4

Table B-3. Long-term average and ±1 standard deviation for pH (units) at offshore station water depths, by contour, from October 2003 through October 2007.

Contour (m) and Station		Water Depth (m) 1	15	25	40	60	70	80	95	100
20	F03	8.1 ± 0.1	8.0 ± 0.1							
	F02	8.2 ± 0.1	8.1 ± 0.1							
	F01	8.2 ± 0.1	8.1 ± 0.1							
60	F14	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F13	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F12	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F11	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F10	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F09	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F08	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F07	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F06	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F05	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
	F04	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1				
80	F25	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.0		
	F24	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.0		
	F23	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
	F22	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
	F21	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
	F20	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
	F19	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
	F18	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
	F17	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
	F16	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
	F15	8.2 ± 0.1	8.2 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1		
100	F36	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.0	7.8 ± 0.0
	F35	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.0	7.8 ± 0.0
	F34	8.2 ± 0.1	8.1 ± 0.0	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.0
	F33	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1
	F32	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.7 ± 0.0
	F31	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8
Near-ZID:	F30	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8
	F29	8.2 ± 0.1	8.1 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.0
	F28	8.2 ± 0.1	8.2 ± 0.1	8.0 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.0
	F27	8.2 ± 0.1	8.2 ± 0.1	8.1 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1
	F26	8.2 ± 0.1	8.2 ± 0.1	8.1 ± 0.1	7.9 ± 0.1	7.9 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.1	7.8 ± 0.0

Table B-4. Monitored chemical parameters in Point Loma WTP effluent from 2002 through 2006.

CAS #	Chemical Parameter	CAS #	Chemical Parameter
71-55-6	1,1,1-trichloroethane	56534-02-2	Alpha chlordene
79-34-5	1,1,2,2-tetrachloroethane	959-98-8	Alpha endosulfan
79-00-5	1,1,2-trichloroethane	7429-90-5	Aluminum
75-34-3	1,1-dichloroethane	7664-41-7	Ammonia-N
75-35-4	1,1-dichloroethene	120-12-7	Anthracene
35822-46-9	1,2,3,4,6,7,8-hepta CDD	7440-36-0	Antimony
67562-39-4	1,2,3,4,6,7,8-hepta CDF	7440-38-2	Arsenic
55673-89-7	1,2,3,4,7,8,9-hepta CDF	7440-39-3	Barium
39227-28-6	1,2,3,4,7,8 hexa CDD	71-43-2	Benzene
70648-26-9	1,2,3,4,7,8-hexa CDF	92-87-5	Benzidine
57653-85-7	1,2,3,6,7,8-hexa CDD	56-55-3	Benzo[a]anthracene
	1,2,3,6,7,8-hexa CDF	50-32-8	Benzo[a]pyrene
19408-74-3	1,2,3,7,8,9-hexa CDD	192-97-2	Benzo[e]pyrene
72918-21-9	1,2,3,7,8,9-hexa CDF	191-24-2	Benzo[g,h,i]perylene
40321-76-4	1,2,3,7,8-penta CDD	207-08-9	Benzo[k]fluoranthene
57117-41-6	1,2,3,7,8-penta CDF	100-44-7	Benzyl chloride
120-82-1	1,2,4-trichlorobenzene	7440-41-7	Beryllium
106-93-4	1,2-dibromoethane	33213-65-9	Beta endosulfan
95-50-1	1,2-dichlorobenzene	319-84-6	BHC, alpha isomer
107-06-2	1,2-dichloroethane	319-85-7	BHC, beta isomer
78-87-5	1,2-dichloropropane	319-86-8	BHC, delta isomer
122-66-7	1,2-diphenylhydrazine	58-89-9	BHC, gamma isomer
541-73-1	1,3-dichlorobenzene	92-52-4	Biphenyl
106-46-7	1,4-dichlorobenzene	111-91-1	Bis(2-chloroethoxy) methane
90-12-0	1-methylnaphthalene	111-44-4	Bis(2-chloroethyl) ether
832-69-9	1-methylphenanthrene	108-60-1	Bis-(2-chloroisopropyl) ether
60851-35-5	2,3,4,6,7,8-hexa CDF	117-81-7	Bis(2-ethylhexyl) phthalate
57117-31-4	2,3,4,7,8-penta CDF		BOD (Biochemical oxygen demand)
2245-38-7	2,3,5-trimethylnaphthalene		BOD (Soluble)
1746-01-6	2,3,7,8-tetra CDD	35400-43-2	Bolstar
51207-31-9	2,3,7,8-tetra CDF	7440-42-8	Boron
95-95-4	2,4,5-trichlorophenol		Bromide
88-06-2	2,4,6-trichlorophenol	75-27-4	Bromodichloromethane
120-83-2	2,4-dichlorophenol	75-25-2	Bromoform
105-67-9	2,4-dimethylphenol	74-83-9	Bromomethane
51-28-5	2,4-dinitrophenol	85-68-7	Butyl benzyl phthalate
121-14-2	2,4-dinitrotoluene	7440-43-9	Cadmium
581-42-0	2,6-dimethylnaphthalene	7440-70-2	Calcium
606-20-2	2,6-dinitrotoluene		Calcium hardness
78-93-3	2-butanone	75-15-0	Carbon disulfide
110-75-8	2-chloroethylvinyl ether	56-23-5	Carbon tetrachloride
91-58-7	2-chloronaphthalene		Chemical oxygen demand
95-57-8	2-chlorophenol		Chloride
534-52-1	2-methyl-4,6-dinitrophenol	108-90-7	Chlorobenzene
91-57-6	2-methylnaphthalene	75-00-3	Chloroethane
95-48-7	2-methylphenol	67-66-3	Chloroform
88-75-5	2-nitrophenol	74-87-3	Chloromethane
79-46-9	2-nitropropane	126-99-8	Chloroprene
91-94-1	3,3-dichlorobenzidine	2921-88-2	Chlorpyrifos
205-99-2	3,4-benzo(b)fluoranthene	7440-47-3	Chromium
108-39-4	3-methylphenol (4-MP is unresolved)	218-01-9	Chrysene
101-55-3	4-bromophenyl phenyl ether	5103-73-1	Cis nonachlor
59-50-7	4-chloro-3-methylphenol	10061-01-5	Cis-1,3-dichloropropene
7005-72-3	4-chlorophenyl phenyl ether	7440-48-4	Cobalt
108-10-1	4-methyl-2-pentanone		COD (Soluble)
106-44-5	4-methylphenol (3-MP is unresolved)		Conductivity
100-02-7	4-nitrophenol	7440-50-8	Copper
83-32-9	Acenaphthene	56-72-4	Coumaphos
208-96-8	Acenaphthylene	57-12-5	Cyanides, total
67-64-1	Acetone	298-03-3	Demeton O
107-02-8	Acrolein	126-75-0	Demeton S
107-13-1	Acrylonitrile	333-41-5	Diazinon
309-00-2	Aldrin	53-70-3	Dibenzo(a,h)anthracene
107-05-1	Allyl chloride		Dibrom
5103-71-9	Alpha(cis) chlordane	128-48-1	Dibromochloromethane

Table B-4 (cont.). Monitored chemical parameters in Point Loma WTP effluent from 2002 through 2006.

CAS #	Chemical Parameter	CAS #	Chemical Parameter
	Dibutyl tin	86-30-6	N-nitrosodiphenylamine
	Dichlofenthion	53-19-0	o,p-DDD
62-73-7	Dichlorvos	3424-82-6	o,p-DDE
60-57-1	Dieldrin	789-02-6	o,p-DDT
84-66-2	Diethyl phthalate	3268-87-9	octa CDD
60-51-5	Dimethoate	39001-02-0	octa CDF
131-11-3	Dimethyl phthalate		Ortho phosphate
84-74-2	Di-n-butyl phthalate	95-47-6	Ortho-xylene
117-84-0	Di-n-octyl phthalate	27304-13-8	Oxychlordane
298-04-4	Disulfoton	72-54-8	p,p-DDD
1031-07-8	Endosulfan sulfate	72-55-9	p,p-DDE
72-20-8	Endrin	50-29-3	p,p-DDT
7421-93-4	Endrin aldehyde	56-38-2	Parathion
2104-64-5	EPN	12674-11-2	PCB 1016
13194-48-4	Ethoprop	11104-28-2	PCB 1221
100-41-4	Ethylbenzene	11141-16-5	PCB 1232
115-90-2	Fensulfothion	346689-21-9	PCB 1242
	Floatables	12672-29-6	PCB 1248
206-44-0	Fluoranthene	11097-69-1	PCB 1254
86-73-7	Fluorene	11096-82-5	PCB 1260
16984-48-8	Fluoride	37324-23-5	PCB 1262
5103-74-2	Gamma (trans) chlordane	87-86-5	Pentachlorophenol
56641-38-4	Gamma chlordene	198-55-0	Perylene
	Grease/oil		pH
	Gross alpha radiation	85-01-8	Phenanthrene
	Gross beta radiation	108-95-2	Phenol
86-50-0	Guthion	298-02-2	Phorate
76-44-8	Heptachlor	7440-09-7	Potassium
1024-57-3	Heptachlor epoxide	129-00-0	Pyrene
118-74-1	Hexachlorobenzene	110-86-1	Pyridine
87-68-3	Hexachlorobutadiene	299-84-3	Ronnel
77-47-4	Hexachlorocyclopentadiene	7782-49-2	Selenium
67-72-1	Hexachloroethane		Settleable solids
	Hexane extractable material	7440-22-4	Silver
193-39-5	Indeno(1,2,3-cd)pyrene	7440-23-5	Sodium
7439-89-6	Iron	22248-79-9	Stirophos
78-59-1	Isophorone	100-42-5	Styrene
98-82-8	Isopropylbenzene		Sulfate
7439-92-1	Lead	18496-25-8	Sulfides-total
7439-93-2	Lithium	3698-24-5	Sulfotepp
7439-95-4	Magnesium	127-18-4	Tetrachloroethene
	Magnesium hardness	107-49-3	Tetraethylpyrophosphate
121-75-5	Malathion	7440-28-0	Thallium
7439-96-5	Manganese	34643-46-4	Tokuthion
	MBAS (Surfactants)	108-88-3	Toluene
7439-97-6	Mercury		Total alkalinity (bicarbonate)
	Merphos		Total dissolved solids
108-38-3	meta,para xylenes		Total hardness
72-43-5	Methoxychlor		Total Kjeldahl nitrogen
74-88-4	Methyl iodide		Total solids
80-62-6	Methyl methacrylate		Total suspended solids
1634-04-4	Methyl tert-butyl ether		Total volatile solids
75-09-2	Methylene chloride	8001-35-2	Toxaphene
7786-34-7	Mevinphos, e isomer	39765-80-5	Trans nonachlor
7786-34-7	Mevinphos, z isomer	156-60-5	Trans-1,2-dichloroethene
2385-85-5	Mirex	10061-02-6	Trans-1,3-dichloropropene
7439-98-7	Molybdenum	56-36-0	Tributyl tin
	Monobutyl tin	79-01-6	Trichloroethene
919-44-8	Monocrotophos	75-69-4	Trichlorofluoromethane
91-20-3	Naphthalene	327-98-0	Trichloronate
7440-02-0	Nickel		Turbidity
	Nitrate	7440-62-2	Vanadium
98-95-3	Nitrobenzene	75-01-4	Vinyl chloride
62-75-9	N-nitrosodimethylamine		Volatile suspended solids
621-64-7	N-nitrosodi-n-propylamine	7440-66-6	Zinc

Table B-5. Monitored chemical parameters detected at least once in Point Loma WTP effluent from 2002 through 2006.

Chemical Parameter	
1,1,2-trichloroethane	Gross alpha radiation
1,4-dichlorobenzene	Gross beta radiation
1-methylnaphthalene	Heptachlor
2,4,6-trichlorophenol	Hexane extractable material
2-butanone	Iron
2-methylnaphthalene	Lead
4-methylphenol (3-MP is unresolved)	Lithium
Acetone	Magnesium
Alpha (cis) chlordane	Magnesium hardness
Alpha endosulfan	Malathion
Aluminum	Manganese
Ammonia-N	MBAS (Surfactants)
Antimony	Mercury
Arsenic	meta,para xylenes
Barium	Methyl tert-butyl ether
Beryllium	Methylene chloride
BHC, delta isomer	Molybdenum
BHC, gamma isomer	Monocrotophos
Bis-(2-ethylhexyl) phthalate	Naphthalene
BOD (Biochemical oxygen demand)	Nickel
BOD (Soluble)	Nitrate
Boron	octa CDD
Bromide	Ortho phosphate
Bromodichloromethane	p,p-DDD
Bromomethane	pH
Cadmium	Phenol
Calcium	Potassium
Calcium hardness	Selenium
Carbon disulfide	Settleable solids
Chemical oxygen demand	Silver
Chloride	Sodium
Chloroform	Sulfate
Chloromethane	Sulfides-total
Chromium	Tetrachloroethene
Cobalt	Thallium
COD (Soluble)	Toluene
Conductivity	Total alkalinity (bicarbonate)
Copper	Total dissolved solids
Cyanides,total	Total hardness
Diazinon	Total Kjeldahl nitrogen
Dibromochloromethane	Total solids
Diethyl phthalate	Total suspended solids
Di-n-octyl phthalate	Total volatile solids
Disulfoton	Trans nonachlor
Endosulfan sulfate	Trichloroethene
Ethylbenzene	Turbidity
Floatables	Vanadium
Fluoride	Volatile suspended solids
Grease/oil	Zinc

Table B-6. Long-term average and ±1 standard deviation for chlorophyll a (mg/l) at offshore station water depths, by contour, from October 2003 through October 2007.

Contour (m) and Station		Water Depth (m) 1	15	25	40	60	70	80	95	100
20	F03	7.9 ± 21.5	5.5 ± 4.2							
	F02	3.8 ± 4.5	6.7 ± 5.4							
	F01	7.3 ± 4.9	6.5 ± 4.0							
60	F14	2.2 ± 0.8	4.8 ± 3.1	4.7 ± 4.0	2.3 ± 1.4	1.3 ± 0.8				
	F13	2.3 ± 1.4	4.0 ± 2.3	5.1 ± 4.3	2.4 ± 1.4	1.3 ± 0.8				
	F12	3.5 ± 2.3	4.1 ± 1.5	5.4 ± 6.7	2.2 ± 1.3	1.3 ± 0.6				
	F11	8.8 ± 20.3	5.3 ± 3.3	5.4 ± 6.6	2.4 ± 1.7	1.4 ± 0.7				
	F10	2.7 ± 2.6	6.1 ± 5.7	4.9 ± 5.1	2.3 ± 1.4	1.3 ± 0.8				
	F09	2.6 ± 1.9	5.8 ± 4.9	4.6 ± 3.0	2.6 ± 1.9	1.4 ± 0.8				
	F08	2.4 ± 1.9	5.7 ± 4.4	3.7 ± 2.3	2.7 ± 2.3	1.3 ± 0.8				
	F07	5.5 ± 6.2	5.0 ± 2.2	4.7 ± 4.5	2.3 ± 1.5	1.3 ± 0.8				
	F06	4.3 ± 4.6	5.2 ± 3.9	4.5 ± 3.3	2.6 ± 1.4	1.7 ± 0.9				
	F05	8.2 ± 15.5	4.8 ± 3.1	4.9 ± 3.4	2.3 ± 1.2	1.5 ± 0.8				
	F04	4.8 ± 5.1	4.3 ± 2.2	4.8 ± 3.6	2.3 ± 1.1	1.4 ± 0.7				
80	F25	2.2 ± 1.3	4.9 ± 3.4	5.5 ± 5.2	2.6 ± 1.5	1.3 ± 0.8	1.0 ± 0.7	0.8 ± 0.6		
	F24	2.2 ± 1.3	6.6 ± 8.5	5.2 ± 4.4	2.6 ± 1.9	1.2 ± 0.7	1.0 ± 0.7	0.8 ± 0.6		
	F23	2.7 ± 1.8	5.7 ± 4.5	4.8 ± 3.1	2.2 ± 1.0	1.2 ± 0.7	1.0 ± 0.6	0.9 ± 0.7		
	F22	2.5 ± 1.8	4.8 ± 4.1	4.8 ± 4.4	2.1 ± 1.2	1.2 ± 0.7	0.9 ± 0.6	0.8 ± 0.6		
	F21	1.9 ± 1.2	4.7 ± 2.9	4.7 ± 3.5	2.5 ± 1.9	1.2 ± 0.7	0.9 ± 0.6	0.8 ± 0.6		
	F20	2.3 ± 1.5	4.6 ± 3.6	4.6 ± 3.0	2.5 ± 1.5	1.3 ± 0.8	1.0 ± 0.6	0.8 ± 0.6		
	F19	2.9 ± 2.1	5.0 ± 2.6	4.5 ± 3.0	2.3 ± 1.6	1.3 ± 0.7	1.0 ± 0.7	0.8 ± 0.6		
	F18	2.9 ± 2.7	5.1 ± 3.4	4.4 ± 3.9	2.7 ± 2.4	1.4 ± 0.8	1.1 ± 0.6	0.9 ± 0.6		
	F17	2.4 ± 1.5	4.5 ± 3.3	3.9 ± 3.0	2.2 ± 1.4	1.4 ± 0.8	1.1 ± 0.6	0.9 ± 0.6		
	F16	2.6 ± 2.3	4.9 ± 5.4	3.7 ± 1.8	2.6 ± 1.6	1.3 ± 0.7	1.0 ± 0.6	0.9 ± 0.6		
	F15	3.5 ± 3.7	5.0 ± 5.6	3.7 ± 1.8	2.1 ± 1.2	1.2 ± 0.6	1.0 ± 0.6	0.9 ± 0.6		
100	F36	1.9 ± 1.1	4.3 ± 2.7	5.9 ± 5.6	2.5 ± 1.2	1.2 ± 0.7	1.1 ± 0.8	0.9 ± 0.7	0.8 ± 0.6	0.3 ± 0.1
	F35	2.0 ± 1.0	4.7 ± 4.7	4.5 ± 2.3	2.3 ± 1.0	1.2 ± 0.7	1.0 ± 0.7	0.9 ± 0.7	0.7 ± 0.6	0.4 ± 0.1
	F34	2.5 ± 2.1	5.2 ± 3.8	6.5 ± 6.0	2.5 ± 1.3	1.3 ± 0.9	1.1 ± 0.8	0.9 ± 0.7	0.8 ± 0.6	0.8 ± 0.6
	F33	2.1 ± 1.5	4.9 ± 2.7	4.6 ± 2.6	2.1 ± 1.2	1.2 ± 0.6	1.0 ± 0.6	0.8 ± 0.6	0.7 ± 0.6	0.6 ± 0.6
	F32	2.3 ± 1.6	5.4 ± 4.8	4.7 ± 4.1	2.1 ± 1.6	1.1 ± 0.7	0.9 ± 0.6	0.8 ± 0.6	0.7 ± 0.6	0.5 ± 0.6
	F31	2.4 ± 1.7	4.9 ± 3.6	5.5 ± 6.5	2.2 ± 1.4	1.2 ± 0.7	1.0 ± 0.6	0.9 ± 0.6	0.7 ± 0.6	0.3
Near-ZID:	F30	2.6 ± 1.7	4.8 ± 3.7	5.9 ± 5.7	2.2 ± 1.4	1.2 ± 0.7	1.0 ± 0.7	0.9 ± 0.6	0.7 ± 0.6	0.4
	F29	2.3 ± 1.6	7.2 ± 8.6	4.5 ± 3.1	2.5 ± 1.9	1.3 ± 0.7	1.0 ± 0.6	0.9 ± 0.6	0.7 ± 0.6	0.7 ± 0.1
	F28	2.3 ± 1.8	5.5 ± 6.4	4.6 ± 3.4	2.4 ± 1.4	1.2 ± 0.7	1.1 ± 0.7	0.8 ± 0.6	0.8 ± 0.6	0.7 ± 0.4
	F27	2.8 ± 2.6	5.2 ± 4.8	4.5 ± 3.1	2.1 ± 1.1	1.2 ± 0.7	0.9 ± 0.6	0.8 ± 0.6	0.7 ± 0.5	0.5 ± 0.4
	F26	2.7 ± 2.2	5.8 ± 6.1	4.6 ± 3.1	2.2 ± 1.3	1.2 ± 0.7	1.0 ± 0.6	0.9 ± 0.6	0.8 ± 0.5	0.8 ± 0.2

Table B-7. Flatfish species sampled for liver tissue (*) at 98 meter trawl fishing zones in October (1995-2006).

Common Name	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Bigmouth Sole									*			
Dover Sole	*							*				
English Sole		*				*	*		*	*		*
Hornyhead Turbot			*			*			*			
Longfin Sanddab	*	*	*	*	*	*	*	*	*	*		
Pacific Sanddab	*	*				*	*	*	*	*	*	*

Table B-8. Rockfish species sampled for muscle tissue (*) at 98 meter rig fishing stations in October (1995-2006).

Common Name	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
California Scorpionfish			*	*	*							
Canary Rockfish	*											
Copper Rockfish	*	*		*			*	*	*	*		*
Flag Rockfish								*				
Greenspotted Rockfish										*		
Rockfish unid.	*	*	*	*		*	*	*	*	*	*	
Rosethorn Rockfish											*	
Speckled Rockfish		*	*		*						*	
Squarespot Rockfish			*								*	
Starry Rockfish			*	*			*					*
Vermilion Rockfish	*	*		*	*	*	*	*	*			
Yellowtail Rockfish												*

Table B-9. Exceedance summary for single sample maximum bacterial objectives at shoreline stations from June 2003 through July 2007.

Total Coliform Objective: 10,000 per 100 ml Single Sample Maximum.				
Station	# of times exceeded	# of observations	% >10,000	% ≤10,000
D12	0	247	0.00%	100.00%
D11	0	248	0.00%	100.00%
D10	0	247	0.00%	100.00%
D9	0	255	0.00%	100.00%
D8	0	255	0.00%	100.00%
D7	0	224	0.00%	100.00%
D6	0	8	0.00%	100.00%
D5	0	257	0.00%	100.00%
D4	0	252	0.00%	100.00%
Total:	0	1993	0.00%	100.00%

Fecal Coliform Objective: 400 per 100 ml Single Sample Maximum.				
Station	# of times exceeded	# of observations	% >400	% ≤400
D12	0	248	0.00%	100.00%
D11	4	248	1.61%	98.39%
D10	1	248	0.40%	99.60%
D9	0	255	0.00%	100.00%
D8	9	259	3.47%	96.53%
D7	2	224	0.89%	99.11%
D6	0	8	0.00%	100.00%
D5	0	257	0.00%	100.00%
D4	0	252	0.00%	100.00%
Total:	16	1999	0.80%	99.20%

Table B-9 (cont.). Exceedance summary for single sample maximum bacterial objectives at shoreline stations from June 2003 through July 2007.

Fecal-Total Ratio Objective: 1000 per 100 ml Single Sample Maximum. when Fecal-Total Coliform Ratio >0.1.				
Station	# of times exceeded	# of observations	% >1,000	% ≤1,000
D12	0	247	0.00%	100.00%
D11	5	248	2.02%	97.98%
D10	0	247	0.00%	100.00%
D9	0	255	0.00%	100.00%
D8	5	255	1.96%	98.04%
D7	1	224	0.45%	99.55%
D6	0	8	0.00%	100.00%
D5	1	257	0.39%	99.61%
D4	0	252	0.00%	100.00%
Total:	12	1993	0.60%	99.40%

Enterococcus Objective: 104 per 100 ml Single Sample Maximum.				
Station	# of times exceeded	# of observations	% >104	% ≤104
D12	5	248	2.02%	97.98%
D11	14	248	5.65%	94.35%
D10	9	248	3.63%	96.37%
D9	7	255	2.75%	97.25%
D8	16	259	6.18%	93.82%
D7	4	224	1.79%	98.21%
D6	0	8	0.00%	100.00%
D5	8	257	3.11%	96.89%
D4	3	252	1.19%	98.81%
Total:	66	1999	3.30%	96.70%

Table B-10. Exceedance summary for running 30-day geometric mean bacterial objectives at shoreline stations from June 2003 through July 2007.

Total Coliform Objective: 1,000 per 100 ml 30-day Geometric Mean.				
Station	# of times exceeded	# of observations	% >10,000	% ≤10,000
D12	0	1427	0.00%	100.00%
D11	0	1427	0.00%	100.00%
D10	0	1427	0.00%	100.00%
D9	0	1490	0.00%	100.00%
D8	0	1490	0.00%	100.00%
D7	0	1490	0.00%	100.00%
D6	0	1490	0.00%	100.00%
D5	0	1490	0.00%	100.00%
D4	0	1490	0.00%	100.00%
Total:	0	13221	0.00%	100.00%

Fecal Coliform Objective: 200 per 100 ml 30-day Geometric Mean.				
Station	# of times exceeded	# of observations	% >400	% ≤400
D12	0	1427	0.00%	100.00%
D11	4	1427	0.28%	99.72%
D10	0	1427	0.00%	100.00%
D9	0	1490	0.00%	100.00%
D8	0	1490	0.00%	100.00%
D7	0	1490	0.00%	100.00%
D6	0	1490	0.00%	100.00%
D5	0	1490	0.00%	100.00%
D4	0	1490	0.00%	100.00%
Total:	4	13221	0.03%	99.97%

Enterococcus Objective: 35 per 100 ml 30-day Geometric Mean.				
Station	# of times exceeded	# of observations	% >400	% ≤400
D12	0	1427	0.00%	100.00%
D11	0	1427	0.00%	100.00%
D10	0	1427	0.00%	100.00%
D9	16	1490	1.07%	98.93%
D8	135	1490	9.06%	90.94%
D7	6	1490	0.40%	99.60%
D6	0	28	0.00%	100.00%
D5	5	1490	0.34%	99.66%
D4	5	1490	0.34%	99.66%
Total:	167	11759	1.42%	98.58%

Table B-11. Exceedance summary for single sample maximum total coliform objective at kelp bed stations from June 2003 through July 2007.

Total Coliform Objective: 10,000 per 100 ml Single Sample Maximum.					
Station	Depth (m)	# of times exceeded	# of observations	% >10,000	% ≤10,000
C6	Surface (1)	0	247	0.00%	100.00%
	Mid (3)	0	247	0.00%	100.00%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	237	0.00%	100.00%
C5	Surface (1)	2	247	0.81%	99.19%
	Mid (3)	2	247	0.81%	99.19%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	236	0.00%	100.00%
C4	Surface (1)	2	248	0.81%	99.19%
	Mid (3)	2	248	0.81%	99.19%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	237	0.00%	100.00%
C8	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
C7	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	248	0.00%	100.00%
A6	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	248	0.00%	100.00%
A7	Surface (1)	1	248	0.40%	99.60%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A1	Surface (1)	1	246	0.41%	99.59%
	Mid (12)	0	248	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
Total:		10	5952	0.17%	99.83%

Table B-12. Exceedance summary for single sample maximum fecal coliform objective at kelp bed stations from June 2003 through July 2007.

Fecal Coliform Objective: 400 per 100 ml Single Sample Maximum.					
Station	Depth (m)	# of times exceeded	# of observations	% >400	% ≤400
C6	Surface (1)	0	247	0.00%	100.00%
	Mid (3)	0	247	0.00%	100.00%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	237	0.00%	100.00%
C5	Surface (1)	1	247	0.40%	99.60%
	Mid (3)	2	247	0.81%	99.19%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	236	0.00%	100.00%
C4	Surface (1)	2	248	0.81%	99.19%
	Mid (3)	2	248	0.81%	99.19%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	237	0.00%	100.00%
C8	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
C7	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A6	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A7	Surface (1)	1	248	0.40%	99.60%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A1	Surface (1)	1	249	0.40%	99.60%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
Total:		9	5958	0.15%	99.85%

Table B-13. Exceedance summary for single sample maximum fecal-total ratio objective at kelp bed stations from June 2003 through July 2007.

Fecal-Total Ratio Objective: 1000 per 100 ml Single Sample Maximum. when Fecal-Total Coliform Ratio >0.1.					
Station	Depth (m)	# of times exceeded	# of observations	% >1,000	% ≤1,000
C6	Surface (1)	0	247	0.00%	100.00%
	Mid (3)	0	247	0.00%	100.00%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	237	0.00%	100.00%
C5	Surface (1)	0	247	0.00%	100.00%
	Mid (3)	0	247	0.00%	100.00%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	236	0.00%	100.00%
C4	Surface (1)	0	248	0.00%	100.00%
	Mid (3)	0	248	0.00%	100.00%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	237	0.00%	100.00%
C8	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	1	249	0.40%	99.60%
	Bottom (18)	0	249	0.00%	100.00%
C7	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	248	0.00%	100.00%
A6	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	248	0.00%	100.00%
A7	Surface (1)	1	248	0.40%	99.60%
	Mid (12)	1	249	0.40%	99.60%
	Bottom (18)	0	249	0.00%	100.00%
A1	Surface (1)	0	246	0.00%	100.00%
	Mid (12)	1	248	0.40%	99.60%
	Bottom (18)	1	249	0.40%	99.60%
Total:		5	5952	0.08%	99.92%

Table B-14. Exceedance summary for single sample maximum enterococcus objective at kelp bed stations from June 2003 through July 2007.

Enterococcus Objective: 104 per 100 ml Single Sample Maximum.					
Station	Depth (m)	# of times exceeded	# of observations	% >104	% ≤104
C6	Surface (1)	1	247	0.40%	99.60%
	Mid (3)	1	247	0.40%	99.60%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	0	237	0.00%	100.00%
C5	Surface (1)	3	247	1.21%	98.79%
	Mid (3)	2	247	0.81%	99.19%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	1	236	0.42%	99.58%
C4	Surface (1)	2	248	0.81%	99.19%
	Mid (3)	2	248	0.81%	99.19%
	Bottom (6)	0	10	0.00%	100.00%
	Bottom (9)	1	237	0.42%	99.58%
C8	Surface (1)	1	249	0.40%	99.60%
	Mid (12)	1	249	0.40%	99.60%
	Bottom (18)	1	249	0.40%	99.60%
C7	Surface (1)	1	249	0.40%	99.60%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A6	Surface (1)	1	249	0.40%	99.60%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A7	Surface (1)	2	249	0.80%	99.20%
	Mid (12)	1	249	0.40%	99.60%
	Bottom (18)	1	249	0.40%	99.60%
A1	Surface (1)	2	249	0.80%	99.20%
	Mid (12)	2	249	0.80%	99.20%
	Bottom (18)	1	249	0.40%	99.60%
Total:		27	5959	0.45%	99.55%

Table B-15. Exceedance summary for running 30-day geometric mean total coliform objective at kelp bed stations from June 2003 through July 2007.

Total Coliform Objective: 1,000 per 100 ml 30-day Geometric Mean.					
Station	Depth (m)	# of times exceeded	# of observations	% >10,000	% ≤10,000
C6	Surface (1)	0	1427	0.00%	100.00%
	Mid (3)	0	1427	0.00%	100.00%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1370	0.00%	100.00%
C5	Surface (1)	0	1414	0.00%	100.00%
	Mid (3)	0	1414	0.00%	100.00%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1365	0.00%	100.00%
C4	Surface (1)	0	1427	0.00%	100.00%
	Mid (3)	0	1427	0.00%	100.00%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1370	0.00%	100.00%
C8	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
C7	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
A6	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
A7	Surface (1)	0	1458	0.00%	100.00%
	Mid (12)	0	1458	0.00%	100.00%
	Bottom (18)	0	1458	0.00%	100.00%
A1	Surface (1)	0	1396	0.00%	100.00%
	Mid (12)	0	1458	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
Total:		0	34846	0.00%	100.00%

Table B-16. Exceedance summary for running 30-day geometric mean fecal coliform objective at kelp bed stations from June 2003 through July 2007.

Fecal Coliform Objective: 200 per 100 ml 30-day Geometric Mean.					
Station	Depth (m)	# of times exceeded	# of observations	% >400	% ≤400
C6	Surface (1)	0	1427	0.00%	100.00%
	Mid (3)	0	1427	0.00%	100.00%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1370	0.00%	100.00%
C5	Surface (1)	0	1414	0.00%	100.00%
	Mid (3)	0	1414	0.00%	100.00%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1365	0.00%	100.00%
C4	Surface (1)	0	1427	0.00%	100.00%
	Mid (3)	0	1427	0.00%	100.00%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1370	0.00%	100.00%
C8	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
C7	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A6	Surface (1)	0	249	0.00%	100.00%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A7	Surface (1)	1	248	0.40%	99.60%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
A1	Surface (1)	1	249	0.40%	99.60%
	Mid (12)	0	249	0.00%	100.00%
	Bottom (18)	0	249	0.00%	100.00%
Total:		2	20182	0.01%	99.99%

Table B-17. Exceedance summary for running 30-day geometric mean enterococcus objective at kelp bed stations from June 2003 through July 2007.

Enterococcus Objective: 35 per 100 ml 30-day Geometric Mean.					
Station	Depth (m)	# of times exceeded	# of observations	% >104	% ≤104
C6	Surface (1)	0	1427	0.00%	100.00%
	Mid (3)	0	1427	0.00%	100.00%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1370	0.00%	100.00%
C5	Surface (1)	10	1414	0.71%	99.29%
	Mid (3)	10	1414	0.71%	99.29%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1365	0.00%	100.00%
C4	Surface (1)	23	1427	1.61%	98.39%
	Mid (3)	23	1427	1.61%	98.39%
	Bottom (6)	0	29	0.00%	100.00%
	Bottom (9)	0	1370	0.00%	100.00%
C8	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
C7	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
A6	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
A7	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
A1	Surface (1)	0	1489	0.00%	100.00%
	Mid (12)	0	1489	0.00%	100.00%
	Bottom (18)	0	1489	0.00%	100.00%
Total:		66	35063	0.19%	99.81%

Table B-18. Exceedance summary for single sample maximum total coliform objective at offshore stations in State waters from June 2003 through July 2007.

Total Coliform Objective in State Waters: 10,000 per 100 ml Single Sample Maximum.						
Contour (m)	Station	Depth (m)	# of times exceeded	# of observations	% >10,000	% ≤10,000
18	F03	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
	F02	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
	F01	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
60	F14	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F13	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F12	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F11	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F10	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F09	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F08	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	2	16	12.50%	87.50%
	F07	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F06	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
80	F20	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	3	15	20.00%	80.00%
		80	1	15	6.67%	93.33%
	F19	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	2	16	12.50%	87.50%
		80	4	16	25.00%	75.00%
	F18	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	1	16	6.25%	93.75%
		80	2	16	12.50%	87.50%
Total:			15	766	1.96%	98.04%

Table B-19. Exceedance summary for single sample maximum fecal coliform objective at offshore stations in State waters from June 2003 through July 2007.

Fecal Coliform Objective in State Waters: 400 per 100 ml Single Sample Maximum.						
Contour (m)	Station	Depth (m)	# of times exceeded	# of observations	% >400	% ≤400
18	F03	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
	F02	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
	F01	1	1	16	6.25%	93.75%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
60	F14	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F13	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F12	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F11	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F10	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	2	16	12.50%	87.50%
	F09	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	1	16	6.25%	93.75%
	F08	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	2	16	12.50%	87.50%
	F07	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F06	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
80	F20	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	6	16	37.50%	62.50%
		80	5	16	31.25%	68.75%
	F19	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	2	16	12.50%	87.50%
		80	7	16	43.75%	56.25%
	F18	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	2	16	12.50%	87.50%
		80	5	16	31.25%	68.75%
Total:			33	768	4.30%	95.70%

Table B-20. Exceedance summary for single sample maximum fecal-total ratio objective at offshore stations in State waters from June 2003 through July 2007.

Fecal-Total Ratio Objective in State Waters: 1000 per 100 ml Single Sample Maximum when Fecal-Total Coliform Ratio >0.1.						
Contour (m)	Station	Depth (m)	# of times exceeded	# of observations	% >1000	% ≤1000
18	F03	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
	F02	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
	F01	1	1	16	6.25%	93.75%
		12	1	16	6.25%	93.75%
		18	0	16	0.00%	100.00%
60	F14	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F13	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F12	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F11	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F10	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	3	16	18.75%	81.25%
	F09	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	2	16	12.50%	87.50%
	F08	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	3	16	18.75%	81.25%
	F07	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F06	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	1	16	6.25%	93.75%
80	F20	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	4	15	26.67%	73.33%
		80	5	15	33.33%	66.67%
	F19	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	5	16	31.25%	68.75%
		80	9	16	56.25%	43.75%
	F18	1	0	16	0.00%	100.00%
		25	1	16	6.25%	93.75%
		60	3	16	18.75%	81.25%
		80	7	16	43.75%	56.25%
Total:			45	766	5.87%	94.13%

Table B-21. Exceedance summary for single sample maximum enterococcus objective at offshore stations in State waters from June 2003 through July 2007.

Enterococcus Objective in State Waters: 104 per 100 ml Single Sample Maximum.						
Contour (m)	Station	Depth (m)	# of times exceeded	# of observations	% >104	% ≤104
18	F03	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
	F02	1	0	16	0.00%	100.00%
		12	0	16	0.00%	100.00%
		18	0	16	0.00%	100.00%
	F01	1	1	16	6.25%	93.75%
		12	1	16	6.25%	93.75%
		18	0	16	0.00%	100.00%
60	F14	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F13	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F12	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F11	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F10	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	1	16	6.25%	93.75%
	F09	1	1	16	6.25%	93.75%
		25	0	16	0.00%	100.00%
		60	1	16	6.25%	93.75%
	F08	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	1	16	6.25%	93.75%
	F07	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	0	16	0.00%	100.00%
	F06	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	1	16	6.25%	93.75%
80	F20	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	4	16	25.00%	75.00%
		80	3	16	18.75%	81.25%
	F19	1	0	16	0.00%	100.00%
		25	0	16	0.00%	100.00%
		60	3	16	18.75%	81.25%
		80	8	16	50.00%	50.00%
	F18	1	0	16	0.00%	100.00%
		25	1	16	6.25%	93.75%
		60	2	16	12.50%	87.50%
		80	5	16	31.25%	68.75%
Total:			33	768	4.30%	95.70%

Table B-22. Exceedance summary for running 30-day geometric mean total coliform objective at offshore stations in State waters from June 2003 through July 2007.

Total Coliform Objective in State Waters: 1,000 per 100 ml 30-day Geometric Mean.						
Contour (m)	Station	Depth (m)	# of times exceeded	# of observations	% >10,000	% ≤10,000
18	F03	1	0	437	0.00%	100.00%
		12	0	437	0.00%	100.00%
		18	0	437	0.00%	100.00%
	F02	1	0	437	0.00%	100.00%
		12	0	437	0.00%	100.00%
		18	0	437	0.00%	100.00%
	F01	1	31	436	7.11%	92.89%
		12	31	436	7.11%	92.89%
		18	0	436	0.00%	100.00%
60	F14	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	0	436	0.00%	100.00%
	F13	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	0	436	0.00%	100.00%
	F12	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	0	436	0.00%	100.00%
	F11	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	0	436	0.00%	100.00%
	F10	1	0	436	0.00%	100.00%
		25	93	436	21.33%	78.67%
		60	94	436	21.56%	78.44%
	F09	1	0	832	0.00%	100.00%
		25	0	486	0.00%	100.00%
		60	270	832	32.45%	67.55%
	F08	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	93	436	21.33%	78.67%
	F07	1	0	833	0.00%	100.00%
		25	0	467	0.00%	100.00%
		60	65	833	7.80%	92.20%
	F06	1	0	436	0.00%	100.00%
		25	31	436	7.11%	92.89%
		60	31	436	7.11%	92.89%
80	F20	1	0	437	0.00%	100.00%
		25	0	437	0.00%	100.00%
		60	125	406	30.79%	69.21%
		80	158	406	38.92%	61.08%
	F19	1	0	437	0.00%	100.00%
		25	0	437	0.00%	100.00%
		60	155	437	35.47%	64.53%
		80	249	437	56.98%	43.02%
	F18	1	0	436	0.00%	100.00%
		25	1	436	0.23%	99.77%
		60	93	436	21.33%	78.67%
		80	187	436	42.89%	57.11%
Total:			1707	22547	7.57%	92.43%

Table B-23. Exceedance summary for running 30-day geometric mean fecal coliform objective at offshore stations in State waters from June 2003 through July 2007.

Fecal Coliform Objective in State Waters: 200 per 100 ml 30-day Geometric Mean.						
Contour (m)	Station	Depth (m)	# of times exceeded	# of observations	% >400	% ≤400
18	F03	1	0	437	0.00%	100.00%
		12	0	437	0.00%	100.00%
		18	0	437	0.00%	100.00%
	F02	1	0	437	0.00%	100.00%
		12	0	437	0.00%	100.00%
		18	0	437	0.00%	100.00%
	F01	1	31	436	7.11%	92.89%
		12	0	436	0.00%	100.00%
		18	0	436	0.00%	100.00%
60	F14	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	0	436	0.00%	100.00%
	F13	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	0	436	0.00%	100.00%
	F12	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	0	436	0.00%	100.00%
	F11	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	0	436	0.00%	100.00%
	F10	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	93	436	21.33%	78.67%
	F09	1	0	832	0.00%	100.00%
		25	0	466	0.00%	100.00%
		60	209	832	25.12%	74.88%
	F08	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	93	436	21.33%	78.67%
	F07	1	0	833	0.00%	100.00%
		25	0	467	0.00%	100.00%
		60	57	833	6.84%	93.16%
	F06	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	31	436	7.11%	92.89%
80	F20	1	0	437	0.00%	100.00%
		25	0	437	0.00%	100.00%
		60	156	437	35.70%	64.30%
		80	220	437	50.34%	49.66%
	F19	1	0	437	0.00%	100.00%
		25	0	437	0.00%	100.00%
		60	124	437	28.38%	71.62%
		80	218	437	49.89%	50.11%
	F18	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	124	436	28.44%	71.56%
		80	218	436	50.00%	50.00%
Total:			1574	22589	6.97%	93.03%

Table B-24. Exceedance summary for running 30-day geometric mean enterococcus objective at offshore stations in State waters from June 2003 through July 2007.

Enterococcus Objective in State Waters: 35 per 100 ml 30-day Geometric Mean.						
Contour (m)	Station	Depth (m)	# of times exceeded	# of observations	% >104	% ≤104
18	F03	1	0	437	0.00%	100.00%
		12	0	437	0.00%	100.00%
		18	0	437	0.00%	100.00%
	F02	1	0	437	0.00%	100.00%
		12	0	437	0.00%	100.00%
		18	0	437	0.00%	100.00%
	F01	1	31	436	7.11%	92.89%
		12	62	436	14.22%	85.78%
		18	62	436	14.22%	85.78%
60	F14	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	31	436	7.11%	92.89%
	F13	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	62	436	14.22%	85.78%
	F12	1	0	436	0.00%	100.00%
		25	31	436	7.11%	92.89%
		60	0	436	0.00%	100.00%
	F11	1	0	436	0.00%	100.00%
		25	0	436	0.00%	100.00%
		60	31	436	7.11%	92.89%
	F10	1	0	436	0.00%	100.00%
		25	31	436	7.11%	92.89%
		60	62	436	14.22%	85.78%
	F09	1	31	632	4.91%	95.09%
		25	0	486	0.00%	100.00%
		60	211	832	25.36%	74.64%
	F08	1	0	1201	0.00%	100.00%
		25	0	1201	0.00%	100.00%
		60	164	1201	13.66%	86.34%
	F07	1	0	833	0.00%	100.00%
		25	0	467	0.00%	100.00%
		60	30	833	3.60%	96.40%
	F06	1	0	436	0.00%	100.00%
		25	31	436	7.11%	92.89%
		60	62	436	14.22%	85.78%
80	F20	1	0	437	0.00%	100.00%
		25	0	437	0.00%	100.00%
		60	125	437	28.60%	71.40%
		80	251	437	57.44%	42.56%
	F19	1	0	437	0.00%	100.00%
		25	0	437	0.00%	100.00%
		60	124	437	28.38%	71.62%
		80	249	437	56.98%	43.02%
	F18	1	0	436	0.00%	100.00%
		25	32	436	7.34%	92.66%
		60	124	436	28.44%	71.56%
		80	187	436	42.89%	57.11%
Total:			2024	24704	8.19%	91.81%

Table B-25(a). Long term average total coliform density in offshore waters from October 2003 through July 2007.
State waters are in **bold** font.

LTA (CFU/100 ml)		Water Depth (m)				
Contour (m)	Station	1	25	60	80	98
18	**F03**	**4**	**4**	**8**		
	F02	**3**	**3**	**7**		
	F01	**79**	**166**	**76**		
60	**F14**	**3**	**15**	**93**		
	F13	**2**	**9**	**173**		
	F12	**17**	**31**	**175**		
	F11	**35**	**21**	**235**		
	F10	**15**	**22**	**1343**		
	F09	**9**	**33**	**893**		
	F08	**4**	**71**	**2201**		
	F07	**2**	**65**	**67**		
	F06	**3**	**118**	**136**		
	F05	2	16	151		
	F04	5	5	108		
80	F25	3	2	670	1345	
	F24	4	4	155	1747	
	F23	20	10	1805	2999	
	F22	3	3	237	1598	
	F21	3	6	1894	1513	
	F20	**7**	**15**	**4062**	**2927**	
	F19	**3**	**15**	**2319**	**5376**	
	F18	**8**	**104**	**1455**	**3157**	
	F17	186	304	1069	2222	
	F16	12	279	559	324	
	F15	3	4	90	152	
98	F36	7	3	477	563	277
	F35	6	4	337	978	458
	F34	6	8	2283	3513	562
	F33	12	10	1759	5239	2259
	F32	13	15	2955	6301	2571
	F31	23	18	2390	6379	2498
	F30	65	65	5508	10668	5765
	F29	11	6	1347	2693	2039
	F28	9	7	1551	1794	408
	F27	15	8	419	2701	383
	F26	3	4	522	340	172

Table B-25(b). Maximum total coliform density in offshore waters from October 2003 through July 2007.
State waters are in **bold** font.

Max (CFU/100 ml)		Water Depth (m)				
Contour (m)	Station	1	25	60	80	98
18	**F03**	**20**	**20**	**30**		
	F02	**14**	**10**	**26**		
	F01	**1200**	**1400**	**280**		
60	**F14**	**20**	**98**	**400**		
	F13	**4**	**48**	**620**		
	F12	**220**	**340**	**840**		
	F11	**260**	**200**	**900**		
	F10	**200**	**100**	**9400**		
	F09	**84**	**140**	**7800**		
	F08	**20**	**800**	**16000**		
	F07	**6**	**520**	**480**		
	F06	**20**	**1300**	**1300**		
	F05	2	72	2000		
	F04	26	50	1400		
80	F25	20	6	4200	5600	
	F24	20	20	920	9000	
	F23	200	82	15000	15000	
	F22	10	10	1700	7400	
	F21	16	32	14000	7000	
	F20	**42**	**120**	**16000**	**16000**	
	F19	**6**	**68**	**16000**	**16000**	
	F18	**42**	**1300**	**16000**	**16000**	
	F17	2800	4600	16000	13000	
	F16	160	4400	8600	1800	
	F15	20	20	1100	940	
98	F36	54	16	7200	6800	1300
	F35	52	20	2400	11000	1600
	F34	20	56	18000	16000	2600
	F33	120	52	12000	16000	15000
	F32	66	110	16000	16000	16000
	F31	220	100	16000	16000	16000
	F30	400	420	16000	16000	16000
	F29	88	34	16000	16000	22000
	F28	56	28	14000	16000	3400
	F27	170	66	5000	22000	2400
	F26	8	20	8200	4200	980

Table B-26(a). Long term average fecal coliform density in offshore waters from October 2003 through July 2007.
State waters are in **bold** font.

LTA (CFU/100 ml)		Water Depth (m)				
Contour (m)	Station	1	25	60	80	98
18	**F03**	**2**	**2**	**4**		
	F02	**2**	**2**	**3**		
	F01	**33**	**26**	**14**		
60	**F14**	**2**	**4**	**15**		
	F13	**2**	**2**	**30**		
	F12	**4**	**4**	**31**		
	F11	**4**	**3**	**41**		
	F10	**2**	**5**	**246**		
	F09	**2**	**7**	**116**		
	F08	**2**	**10**	**458**		
	F07	**2**	**11**	**10**		
	F06	**2**	**10**	**28**		
	F05	2	5	34		
	F04	2	3	7		
80	F25	2	2	125	242	
	F24	2	2	30	448	
	F23	4	3	339	459	
	F22	3	2	44	230	
	F21	2	2	434	459	
	F20	**3**	**5**	**964**	**596**	
	F19	**2**	**7**	**591**	**1238**	
	F18	**2**	**14**	**435**	**763**	
	F17	36	73	262	380	
	F16	4	49	117	56	
	F15	2	2	16	22	
98	F36	2	2	68	142	72
	F35	2	2	78	334	129
	F34	2	3	482	817	134
	F33	4	3	424	1742	548
	F32	9	5	754	2467	519
	F31	4	6	1228	2077	660
	F30	17	10	2624	6551	3293
	F29	4	2	174	526	684
	F28	2	2	150	860	58
	F27	4	3	73	726	103
	F26	2	2	77	49	29

Table B-26(b). Maximum fecal coliform density in offshore waters from October 2003 through July 2007.
State waters are in **bold** font.

Max (CFU/100 ml)		Water Depth (m)				
Contour (m)	Station	1	25	60	80	98
18	**F03**	**8**	**4**	**12**		
	F02	**4**	**4**	**6**		
	F01	**500**	**160**	**70**		
60	**F14**	**2**	**22**	**82**		
	F13	**2**	**4**	**120**		
	F12	**30**	**26**	**100**		
	F11	**36**	**16**	**160**		
	F10	**2**	**20**	**2600**		
	F09	**4**	**24**	**1000**		
	F08	**2**	**78**	**3600**		
	F07	**2**	**70**	**54**		
	F06	**2**	**80**	**240**		
	F05	2	16	460		
	F04	4	14	40		
80	F25	2	2	980	1100	
	F24	4	2	280	4000	
	F23	32	22	4200	2600	
	F22	20	2	340	800	
	F21	2	2	2800	2600	
	F20	**8**	**26**	**5800**	**3200**	
	F19	**2**	**34**	**6000**	**5800**	
	F18	**4**	**160**	**5400**	**5400**	
	F17	520	1100	4000	2400	
	F16	26	760	1800	280	
	F15	2	4	180	120	
98	F36	2	2	960	1600	620
	F35	4	2	420	4000	560
	F34	4	6	3000	6000	680
	F33	26	8	2400	6400	3800
	F32	86	16	6000	12000	3400
	F31	22	36	9200	10000	6000
	F30	160	36	12000	12000	12000
	F29	26	6	2000	3600	9000
	F28	8	2	1100	12000	460
	F27	32	14	600	7200	660
	F26	2	2	1200	600	220

Table B-27(a). Long term average enterococcus density in offshore waters from October 2003 through July 2007.
State waters are in **bold** font.

LTA (CFU/100 ml)		Water Depth (m)				
Contour (m)	Station	1	25	60	80	98
18	**F03**	**2**	**2**	**2**		
	F02	**3**	**2**	**2**		
	F01	**9**	**17**	**9**		
60	**F14**	**3**	**2**	**9**		
	F13	**2**	**2**	**13**		
	F12	**2**	**5**	**11**		
	F11	**3**	**2**	**10**		
	F10	**2**	**6**	**35**		
	F09	**11**	**3**	**17**		
	F08	**2**	**4**	**41**		
	F07	**2**	**3**	**6**		
	F06	**2**	**6**	**23**		
	F05	2	3	10		
	F04	2	2	10		
80	F25	2	2	15	38	
	F24	2	2	9	53	
	F23	2	3	57	84	
	F22	2	2	17	56	
	F21	2	2	64	81	
	F20	**2**	**2**	**126**	**88**	
	F19	**2**	**2**	**68**	**139**	
	F18	**2**	**15**	**48**	**76**	
	F17	9	21	41	66	
	F16	2	11	12	10	
	F15	2	3	7	9	
98	F36	2	2	13	16	13
	F35	2	2	17	39	20
	F34	2	2	112	107	21
	F33	2	2	92	302	75
	F32	2	8	84	294	71
	F31	2	2	113	200	52
	F30	4	2	149	517	175
	F29	3	2	28	60	35
	F28	3	2	45	66	17
	F27	2	2	11	62	19
	F26	2	2	7	14	10

Table B-27(b). Maximum enterococcus density in offshore waters from October 2003 through July 2007.
State waters are in **bold** font.

Max (CFU/100 ml)		Water Depth (m)				
Contour (m)	Station	1	25	60	80	98
18	**F03**	**2**	**2**	**4**		
	F02	**20**	**2**	**2**		
	F01	**110**	**160**	**54**		
60	**F14**	**12**	**4**	**52**		
	F13	**2**	**6**	**62**		
	F12	**4**	**46**	**32**		
	F11	**14**	**4**	**50**		
	F10	**2**	**54**	**340**		
	F09	**140**	**10**	**120**		
	F08	**2**	**20**	**480**		
	F07	**2**	**10**	**22**		
	F06	**2**	**46**	**240**		
	F05	2	6	98		
	F04	2	2	88		
80	F25	2	2	120	160	
	F24	2	4	46	240	
	F23	4	22	380	320	
	F22	2	2	88	220	
	F21	2	2	420	300	
	F20	**2**	**2**	**1200**	**480**	
	F19	**2**	**4**	**440**	**500**	
	F18	**2**	**120**	**440**	**260**	
	F17	110	300	560	400	
	F16	2	150	130	34	
	F15	2	12	56	34	
98	F36	2	2	130	140	62
	F35	2	2	110	300	72
	F34	2	2	640	460	62
	F33	8	2	540	2200	740
	F32	4	100	720	1600	400
	F31	4	4	700	740	280
	F30	32	2	660	2400	740
	F29	24	4	280	340	340
	F28	20	2	500	720	82
	F27	4	4	84	600	120
	F26	2	2	78	90	38

APPENDIX C – LIST OF TABLES AND FIGURES

Linda S. Adams
Secretary for Environmental Protection

California Regional Water Quality Control Board
San Diego Region

Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Arnold Schwarzenegger
Governor

9174 Sky Park Court, Suite 100, San Diego, California 92123-4353
(858) 467-2952 • Fax (858) 571-6972
http:// www.waterboards.ca.gov/sandiego

SUPPORTING DOCUMENT 4

December 5, 2008

CERTIFIED MAIL
7006 0810 0000 6389 0190

In reply refer to:
CRU: 9 000000275: MVALD

Jim Barrett
Director of Public Utilities
600 B Street
Suite 400
San Diego, CA 92101-4514

Dear Mr. Barrett:

SUBJECT: DRAFT NPDES PERMIT NO. CA0107409 AND TENTATIVE ORDER NO. R9-2009-0001 FOR THE CITY OF SAN DIEGO E.W. BLOM POINT LOMA METROPOLITAN WASTEWATER TREATMENT PLANT DISCHARGE TO THE PACIFIC OCEAN THROUGH THE POINT LOMA OCEAN OUTFALL

The United States Environmental Protection Agency (USEPA) and the San Diego Regional Water Quality Control Board (Regional Water Board) have issued a draft National Pollutant Discharge Elimination System (NPDES) permit and tentative State waste discharge requirements (WDRs) for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant discharge to the Pacific Ocean through the Point Loma Ocean Outfall. USEPA and the Regional Water Board are proposing to reissue the NPDES permit and WDRs based on a variance from federal secondary treatment standards at Title 40, Part 133 of the Code of Federal Regulations, as provided for improved discharges under the Clean Water Act (CWA) section 301(h) and (j)(5) and 40 CFR 125, Subpart G.

Enclosed is a copy of the draft NPDES Permit No. CA0107409, tentative Order No. R9-2009-0001 (including fact sheet and monitoring and reporting program), public notice, and 301(h) Tentative Decision. The administrative record, including these documents as well as the permit application, comments received, and other relevant documents, is available for public review at the USEPA and Regional Water Board office locations (addresses given below) Monday through Friday, between 8:30 a.m. and 4:30 p.m., beginning December 5, 2008.

The USEPA and Regional Water Board will conduct a joint public hearing on these proposed actions, on January 21, 2009, at 9:00 a.m., at the following location:

San Diego Regional Water Quality Control Board
Regional Board Meeting Room
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Although the public comment period will remain open until 5:00 p.m. on January 28, 2009, persons commenting on the 301(h) tentative decision and draft permit/tentative order are strongly encouraged to submit their comments in writing by January 7, 2009, to facilitate consideration of the comments by the Regional Water Board on January 21, 2009. In order to assure the accuracy of the record, all oral comments made at the public hearing should also be submitted in writing.

The Regional Water Board will not take final action at the January 21, 2009 hearing, but will formally act on the permit/order at a subsequent board meeting. Upon issuance of a final permit decision and responses to comments, the USEPA and Regional Water Board will notify the applicant and persons who submitted written comments or requested notice of the final 301(h) permit decision. When a final 301(h) decision and permit/order are issued, they will become effective 33 days following the date they are mailed to the discharger, unless a request for review is filed. Persons filing a request for review must have filed comments on the 301(h) tentative decision and draft permit/tentative order, or participated in the public hearing, except as provided in 40 CFR 124.19.

Please review and submit comments on the 301(h) tentative decision and draft permit/tentative order to Robyn Stuber at USEPA and Melissa Valdovinos at the Regional Water Board during the public comment period.

Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105
(415) 972-3524
stuber.robyn@epa.gov

Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, California
(858) 467-2724
mvaldovinos@waterboards.ca.gov

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence, please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

Respectfully,

John H. Robertus

JOHN H. ROBERTUS
Executive Officer

JHR:dtb:bdk:mv

cc:
Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

cc by email only:
Dan Connally, PG Environmental; dan.connally@pgenv.com
Sandy Vissman, United States Fish and Wildlife Service; sandy_vissman@fws.gov
Bob Hoffman, National Marine Fisheries Service; bob.hoffman@noaa.gov
Mark Delaplaine, California Coastal Commission; mdelaplaine@coastal.ca.gov
Steve Juarez, California Department of Fish and Game; sjuarez@dfg.ca.gov
Ben McCue, WiLDCOAST; benjamin@wildcoast.net
Gabriel Solmer, Coastkeeper; gabe@sdcoastkeeper.org
Jim Peugh, San Diego Audubon Society; peugh@cox.net
Ed Kimura, Sierra Club; emkimura@earthlink.net
Marco Gonzalez, Surfrider Foundation; marco@coastlawgroup.com
Priya Verma, Heal the Ocean; priya@healtheocean.org

SUPPORTING DOCUMENT 5

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
9174 Sky Park Court, Suite 100, San Diego, CA 92123-4340
Phone (858) 467-2952 • Fax (858) 571-6972
http://www.waterboards.ca.gov/sandiego/

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, California 94105
http://www.epa.gov/region09/

TENTATIVE ORDER NO. R9-2009-0001
NPDES NO. CA0107409

WASTE DISCHARGE REQUIREMENTS AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR THE CITY OF SAN DIEGO E.W. BLOM POINT LOMA METROPOLITAN WASTEWATER TREATMENT PLANT DISCHARGE TO THE PACIFIC OCEAN THROUGH THE POINT LOMA OCEAN OUTFALL, SAN DIEGO COUNTY

The following Discharger is subject to waste discharge requirements as set forth in this Order and Permit:

Table 1. Discharger Information

Discharger	**City of San Diego**
Name of Facility	**E. W. Blom Point Loma Metropolitan Wastewater Treatment Plant, Collection System, and Ocean Outfall**
Facility Address	**1902 Gatchell Road**
	San Diego, CA 92106
	San Diego County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the City of San Diego from the discharge points identified below is subject to waste discharge requirements as set forth in this Order and Permit:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	**Advanced primary treated effluent**	32º 39’ 55” N	117º 19’ 25” W	Pacific Ocean

Table 3. Administrative Information for State Order

This Order was adopted by the Regional Water Quality Control Board on:	**<Add Adoption Date>**
This Order shall become effective on:	**<Add Effective Date>**
This Order shall expire on:	**<Add Date No More Than Five Years after Effective Date>**
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**<Add 180 Days Prior to the Order Expiration Date>**

I, John Robertus, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on **<Add Adoption Date>.**

John Robertus, Executive Officer

Table 4. Administrative Information for Federal Permit

This permit was issued by the U.S. Environmental Protection Agency, Region IX on:	**<Add Issuance Date>**
This permit shall become effective on:	**<Add Effective Date>**
This permit shall expire on:	**<Add Expiration Date>**
The Discharger shall submit, in accordance with 40 CFR 122.21(d), a new application at least 180 days before the expiration date of the existing permit:	**<Add Date 180 Days Prior to the Order Expiration Date>**

I, Alexis Strauss, do hereby certify that this permit with all attachments is a full, true, and correct copy of a NPDES permit issued by the U.S. Environmental Protection Agency, Region IX, on **<Add Issuance Date>**.

Alexis Strauss, Water Division Director

Table of Contents

List of Tables

List of Attachments

I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order and Permit:

Table 5. Facility Information

Discharger	**City of San Diego**
Name of Facility	**E. W. Blom Point Loma Metropolitan** **Wastewater Treatment Plant, Collection System, and Ocean Outfall**
Facility Address	**1902 Gatchell Road**
	San Diego, CA 92106
	San Diego County
Facility Contact, Title, and Phone	**Jim Barrett** **Director of Public Utilities** **(619) 533-7555**
Mailing Address	**600 B Street, Suite 400** **San Diego, CA 92101-4514**
Type of Facility	**Publicly-Owned Treatment Works**
Facility Design Flow	**240 Million Gallons per Day (MGD)**

II. FINDINGS

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Water Board) and the U.S. Environmental Protection Agency, Region IX (hereinafter USEPA), find:

A. Background. The City of San Diego Metropolitan Wastewater Department (hereinafter Discharger) is currently discharging pursuant to Order No. R9-2002-0025, as amended, and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0107409, as modified. The Discharger has submitted a Report of Waste Discharge (ROWD) and applied for a 301(h)-modified NPDES permit renewal to discharge up to 240 MGD of chlorinated advanced primary treated wastewater from the E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant (hereinafter Facility). The application was deemed complete on June 6, 2008.

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

Facility Description. The Discharger owns and operates its collection system, an advance primary treatment facility, and ocean outfall (POTW). The treatment system consists of mechanical bar screens, aerated grit removal, chemical addition, and sedimentation and partial chlorination. Wastewater is discharged from Discharge Point No. 001 (see table on cover page) to the Pacific Ocean, a water of the United States. The ocean outfall discharges wastewater effluent approximately 4.5 miles offshore. Although this is beyond the limit of State-regulated ocean waters, potential plume migration within this limit warrants joint regulation of the effluent, from USEPA as well as the State.

In addition to domestic sewage and industrial discharges, the Facility accepts flow and pollutants from low-flow urban runoff diversion systems and “first flush” industrial stormwater diversion systems that are routed to the sanitary sewer collection system.

This Order and Permit establish discharge requirements based on modified secondary treatment requirements in accordance with federal Clean Water Act (CWA) Sections 301(h) and (j)(5). A detailed facility description is provided in Attachment F to this Order and Permit. Attachment B provides a map of the area around the facility. Attachment C provides flow schematics of the facility.

B. Legal Authorities. This Order and Permit are issued pursuant to Section 402 of the federal CWA and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with Section 13370). It shall serve as a jointly-issued federal and State NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with Section 13260).

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

D. California Environmental Quality Act (CEQA). Under Water Code Section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code Sections 21100-21177.

E. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at Section 122.44, title 40 of the Code of Federal Regulations[1], require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order and Permit must meet minimum requirements based on a variance from secondary treatment standards, as specified in CWA Sections 301 (h) and (j)(5). A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

F. Water Quality-Based Effluent Limitations. Section 301(b) of the CWA and Section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

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

G. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan for the San Diego Region (hereinafter Basin Plan) on September 8, 1994 that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean and other receiving waters addressed through the plan. Subsequent revisions to the Basin Plan have also been adopted by the Regional Water Board and approved by the

[1] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

State Water Board. Beneficial uses applicable to the Pacific Ocean specified in the Basin Plan are as follows:

Table 6. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	Industrial Service Supply; navigation; contact water recreation; non-contact water recreation; commercial and sport fishing; preservation of biological habitats of special significance; wildlife habitat; rare, threatened, or endangered species, marine habitat, aquaculture, migration of aquatic organisms; spawning, reproduction, and/or early development; shellfish harvesting

Requirements of this Order implement the Basin Plan.

H. California Ocean Plan. The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

Table 7. Ocean Plan Beneficial Uses

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

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

I. Alaska Rule. On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and tribal water quality standards (WQS) become effective for CWA purposes. (40 CFR § 131.21; 65 Fed. Reg. 24641 (April 27, 2000).) Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

J. Stringency of Requirements for Individual Pollutants. This Order contains effluent limitations for total suspended solids (TSS) and biochemical oxygen demand (5-day @ 20°C; BOD5) based on CWA Sections 301(h) and (j)(5), as described in the Fact Sheet for this permit.

This Order contains technology-based effluent limitations for TSS, oil and grease, settleable solids, turbidity, and pH, based on Table A requirements in the Ocean Plan. This Order's technology-based effluent limitations are not more stringent than required by the CWA.

This Order contains water quality based effluent limitations (WQBELs) that have been scientifically derived to implement water quality objectives in Table B of the Ocean Plan that protect beneficial uses. Both the beneficial uses and water quality objectives have been approved pursuant to federal law and are the applicable State water quality standards. The scientific procedures for calculating individual WQBELs are based on the Ocean Plan which was approved by USEPA on February 14, 2006. All beneficial uses and water quality objectives contained in the Basin Plan are approved under State law and were submitted to, and approved by, USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR 131.21(c)(1).

Collectively, this Order's restrictions on individual pollutants are not more stringent than required by the CWA.

K. Antidegradation Policy. Section 131.12 requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet the permitted discharge is consistent with the antidegradation provision of Section 131.12 and State Water Board Resolution No. 68-16.

L. Anti-Backsliding Requirements. CWA Section 402(o) and 40 CFR 122.44(l) prohibit the backsliding of effluent limitations, conditions, and standards in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent that those in the previous Order. As discussed in detail in the Fact Sheet this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

M. California Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code Sections 2050 to 2097). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Discharger is responsible for meeting all requirements of the California Endangered Species Act.

N. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code Sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements, including those found under CWA Section 301(h) and 40 CFR 125, Subpart G. The Monitoring and Reporting Program is provided in Attachment E.

O. Standard and Special Provisions. Standard Provisions which apply to all NPDES permits in accordance with 40 CFR 122.41 and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Regional Water Board and USEPA have also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

P. Storm Water Requirements. On November 16, 1990, the USEPA promulgated NPDES permit application requirements for storm water discharges (40 CFR 122, 123, and 124) which are applicable to the Facility. On April 17, 1997, the State Water Board adopted Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities. Storm water discharges from wastewater treatment facilities tributary to the Point Loma Ocean Outfall (PLOO) are subject to the terms and conditions of Order No. 97-03-DWQ, as amended.

Q. Sanitary Sewer Overflows. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on May 2, 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger’s collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, Section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006.

R. Reclamation of Wastewater. The Constitution of California states, “…the general welfare requires that the water resources of the State be put to the beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare." Based on this constitutional declaration and other considerations, the State Water Board has concluded that "in all cases where an applicant in a water-short area proposes a discharge of once-used wastewater to the ocean, the report of waste discharge should include an explanation as to why the effluent is not being reclaimed for further beneficial use." (State Water Board Order No. WQ 84-7) It has been and continues to be the policy of the Regional Water Board to encourage reclamation and reuse of water resources.

S. 301(h) Tentative Decision. USEPA has drafted a 301(h) Tentative Decision Document (TDD) evaluating the Discharger's proposed improved discharge and effluent limitations for TSS and BOD_5, the projected annual average end-of-permit effluent flow rate of 202 MGD (annual average daily flow), and 2002 through 2007 effluent concentrations for TSS and BOD_5, as provided in the updated 2007 301(h) application. The 2008 TDD concludes that the Discharger's 301(h) application satisfies CWA Sections 301(h) and 301(j)(5). Based on this information, it is the Regional Administrator's tentative decision to grant the Discharger's variance request for TSS and BOD_5, in accordance with the terms, conditions, and limitations of the TDD. In accordance with this decision and the 1984 301(h) Memorandum of Understanding between the State and USEPA, the Regional Water Board and USEPA have jointly proposed issuance of a draft 301(h)-modified permit incorporating both federal NPDES requirements and State Waste Discharge Requirements. The final permit will be issued without prejudice to the rights of any party to address the legal issue of the applicability of Section 1311(j)(5) of the Act to the Discharger's future NPDES permits.

T. Permit Renewal Contingency. The Discharger's permit renewal of the variance from federal secondary treatment standards, pursuant to CWA Sections 301(h) and (j)(5), is contingent upon:

1. Determination by the California Coastal Commission that the proposed discharge is consistent with the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 *et seq.*);

2. Determination by the U.S. Fish and Wildlife Service and the NOAA National Marine Fisheries Service that the proposed discharge is consistent with the federal Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*);

3. Determination by the NOAA National Marine Fisheries Service that the proposed discharge is consistent with the Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 U.S.C. 1801, *et seq.*);

4. Determination by the Regional Water Board that the discharge will not result in additional treatment pollution control, or other requirement, on any other point or nonpoint sources (40 CFR 125.64);

5. The Regional Water Board's certification/concurrence that the discharge will comply with water quality standards for the pollutants which the 301(h) variance is requested

(40 CFR 125.61) (i.e., TSS and BOD_5). The joint issuance of a NPDES permit which incorporates both the 301(h) variance and State waste discharge requirements will serve as the State's concurrence; and

6. The USEPA Regional Administrator's final decision regarding the Discharger's CWA Section 301(h) variance request.

U. Notification of Interested Parties. The Regional Water Board and USEPA have notified the Discharger and interested agencies and persons of their intent to issue Waste Discharge Requirements and a NPDES permit for the discharge and have provided them with an opportunity to submit their written and oral comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

V. Consideration of Public Comment. The Regional Water Board and USEPA, at a joint public hearing, heard and considered all comments pertaining to the discharge. Details of the public hearings conducted by the Regional Water Board and USEPA are provided in the Fact Sheet of this Order.

THEREFORE, IT IS HEREBY ORDERED, that this Order supercedes Order No. R9-2002-0025 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with Section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. The discharge of waste in a manner or to locations that have not been specifically authorized by this Order and Permit, or for which valid waste discharge requirements and NPDES permits are not in force, is prohibited.

B. Discharge through the PLOO from the Facility in excess of an average daily flow rate of 240 MGD is prohibited.

C. The discharge of any pollutant that is not subject to an effluent limitation in this Order and Permit is prohibited, except in the following circumstances:

1. The pollutant has been identified in the administrative record for this Order and Permit,

2. The pollutant has not been identified in the administrative record for the Order and Permit, so long as the Discharger:

a. Has complied with all applicable requirements for disclosure of information about its pollutant discharges, operations, and sources of wastes; and

b. Complies with all applicable requirements for notification of changes in its operations and discharges.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations and Performance Goals – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001

The discharge of effluent to Discharge Point No. 001 shall be measured at Monitoring Location EFF-001 as described in Attachment E, Monitoring and Reporting Program, except as otherwise noted. The effluent limitations and performance goals below are enforceable to the number of significant digits given in the effluent limitation or performance goal.

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location No. EFF-001 as described in the attached MRP:

Table 8.a. Effluent Limitations Based on CWA Sections 301(h) and (j)(5)

Effluent Constituent	Units	Annual Average	Monthly Average
TSS	% removal[1]	---	≥80
	mg/l	---	75[4]
	metric tons/year	15,000[2]	---
		13,598[3]	---
BOD5	% removal[1]	≥58	---

[1] To be calculated on a system-wide basis, as provided in Addendum No. 1 to Order No. R9-2002-0025.
[2] To be achieved on permit effective date through December 31, 2013. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[3] To be achieved on January 1, 2014. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[4] Based on average monthly performance data (1990 through 1994) for the Point Loma WTP provided by the Discharger for the 1995 301(h) application.

Table 8.b. Effluent Limitations Based on Advanced Primary Treatment and Table A of the Ocean Plan

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Oil and Grease	mg/L	25	40	--	--	75
	lbs/day	42,743	68,388	---	--	128,228
Total Suspended Solids	% removal	[1]	--	--	--	--
Settleable Solids	ml/L	1.0	1.5	--	--	3.0
Turbidity	NTU	75	100	--	--	225
pH	Standard unit	--	--	--	6.0	9.0

[1] The Discharger shall, as a 30-day average, remove 75% of suspended solids from the influent stream to the Facility before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L.

b. The discharge of effluent from the Discharger's Facilities to Discharge Point No. 001, as monitored at Monitoring Location EFF-001, shall maintain compliance with the following effluent limitations:

Table 9. Effluent Limitations Based on Table B of the Ocean Plan

Parameter	Unit	Water Quality-Based Effluent Limitations			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
BASED ON OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Chronic Toxicity[1]	TUc	--	205	--	--
Total Chlorine Residual	µg/L	4.1E+02	1.6E+03	1.2E+04	--
	lbs/day	7.0E+02	2.8E+03	2.1E+04	--
Phenolic Compounds (non-chlorinated)	µg/L	6.2E+03	2.5E+04	6.2E+04	--
	lbs/day	1.1E+04	4.2E+04	1.1E+05	--
Chlorinated Phenolics	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Chlordane[2]	µg/L	--	--	--	4.7E-03
	lbs/day	--	--	--	8.1E-03
Chlorodibromomethane	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.0E+03
Chloroform	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
1,4-Dichlorobenzene	µg/L	--	--	--	3.7E+03
	lbs/day	--	--	--	6.3E+03
Dichlorobromomethane	µg/L	--	--	--	1.3E+03
	lbs/day	--	--	--	2.2E+03
Dichloromethane	µg/L	--	--	--	9.2E+04
	lbs/day	--	--	--	1.6E+05
Halomethanes[3]	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
Heptachlor	µg/L	--	--	--	1.0E-02
	lbs/day	--	--	--	1.8E-02

[1] Chronic toxicity is expressed as Chronic Toxicity Units (TUc) = 100/NOEL, where NOEL (No Observed Effect Level) is expressed as the maximum percent effluent that causes no observable effect on a test organism.
[2] Chlordanes represent the sum of chlordane-alpha, chlordane-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.
[3] Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

c. Constituents that do not have reasonable potential or had inconclusive reasonable potential analysis results are referred to as performance goal constituents and assigned the performance goals listed in the following table. Performance goal constituents shall also be monitored at EFF-001, but the results will be used for informational purposes only, not compliance determination.

Table 10. Performance Goals Based on the Ocean Plan (Concentrations and Daily Mass Emissions).

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
BASED ON OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	1.0E+03	5.9E+03	1.6E+04	--
	lbs/day	1.8E+03	1.0E+04	2.7E+04	--
Cadmium, Total Recoverable	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Chromium VI, Total Recoverable[2]	µg/L	4.1E+02	1.6E+03	4.1E+03	--
	lbs/day	7.0E+02	2.8E+03	7.0E+03	--
Copper, Total Recoverable	µg/L	2.1E+02	2.1E+03	5.7E+03	--
	lbs/day	3.5E+02	3.5E+03	9.8E+03	--
Lead, Total Recoverable	µg/L	4.1E+02	1.6E+03	4.1E+03	--
	lbs/day	7.0E+02	2.8E+03	7.0E+03	--
Mercury, Total Recoverable[11]	µg/L	8.1	3.3E+01	8.2E+01	--
	lbs/day	1.4E+01	5.6E+01	1.4E+02	--
Nickel, Total Recoverable	µg/L	1.0E+03	4.1E+03	1.0E+04	--
	lbs/day	1.8E+03	7.0E+03	1.8E+04	--
Selenium, Total Recoverable	µg/L	3.1E+03	1.2E+04	3.1E+04	--
	lbs/day	5.3E+03	2.1E+04	5.3E+04	--
Silver, Total Recoverable	µg/L	1.1E+02	5.4E+02	1.4E+03	--
	lbs/day	1.9E+02	9.3E+02	2.4E+03	--
Zinc, Total Recoverable	µg/L	2.5E+03	1.5E+04	3.9E+04	--
	lbs/day	4.2E+03	2.5E+04	6.7E+04	--
Cyanide, Total Recoverable[3]	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Ammonia (expressed as nitrogen)	µg/L	1.2E+05	4.9E+05	1.2E+06	--
	lbs/day	2.1E+05	8.4E+05	2.1E+06	--
Acute Toxicity	TUa	NA	6.42	NA	--
Endosulfan[10]	µg/L	1.8	3.7	5.5	--
	lbs/day	3.2	6.3	9.5	--
Endrin	µg/L	0.41	0.82	1.2	--
	lbs/day	0.7	1.4	2.1	--
HCH[4]	µg/L	0.82	1.6	2.5	--
	lbs/day	1.4	2.8	4.2	--

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
Radioactivity	pci/l	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations, Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	--	--	--	4.5E+04
	lbs/day	--	--	--	7.7E+04
Antimony	µg/L	--	--	--	2.5E+05
	lbs/day	--	--	--	4.2E+05
Bis(2-chloroethoxy) Methane	µg/L	--	--	--	9.0E+02
	lbs/day	--	--	--	1.5E+03
Bis(2-chloroisopropyl) ether	µg/L	--	--	--	2.5E+05
	lbs/day	--	--	--	4.2E+05
Chlorobenzene	µg/L	--	--	--	1.2E+05
	lbs/day	--	--	--	2.0E+05
Chromium, Total Recoverable (III)	µg/L	--	--	--	3.9E+07
	lbs/day	--	--	--	6.7E+07
Di-n-butyl Phthalate	µg/L	--	--	--	7.2E+05
	lbs/day	--	--	--	1.2E+06
Dichlorobenzenes[5]	µg/L	--	--	--	1.0E+06
	lbs/day	--	--	--	1.8E+06
Diethyl Phthalate	µg/L	--	--	--	6.8E+06
	lbs/day	--	--	--	1.2E+07
Dimethyl Phthalate	µg/L	--	--	--	1.7E+08
	lbs/day	--	--	--	2.9E+08
4,6-dinitro-2-methylphenol	µg/L	--	--	--	4.5E+04
	lbs/day	--	--	--	7.7E+04
2,4-dinitrophenol	µg/L	--	--	--	8.2E+02
	lbs/day	--	--	--	1.4E+03
Ethylbenzene	µg/L	--	--	--	8.4E+05
	lbs/day	--	--	--	1.4E+06
Fluoranthene	µg/L	--	--	--	3.1E+03
	lbs/day	--	--	--	5.3E+03
Hexachlorocyclopentadiene	µg/L	--	--	--	1.2E+04
	lbs/day	--	--	--	2.0E+04
Nitrobenzene	µg/L	--	--	--	1.0E+03
	lbs/day	--	--	--	1.7E+03
Thallium, Total Recoverable	µg/L	--	--	--	4.1E+02

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
	lbs/day	--	--	--	7.0E+02
Toluene	µg/L	--	--	--	1.7E+07
	lbs/day	--	--	--	3.0E+07
Tributyltin	µg/L	--	--	--	2.9E-01
	lbs/day	--	--	--	4.9E-01
1,1,1-trichloroethane	µg/L	--	--	--	1.1E+08
	lbs/day	--	--	--	1.9E+08
BASED ON OBJECTIVES FOR PROTECTION OF HUMAN HEALTH - CARCINOGENS					
Acrylonitrile	µg/L	--	--	--	21
	lbs/day	--	--	--	35
Aldrin	µg/L	--	--	--	4.5E-03
	lbs/day	--	--	--	7.7E-03
Benzene	µg/L	--	--	--	1.2E+03
	lbs/day	--	--	--	2.1E+03
Benzidine	µg/L	--	--	--	1.4E-02
	lbs/day	--	--	--	2.4E-02
Beryllium	µg/L	--	--	--	6.8
	lbs/day	--	--	--	1.2E+01
Bis(2-chloroethyl) Ether	µg/L	--	--	--	9.2
	lbs/day	--	--	--	1.6E+01
Bis(2-ethlyhexyl) Phthalate	µg/L	--	--	--	7.2E+02
	lbs/day	--	--	--	1.2E+03
Carbon Tetrachloride	µg/L	--	--	--	1.8E+02
	lbs/day	--	--	--	3.2E+02
DDT[6]	µg/L	--	--	--	3.5E-02
	lbs/day	--	--	--	6.0E-02
3,3'-dichlorobenzidine	µg/L	--	--	--	1.7
	lbs/day	--	--	--	2.8
1,2-dichloroethane	µg/L	--	--	--	5.7E+03
	lbs/day	--	--	--	9.8E+03
1,1-dichloroethylene	µg/L	--	--	--	1.8E+02
	lbs/day	--	--	--	3.2E+02
1,3-dichloropropene	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.1E+03
Dieldrin	µg/L	--	--	--	8.2E-03
	lbs/day	--	--	--	1.4E-02
2,4-dinitrotoluene	µg/L	--	--	--	5.3E+02
	lbs/day	--	--	--	9.1E+02

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
1,2-diphenylhydrazine	µg/L	--	--	--	3.3E+01
	lbs/day	--	--	--	5.6E+01
Heptachlor Epoxide	µg/L	--	--	--	4.1E-03
	lbs/day	--	--	--	7.0E-03
Hexachlorobenzene	µg/L	--	--	--	4.3E-02
	lbs/day	--	--	--	7.4E-02
Hexachlorobutadiene	µg/L	--	--	--	2.9E+03
	lbs/day	--	--	--	4.9E+03
Hexachloroethane	µg/L	--	--	--	5.1E+02
	lbs/day	--	--	--	8.8E+02
Isophorone	µg/L	--	--	--	1.5E+05
	lbs/day	--	--	--	2.6E+05
N-nitrosodimethylamine	µg/L	--	--	--	1.5E+03
	lbs/day	--	--	--	2.6E+03
N-nitrosodi-N-propylamine	µg/L	--	--	--	7.8E+01
	lbs/day	--	--	--	1.3E+02
N-nitrosodiphenylamine	µg/L	--	--	--	5.1E+02
	lbs/day	--	--	--	8.8E+02
PAHs[7]	µg/L	--	--	--	1.8
	lbs/day	--	--	--	3.1
PCBs[8]	µg/L	--	--	--	3.9E-03
	lbs/day	--	--	--	6.7E-03
TCDD equivalents[9]	µg/L	--	--	--	8.0E-07
	lbs/day	--	--	--	1.4E-06
1,1,2,2-tetrachloroethane	µg/L	--	--	--	4.7E+02
	lbs/day	--	--	--	8.1E+02
Tetrachloroethylene	µg/L	--	--	--	4.1E+02
	lbs/day	--	--	--	7.0E+02
Toxaphene	µg/L	--	--	--	4.3E-02
	lbs/day	--	--	--	7.4E-02
Trichloroethylene	µg/L	--	--	--	5.5E+03
	lbs/day	--	--	--	9.5E+03
1,1,2-trichloroethane	µg/L	--	--	--	1.9E+03
	lbs/day	--	--	--	3.3E+03
2,4,6-trichlorophenol	µg/L	--	--	--	5.9E+01
	lbs/day	--	--	--	1.0E+02
Vinyl Chloride	µg/L	--	--	--	7.4E+03
	lbs/day	--	--	--	1.3E+04

[1] Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following "E" indicates the position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^{2} or 610, and 6.1E+00 represents 6.1×10^{0} or 6.1.

[2] Dischargers may, at their option, meet this limitation (or apply this performance goal) as a total chromium limitation (or performance goal).

[3] If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometalic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR 136, as revised May 14, 1999.

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

[5] Dichlorobenzenes represent the sum of 1,2- and 1,3-dichlorobenzene.

[6] DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDT (dichlorodiphenyltrichloroethane) represent the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.

[7] PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenapthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

[8] PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

[9] TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 1613 shall be used to analyze TCDD equivalents.

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

[10] Endosulfan shall mean the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.

[11] USEPA Method 1631E, with a quantitation level of 0.5 ppt (0.5 ng/L), shall be used to analyze total mercury.

d. USEPA Toxics Mass Emission Benchmarks.

These mass emission benchmarks are established to address the uncertainty due to projected increases in toxic pollutant loadings from the Point Loma WTP to the marine environment during the 5-year 301(h) variance, and to establish a framework for evaluating the need for an antidegradation analysis to determine compliance with water quality standards at the time of permit reissuance. The benchmarks contained in Order No. R9-2002-0025 are retained for this permit.

The annual mass emission benchmarks for the 1995 permit were determined using 1990 through April 1995 n-day average monthly performance (95th percentile) of the Point Loma WTP and the Discharger's projected end-of-permit effluent flow of 205 mgd for the 1995 301(h) application. For the 2003 permit, mass emission benchmarks for copper and selenium were recalculated using the 1994 n-day average monthly performance (95th percentile) and 205 mgd and the mass emission benchmark for cyanide was corrected. Average monthly performance was calculated as outlined in Appendix E of *Technical Support Document for Water Quality-based Toxics Control* (EPA/5005/2-90-001, 1991; TSD)

These mass emission benchmarks are not water quality-based effluent limitations and are not enforceable, as such. The mass emission threshold values may be re-evaluated and modified during the permit term, or the permit may be modified to incorporate water quality-based effluent limits, in accordance with the requirements set forth at 40 CFR 122.62 and 124.5. The following effluent mass emission benchmarks for toxic and carcinogenic materials apply to the undiluted effluent from Point Loma WTP discharged to the PLOO:

Table 11. Performance Goals Based on the Ocean Plan (Annual Mass Emissions).

Effluent Constituent	Units	Annual Mass Emission
Arsenic	mt/yr	0.88
Cadmium	mt/yr	1.4
Chromium (hexavalent)	mt/yr	14.2
Copper	mt/yr	26
Lead	mt/yr	14.2
Mercury[10]	mt/yr	0.19
Nickel	mt/yr	11.3
Selenium	mt/yr	0.44
Silver	mt/yr	2.8
Zinc	mt/yr	18.3
Cyanide[1]	mt/yr	1.57
Ammonia (as N)	mt/yr	8018
Phenolic compounds (non-chlorinated)	mt/yr	2.57
Chlorinated phenolics	mt/yr	1.73
Endosulfan[9]	mt/yr	0.006
Endrin	mt/yr	0.008
HCH[2]	mt/yr	0.025
Acrolein	mt/yr	17.6
Antimony	mt/yr	56.6
Bis(2-chloroethoxy) methane	mt/yr	1.5
Bis(2-chloroisopropyl) ether	mt/yr	1.61
Chlorobenzene	mt/yr	1.7
Di-n-butyl phthalate	mt/yr	1.33

Effluent Constituent	Units	Annual Mass Emission
Dichlorobenzenes[3]	mt/yr	2.8
Diethyl phthalate	mt/yr	6.23
Dimethyl phthalate	mt/yr	1.59
4,6-dinitro-2-methylphenol	mt/yr	6.8
2,4-dinitrophenol	mt/yr	11.9
Ethylbenzene	mt/yr	2.04
Flouranthene	mt/yr	0.62
Nitrobenzene	mt/yr	2.07
Thallium	mt/yr	36.8
Toluene	mt/yr	3.31
Tributyltin	mt/yr	0.001
1,1,1-trichloroethane	mt/yr	2.51
Acrylonitrile	mt/yr	5.95
Aldrin	mt/yr	0.006
Benzene	mt/yr	1.25
Benzidine	mt/yr	12.5
Beryllium	mt/yr	1.42
Bis(2-chloroethyl) ether	mt/yr	1.61
Bis(2-ethylhexyl) phthalate	mt/yr	2.89
Carbon tetrachloride	mt/yr	0.79
Chlordane[5]	mt/yr	0.014
Chloroform	mt/yr	2.19
DDT[4]	mt/yr	0.043
1,4-dichlorobenzene	mt/yr	1.25
3,3'-dichlorobenzidine	mt/yr	4.67
1,2-dichloroethane	mt/yr	0.79
1,1-dichloroethylene	mt/yr	0.79
Dichloromethane	mt/yr	13.7
1,3-dichloropropene	mt/yr	1.42
Dieldrin	mt/yr	0.011
2,4-dinitrotoluene	mt/yr	1.61
1,2-diphenylhydrazine	mt/yr	1.52
Halomethanes[6]	mt/yr	5.86
Heptachlor	mt/yr	0.001
Heptachlor epoxide	mt/yr	0.024
Hexachlorobenzene	mt/yr	0.54
Hexachlorobutadiene	mt/yr	0.54
Hexachloroethane	mt/yr	1.13
Isophorone	mt/yr	0.71
N-nitrosodimethylamine	mt/yr	0.76
N-nitrosodiphenylamine	mt/yr	1.47
PAHs[7]	mt/yr	15.45
PCBs[8]	mt/yr	0.275
1,1,2,2-tetrachloroethane	mt/yr	1.95
Tetrachloroethylene	mt/yr	4
Toxaphene	mt/yr	0.068
Trichloroethylene	mt/yr	1.56
1,1,2-trichloroethane	mt/yr	1.42

Effluent Constituent	Units	Annual Mass Emission
2,4,6-trichlorophenol	mt/yr	0.96
Vinyl chloride	mt/yr	0.4

[1] If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometalic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR 136, as revised May 14, 1999.

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

[3] Dichlorobenzenes represent the sum of 1,2- and 1,3-dichlorobenzene.

[4] DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDT (dichlorodiphenyltrichloroethane) represent the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.

[5] Chlordanes represent the sum of chlordane-alpha, chlordane-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

[6] Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

[7] PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenapthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

[8] PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

[9] Endosulfan shall mean the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.

[10] USEPA Method 1631E, with a quantitation level of 0.5 ppt (0.5 ng/L), shall be used to analyze total mercury

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

Unless specifically excepted by this Order, the discharge, by itself or jointly with any other discharge(s), shall not cause violation of the numerical water quality objectives established in Chapter II, Table B of the Ocean Plan and shall not cause a violation of the following water quality objectives. Compliance with these objectives shall be determined by samples collected at stations representative of the area within the waste field where initial dilution is completed.

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and Ocean Plan and are a required part of this Order. The discharge shall not cause the following in the Pacific Ocean:

1. Bacterial Characteristics

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

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

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

2) Fecal coliform density shall not exceed 200 per 100 ml; and

3) Enterococcus density shall not exceed 35 per 100 ml.

ii. Single Sample Maximum:

1) Total coliform density shall not exceed 10,000 per 100 ml;

2) Fecal coliform density shall not exceed 400 per 100 ml;

3) Enterococcus density shall not exceed 104 per 100 ml; and

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

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

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

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

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

e. Ocean waters beyond the outer limit of the territorial sea shall not exceed the following 304(a)(1) criteria for enterococcus density beyond the zone of initial dilution in areas where primary contact recreation, as defined in USEPA guidance, occurs. USEPA describes the “primary contact recreation” use as protective when the potential for ingestion of, or immersion in, water is likely. Activities usually include swimming, water-skiing, skin-diving, surfing, and other activities likely to result in immersion. (Water Quality Standards Handbook, EPA-823-B-94-005a, 1994, p. 2-2.)

Table 12. 304(a)(1) ambient water quality criteria for bacteria in federal waters where primary contact recreation occurs.

Indicator	30-day Geometric Mean (per 100 ml)	Single Sample Maximum (per 100 ml)
Enterococci	35	104 for designated bathing beach
		158 for moderate use
		276 for light use
		501 for infrequent use

2. Physical Characteristics

a. Floating particulates and grease and oil shall not be visible.

b. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.

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

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

3. Chemical Characteristics

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

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

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

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

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

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

g. Waste management systems that discharge to the ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.

h. Waste discharged to the ocean must be essentially free of:

- **i.** Material that is floatable or will become floatable upon discharge.
- **ii.** Settleable material or substances that may form sediments which will degrade benthic communities or other aquatic life.
- **iii.** Substances which will accumulate to toxic levels in marine waters, sediments or biota.
- **iv.** Substances that significantly decrease the natural light to benthic communities and other marine life.
- **v.** Materials that result in aesthetically undesirable discoloration of the ocean surface.

i. Waste effluents shall be discharged in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.

j. Location of waste discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:

- **i.** Pathogenic organisms and viruses are not present in areas where shellfish are harvested for human consumption or in areas used for swimming or other body-contact sports.
- **ii.** Natural water quality conditions are not altered in areas designated as being of special biological significance or areas that existing marine laboratories use as a source of seawater.
- **iii.** Maximum protection is provided to the marine environment.

k. Waste that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing and water-contact sports areas to maintain applicable bacterial standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard should be used.

4. Biological Characteristics

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

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

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

5. Radioactivity

Discharge of radioactive waste shall not degrade marine life.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

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

2. Regional Water Board Standard Provisions. The Discharger shall comply with the following provisions:

a. Compliance with Ocean Plan Discharge Prohibitions, summarized in Attachment G is required as a condition of this order and permit.

b. Compliance with Discharge Prohibitions contained in Chapter 4 of the Basin Plan, summarized in Attachment G, is required as a condition of this order and permit.

c. The Discharger shall comply with all requirements and conditions of this Order. Any permit noncompliance constituents a violation of the CWA and/or the CWC and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of an application for permit renewal, modification, or reissuance.

d. The Discharger shall comply with all applicable federal, State, and local laws and regulations that pertain to sewage sludge handling, treatment, use and disposal, including CWA Section 405 and USEPA regulations at 40 CFR Part 257.

e. The Discharger's wastewater treatment facilities shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Title 23, Division 3, Chapter 26 of the California Code of Regulations (CCRs).

f. All proposed new treatment facilities and expansions of existing treatment facilities shall be completely constructed and operable prior to initiation of the discharge from the new or expanded facilities. The Discharger shall submit a certification report for each new treatment facility, expansion of an existing treatment facility, and re-ratings, the certification report shall be prepared by the design engineer. For re-ratings, the certification report shall be prepared by the engineer who evaluated the treatment facility capacity. The certification report shall:

i. Identify the design capacity of the treatment facility, including the daily and 30-day design capacity,

ii. Certify the adequacy of each component of the treatment facility, and

iii. Contain a requirement-by-requirement analysis, based on acceptable engineering practices, of the process and physical design of the facility to ensure compliance with this Order.

The signature and engineering license number of the engineer preparing the certification report shall be affixed to the report. If reasonable, the certification report shall be submitted prior to beginning construction. The Discharger shall not initiate a discharge from an existing treatment facility at a daily flow rate in excess of its previously approved design capacity until:

iv. The certification report is received by the Executive Officer,

v. The Executive Officer has received written notification of completion of construction (new treatment facilities and expansions only),

vi. An inspection of the facility has been made by staff of the Regional Water Board or their designated representatives (new treatment facilities and expansions only), and

vii. The Executive Officer and Director have provided the Discharger with written authorization to discharge at a daily flow rate in excess of its previously approved design capacity.

g. All waste treatment, containment, and disposal facilities shall be protected against 100-year peak stream flows as defined by the San Diego County flood control agency.

h. All waste treatment, containment, and disposal facilities shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour storm event.

i. This Order expires on **<Add Expiration Date>**, after which, the terms and conditions of this permit are automatically continued pending issuance of a new permit, provided that all requirements of USEPA's NPDES regulations at 40 CFR 122.6 and the State's regulations at CCR Title 23, Section 2235.4 regarding the continuation of expired permits and waste discharge requirements are met.

j. The Discharger's wastewater treatment facilities shall be operated and maintained in accordance with the operations and maintenance manual prepared by the Discharger pursuant to the Clean Water Grant Program.

k. A copy of this Order shall be posted at a prominent location at or near the treatment and disposal facilities and shall be available to operating personnel at all times.

l. The Discharger shall comply with any interim limitations established by addendum, enforcement action, or revised waste discharge requirements that have been or may be adopted by the Regional Water Board or USEPA.

m. The Discharger shall comply with effluent standards and prohibitions for toxic pollutants established pursuant to Section 307(a) of the CWA within the time frame set forth by the regulations that establish those standards and prohibitions, even if this Order has not been modified to incorporate the requirements.

B. Monitoring and Reporting Program (MRP) Requirements

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

2. Reports required to be submitted to the Regional Water Board and USEPA shall be sent to:

Executive Officer
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

U.S. EPA, Region 9
ATTN: WTR-7, NPDES/DMR
75 Hawthorne Street
San Francisco, 94105

Notifications required to be provided to this Regional Water Board shall be made to:

Telephone – (858) 467-2952
Facsimile – (858) 571-6972

Notifications required to be provided to USEPA shall be made to:

Telephone – (415) 972-3577
Facsimile – (415) 947-3545

3. After notification by the State or Regional Water Board, or USEPA, the Discharger may be required to electronically submit self-monitoring reports. Until such time as electronic submissions of self-monitoring reports is required, the Discharger shall submit discharge monitoring reports (DMRs) in accordance with the requirements described in this Order.

DMRs must be signed and certified as required by the Standard Provisions (Attachment D). The Discharger shall submit the original DMR and one copy to:

State Water Resources Control Board
Division of Water Quality
c/o DMR Processing Center
PO Box 100
Sacramento, CA 95812-1000

The Discharger shall submit one copy of the DMR to:

U.S. EPA, Region 9
ATTN: WTR-7, NPDES/DMR
75 Hawthorne Street
San Francisco, CA 94105

All discharge monitoring results should be reported on the official USEPA pre-printed DMR forms (USEPA Form 3320-1). Forms that are self-generated must be approved by USEPA.

C. Special Provisions

1. Reopener Provisions

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

b. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following;

i. Violation of any terms or conditions of this Order;

ii. Obtaining this Order by misrepresentation or failure to disclose fully all relevant fact; or

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

The filing of a request by the Discharger for modifications, revocation and reissuance, or termination of this Order does not stay any condition of this Order. Notification by the Discharger of planned operational or facility changes, or anticipated noncompliance with this Order does not stay any condition of this Order.

c. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in this Order, the Regional Water Board may institute proceedings under these regulations to modify or revoke and reissue the Order to conform to the toxic effluent standard or prohibition.

d. This Order may be re-opened and modified, to incorporate in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include requirements for the implementation of the watershed management approach.

e. This Order may be reopened and modified, in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include new Minimum Levels (MLs).

f. This Order may be re-opened and modified to revise effluent limitations as a result of future Basin Plan Amendments, or the adoption of a total maximum daily load allocation (TMDL) for the receiving water.

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

h. This Order may be re-opened and modified to revise the toxicity language once that language becomes standardized.

i. This Order may also be re-opened and modified, revoked and, reissued or terminated in accordance with the provisions of 40 CFR Sections 122.44, 122.62 to 122.64, 125.62, and 125.62. Causes for taking such actions include, but are not limited to, failure to comply with any condition of this Order and Permit, and endangerment to human health or the environment resulting from the permitted activity.

j. In accordance with 40 CFR Parts 122 and 124, this permit may be modified to include effluent limitations or permit conditions to address chronic or acute toxicity in the effluent or receiving waterbody, as a result of the discharge; or to implement new, revised, or newly interpreted water quality standards applicable to whole effluent toxicity.

k. The 1995 and 2003 permits contained toxics mass emission benchmarks for effluent discharged through the PLOO which are incorporated into this permit. These benchmarks were established to address the uncertainty due to projected increases in toxic pollutant loadings from the Point Loma WTP to the marine environment during the 5-year 301(h) variance, and to establish a framework for evaluating the need for an antidegradation analysis to determine compliance with water quality standards at the time of permit reissuance. Annual mass emission benchmarks for the 1995 permit were determined using 1990 through April 1995 n-day average monthly performance (95^{th} percentile) of the Point Loma WTP and the Discharger's projected end-of-permit effluent flow of 205 mgd for the 1995 301(h) application. For the 2003 permit, mass emission benchmarks for copper and selenium were recalculated using the 1994 n-day average monthly performance (95^{th} percentile) and 205 mgd and the mass emission benchmark for cyanide was corrected. Average monthly performance was calculated as outlined in Appendix E of *Technical Support Document for Water Quality-based Toxics Control* (EPA/5005/2-90-001, 1991; TSD). The mass emission threshold values may be re-evaluated and modified during the permit term, or the permit may be modified to incorporate water quality-based effluent limits, in accordance with the requirements set forth at 40 CFR 122.62 and 124.5.

l. The Monitoring and Reporting Program (MRP) for this Order may be modified by the Regional Water Board and USEPA to enable the Discharger to participate in comprehensive regional monitoring activities conducted in the Southern California Bight during the term of this permit. The intent of regional monitoring activities is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the region. During these coordinated sampling efforts, the Discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. If predictable relationships among the biological, water quality, and effluent monitoring variables can be demonstrated, it may be appropriate to decrease the Discharger's sampling effort. Conversely, the monitoring program may be intensified if it appears that the objectives cannot be achieved through the Discharger's existing monitoring program. These changes will improve the overall effectiveness of monitoring in the Southern California Bight. Minor changes may be made without further public notice.

m. In accordance with 40 CFR Parts 122 and 124, this permit may be modified to include effluent limitations or permit conditions for phenolic compounds (non-chlorinated) to implement and address Tier II antidegradation, as a result of the discharge.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Chronic Toxicity Notification Requirements

There is a chronic toxicity effluent limit for this discharge. For this discharge, a mixing zone or dilution allowance is authorized and the chronic toxicity effluent limit is any one test result greater than 205 TUc (during the monthly reporting period). Results shall be reported in TUc, where TUc = 100/NOEC. The No Observed Effect Concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a short-term chronic test that causes no observable adverse effects on the test organisms (e.g., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls). This permit requires additional toxicity testing if the chronic toxicity effluent limit is exceeded.

The Discharger shall notify the Regional Water Board and USEPA in writing within 14 days of exceedance of the chronic toxicity effluent limitation. This notification shall describe actions the Discharger has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

b. Acute Toxicity Notification Requirements

There is no acute toxicity effluent limit for this discharge. The acute toxicity performance goal is any one test result greater than 6.42 TUa (during the monthly reporting period). Results shall be reported in TUa, where TUa = 100/LC50. The Lethal Concentration, 50 Percent (LC50) is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time. This permit requires additional toxicity testing if an acute toxicity effluent performance goal is exceeded.

The Discharger shall notify the Regional Water Board and USEPA in writing within 14 days of exceedance of an acute toxicity effluent performance goal. This notification shall describe actions the Discharger has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

c. Initial Investigation TRE Workplan for Whole Effluent Toxicity

Within 90 days of the permit effective date, the Discharger shall prepare and submit an updated copy of their Initial Investigation Toxicity Reduction Evaluation (TRE) Workplan (1-2 pages) to the Regional Water Board and USEPA for review. This plan shall include steps the Discharger intends to implement if toxicity is measured above a toxicity effluent limit or performance goal and should include, at minimum:

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

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

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

This workplan is subject to approval and modification by the Regional Water Board and USEPA.

d. Accelerated Toxicity Testing and TRE/TIE Process for Whole Effluent Toxicity

i. If a toxicity effluent limit or performance goal is exceeded and the source of toxicity is known (e.g., a temporary plant upset), then the Discharger shall conduct one additional toxicity test using the same species and test method. This test shall begin within 14 days of receipt of test results exceeding the toxicity effluent limit or performance goal. If the additional toxicity test does not exceed the toxicity effluent limit or performance goal, then the Discharger may return to their regular testing frequency.

ii. If a toxicity effluent limit or performance goal is exceeded and the source of toxicity is not known, then the Discharger shall conduct six additional toxicity tests using the same species and test method, approximately every two weeks, over a 12 week period. This testing shall begin within 14 days of receipt of test results exceeding the toxicity effluent limit or performance goal. If none of the additional toxicity tests exceed the toxicity effluent limit or performance goal, then the Discharger may return to their regular testing frequency.

iii. If one of the additional toxicity tests (in paragraphs d.i or d.ii of this Section) exceeds the toxicity effluent limit or performance goal, then the Discharger shall notify the Executive Officer and Director. If the Executive Officer and Director determine that the discharge consistently exceeds the toxicity effluent limit or performance goal, then the

Discharger shall initiate a TRE using as guidance the USEPA manuals: *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/ 833/B-99/002, 1999) or *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989). In conjunction, the Discharger shall develop and implement a Detailed TRE Workplan which shall include: further actions undertaken by the Discharger to investigate, identify, and correct the causes of toxicity; actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and a schedule for these actions. This Detailed TRE Workplan and schedule are subject to approval and modification by the Regional Water Board and USEPA.

iv. As part of a TRE, the Discharger may initiate a Toxicity Identification Evaluation (TIE)—using the same species and test method, and USEPA TIE guidance manuals—to identify the causes of toxicity. The USEPA TIE guidance manuals are: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992; only chronic toxicity); *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991; only acute toxicity); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996).

e. Antidegradation Analysis

USEPA and the Regional Water Board have concluded that a full antidegradation analysis justifying that the continued increase in effluent loading of phenolic compounds (non-chlorinated) to a Tier II waterbody may be necessary. For phenolic compounds (non-chlorinated), the Discharger shall conduct a thorough analysis of the projected effluent load above the mass emission benchmark level, the resulting impact to receiving water quality of the total effluent load, and opportunities for effluent load reduction through additional treatment or controls (including local limits) and pollution prevention. If this analysis shows that the total effluent load for phenolic compounds (non-chlorinated) produces either (1) a receiving water concentration at the boundary of the zone of initial dilution that is less than ten percent above the ambient (farfield) concentration, or (2) the receiving water concentration at the boundary of the zone of initial dilution is less than 50 percent of the California Ocean Plan water quality objectives for phenolic compounds (non-chlorinated), then the resulting impact to water quality is not considered “significant” and further analysis is not required at this time. However, if the change in receiving water quality is found to be “significant” upon review by USEPA and the Regional Water Board, then the Discharger must conduct a socioeconomic analysis considering the full benefits and costs of the increased effluent loading of phenolic compounds (non-chlorinated), including environmental impacts. Specifically, this analysis must assess whether allowing these increased loadings is necessary to accommodate important social and economic development in the San Diego service area.

These two evaluations (i.e., the analysis determine "significance" and the socioeconomic analysis) shall be conducted by the Discharger in coordination with USEPA and the Regional Water Board. Within 90 days of the permit effective date, the Discharger shall submit study plans for these two analyses and implementation schedules to USEPA and Regional Water Board for review and approval. These plans and schedules shall be modified and implemented as directed by USEPA and the Regional Water Board. A final report analyzing "significance" is due within one year of the permit effective date. A final Tier II antidegradation analysis report, including a socioeconomic analysis considering the full benefits and costs of the increased effluent loading of phenolic compounds (non-chlorinated) and environmental impacts, is due within 6 months of a determination by USEPA that the increased loadings are significant.

3. Best Management Practices and Pollution Prevention – Not Applicable

4. Construction, Operation and Maintenance Specifications – Not Applicable

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Treatment Plant Capacity

The Discharger shall submit a written report to the Executive Officer and Director within 90 days after the monthly average influent flow rate equals or exceeds 75 percent of the advanced primary design capacity of the wastewater treatment and/or disposal facilities. The Discharger's senior administrative officer shall sign a letter in accordance with Standard Provision V.B. (Attachment D) which transmits that report and certifies that that policy-making body is adequately informed of the influent flow rate relative to the Facility's design capacity. The report shall include the following:

i. Average influent daily flow for the calendar month; the date on which the maximum daily flow occurred; and the rate of that maximum flow.

ii. The Discharger's best estimate of when the average daily influent flow for a calendar month will equal or exceed the design capacity of the facilities.

iii. The Discharger's intended schedule for studies, design, and other steps needed to provide additional treatment for the wastewater from the collection system before the waste flow exceeds the capacity of present units.

b. Sludge (Biosolids) Disposal Requirements

(Note: "Biosolids" refers to non-hazardous sewage sludge, as defined at 40 CFR 503.9. Sewage sludge that is hazardous, as defined at 40 CFR 261, must be disposed of in accordance with the RCRA.)

i. General Requirements

(a) All biosolids generated by the Discharger shall be used or disposed of in compliance with applicable portions of: 40 CFR 503—for biosolids that are land applied, placed in a surface disposal site (dedicated land disposal site, monofill, or sludge-only parcel at a municipal landfill), or incinerated; 40 CFR 258—for biosolids disposed of in a municipal solid waste landfill (with other materials); and 40 CFR 257—for all biosolids use and disposal practices not covered under 40 CFR 258 or 503.

40 CFR 503, Subpart B (land application), sets forth requirements for biosolids that are applied for the purpose of enhancing plant growth or for land reclamation. 40 CFR 503, Subpart C (surface disposal), sets forth requirements for biosolids that are placed on land for the purpose of disposal.

The Discharger is responsible for assuring that all biosolids produced at its facility are used or disposed of in accordance with these rules, whether the Discharger uses or disposes of the biosolids itself, or transfers their biosolids to another party for further treatment, use, or disposal. The Discharger is responsible for informing subsequent preparers, appliers, and disposers of requirements they must meet under these rules.

(b) Duty to Mitigate: The Discharger shall take all reasonable steps to prevent or minimize any biosolids use or disposal which has a likelihood of adversely affecting human health or the environment.

(c) No biosolids shall be allowed to enter wetlands or other waters of the United States.

(d) Biosolids treatment, storage, use, or disposal shall not contaminate groundwater.

(e) Biosolids treatment, storage, use, or disposal shall not create a nuisance such as objectionable odors or flies.

(f) The Discharger shall assure that haulers transporting biosolids off-site for treatment, storage, use, or disposal take all necessary measures to keep the biosolids contained. Trucks hauling biosolids that are not Class A, as defined at 40 CFR 503.32(a), shall be cleaned as necessary after loading and after unloading, so as to have no biosolids on the exterior of the truck or wheels. Trucks hauling biosolids that are not Class A shall be tarped. All haulers must have spill clean-up procedures. Trucks hauling biosolids that are not Class A shall not be used for hauling food or feed crops after unloading the biosolids unless the Discharger submits a hauling description, to be approved by USEPA, describing how trucks will be thoroughly cleaned prior to adding food or feed.

(g) If biosolids are stored for over two years from the time they are generated, the Discharger must ensure compliance with all requirements for surface disposal under 40 CFR 503, Subpart C, or must submit a written notification to USEPA and the State with the information specified under 40 CFR 503.20(b), demonstrating the need for longer temporary storage. During storage of any length for non-Class A biosolids, whether on the facility site or off-site, adequate procedures must be taken to restrict access by the public and domestic animals.

(h) Any biosolids treatment, disposal, or storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect the site boundaries from erosion, and to prevent any conditions that would cause drainage from the materials to escape from the site. Adequate protection is defined as protection from at least a 100-year storm and the highest tidal stage which may occur.

(i) There shall be adequate screening at the plant headworks and/or at the biosolids treatment units to ensure that all pieces of metal, plastic, glass, and other inert objects with a diameter greater than 3/8 inches are removed.

ii. Inspection and Entry

The USEPA, State, or an authorized representative thereof, upon the presentation of credentials, shall be allowed by the Discharger directly, or through contractual arrangements with their biosolids management contractors, to:

(a) Enter upon all premises where biosolids produced by the Discharger are treated, stored, used, or disposed of, by either the Discharger or another party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal.

(b) Have access to and copy any records that must be kept by either the Discharger or another party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal, under the conditions of this permit or 40 CFR 503.

(c) Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations used in biosolids treatment, storage, use, or disposal by either the Discharger or another party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal.

iii. Monitoring

(a) Biosolids shall be monitored for the following constituents, at the frequency stipulated in Table 1 of 40 CFR 503.16: arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, organic nitrogen, ammonia nitrogen, and total solids. If biosolids are removed for use or disposal on a routine basis, sampling should be scheduled at regular intervals throughout the year. If biosolids are stored for an extended period prior to use or disposal, sampling may occur at regular intervals, or samples of the accumulated stockpile may be collected prior to use or disposal, corresponding to the tons accumulated in the stockpile over that period.

Monitoring shall be conducted using the methods in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (SW-846), or as otherwise required under 40 CFR 503.8(b). All results must be reported on a 100% dry weight basis and records of all analyses must state on each page of the analytical results whether the reported results are expressed on an “as-is” or a “100% dry weight” basis.

(b) The Discharger shall sample biosolids twice per year for the pollutants listed under CWA Section 307(a), using best practicable detection limits.

iv. Pathogen and Vector Control

(a) Prior to land application, the permittee shall demonstrate that biosolids meet Class A or Class B pathogen reduction levels by one of the methods listed under 40 CFR 503.32.

(b) Prior to disposal in a surface disposal site, the Discharger shall demonstrate that biosolids meet Class B pathogen reduction levels, or ensure that the site is covered at the end of each operating day. If pathogen reduction is demonstrated using a “Process to Further Reduce Pathogens” or one of the “Processes to Significantly Reduce Pathogens”, the Discharger shall maintain daily records of the operating parameters used to achieve this reduction. If pathogen reduction is demonstrated by testing for fecal coliform and/or pathogens, samples must be collected at the frequency specified in Table 1 of 40 CFR 503.16. If Class B is demonstrated using fecal coliform, at least seven grab samples must be collected during each monitoring period and a geometric mean calculated from these samples. The following holding times between sample collection and analysis shall not be exceeded: fecal coliform—24 hours when cooled to 4 degrees C; *Salmonella* spp. bacteria—24 hours when cooled to 4 degrees C; enteric viruses—2 weeks when frozen; helminth ova—one month when cooled to 4 degrees C.

(c) For biosolids that are land applied or placed in a surface disposal site, the Discharger shall track and keep records of the operational parameters used to achieve the Vector Attraction Reduction requirements under 40 CFR 503.33(b).

v. Surface Disposal

If biosolids are placed in a surface disposal site (dedicated land disposal site or monofill), a qualified groundwater scientist shall develop a groundwater monitoring program for the site, or shall certify that the placement of biosolids on the site will not contaminate an aquifer.

vi. Landfill Disposal

Biosolids placed in a municipal landfill shall be tested by the Paint Filter Test (Method 9095) at the frequency specified in Table 1 of 40 CFR 503.16, or more often if necessary to demonstrate that there are no free liquids.

vii. Notifications

The Discharger, either directly or through contractual arrangements with their biosolids management contractors, shall comply with the following notification requirements.

(a) Notification of Non-compliance

The Discharger shall notify USEPA and the State (for both Discharger and use or disposal site) of any non-compliance within 24 hours, if the non-compliance may seriously endanger health or the environment. For other instances of non-compliance, the Discharger shall notify USEPA and the State of the non-compliance in writing within 5 working days of becoming aware of the non-compliance. The Discharger shall require their biosolids management contractors to notify USEPA and the State of any non-compliance within these same time-frames.

(b) Interstate Notification

If biosolids are shipped to another State or Tribal Land, the Discharger shall send 60 days prior notice of the shipment to the permitting authorities in the receiving State or Tribal Land, and the USEPA Regional Office.

(c) Land Application Notification

Prior to using any biosolids from this facility (other than composted biosolids) at a new or previously unreported site, the permittee shall notify USEPA and the State. This notification shall include a description and topographic map of the proposed site(s), names and addresses of the applier and site owner, and a listing of any State or local permits which must be obtained. It shall also include a description of the crops or vegetation to be grown, proposed loading rates, and a determination of agronomic rates.

Within a given monitoring period, if any biosolids do not meet the applicable metals concentration limits specified under 40 CFR 503.13, then the Discharger (or its contractor) must pre-notify USEPA, and determine the cumulative metals loading at that site to date, as required by 40 CFR 503.12.

The Discharger shall notify the applier of all subject requirements under 40 CFR 503, including the requirement for the applier to certify that management practices, site restrictions, and applicable vector attraction reduction requirements have been met. The Discharger shall require the applier to certify at the end of 38 months, following application of Class B biosolids, that harvesting restrictions in effect for up to 38 months have been met.

(d) Surface Disposal Notification

Prior to disposal at a new or previously unreported site, the Discharger shall notify USEPA and the State. The notice shall include a description and topographic map of the proposed site, depth to groundwater, whether the site is lined or unlined, site operator and site owner, and any State or local permits. It shall also describe procedures for ensuring grazing and public access restrictions for three years following site closure. The notice shall include a groundwater monitoring plan or description of why groundwater monitoring is not required.

viii. Reporting

The Discharger shall submit an annual biosolids report to the USEPA Region 9 Biosolids Coordinator and the State by February 19 of each year for the period covering the previous calendar year. The report shall include:

(a) The amount of biosolids generated that year, in dry metric tons, and the amount accumulated from previous years.

(b) Results of all pollutant monitoring required under Monitoring, above. Results must be reported on a 100% dry weight basis.

(c) Demonstrations of pathogen and vector attraction reduction methods, as required under 40 CFR 503.17 and 503.27, and certifications.

(d) Names, mailing addresses, and street addresses of persons who received biosolids for storage, further treatment, disposal in a municipal landfill, or other use or disposal method not covered above, and volumes delivered to each.

(e) The following information must be submitted by the Discharger, unless the Discharger requires its biosolids management contractors to report this information directly to the EPA Region 9 Biosolids Coordinator. For land application sites:

Locations of land application sites (with field names and numbers) used that calendar year, size of each field applied to, applier, and site owner.

Volumes applied to each field (in wet tons and dry metric tons), nitrogen applied, and calculated plant available nitrogen.

Crops planted, dates of planting and harvesting.

For biosolids exceeding 40 CFR 503.13 Table 3 metals concentrations, the locations of sites where the biosolids were applied and cumulative metals loading at the sites to date.

Certifications of management practices at 40 CFR 503.14.

Certifications of site restrictions at 40 CFR 503(b)(5).

For surface disposal sites:

Locations of sites, site operator and site owner, size of parcel on which biosolids were disposed.

Results of any required groundwater monitoring.

Certifications of management practices at 40 CFR 503.24.

For closed sites, the date of site closure and certifications of management practices for three years following site closure.

(f) All reports shall be submitted to:

Regional Biosolids Coordinator
U.S. Environmental Protection Agency
CWA Compliance Office (WTR-7)
75 Hawthorne Street
San Francisco, CA 94105-3901

Biosolids Program Coordinator
Arizona Department of Environmental Quality
Mail Code: 5415B-1
1110 West Washington Street
Phoenix, AZ 85007

c. Pretreatment Program

i. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR Part 403, including any subsequent revisions to that part. Where 40 CFR Part 403 or subsequent revisions place mandatory actions upon the Discharger, as Control Authority, but do not specify a timetable for completion, the Discharger shall complete the mandatory actions within 6 months of the issuance date of this Order, or the effective date of the revisions to 40 CFR Part 403, whichever is later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies imposed by the USEPA and/or the Regional Water Board, as provided in the CWA and/or the CWC.

ii. The Discharger shall comply with the urban area pretreatment program requirements under CWA Section 301(h) and the implementation requirements at 40 CFR 125. The Discharger's actions to comply shall include the following:

(a) During each calendar year, maintaining a rate of significant noncompliance (SNC), as defined at 40 CFR 403.8(f)(2)(vii), for SIUs of no more than 15 percent of the total number of SIUs. The 15 percent noncompliance criteria includes only SIUs that are in SNC and which have not received at least a second level formal enforcement action from the Discharger, in accordance with the Enforcement Response Plan included in Appendix K-2 of the

Discharger's April 1995 301(h) modification application. The second level of enforcement is an Administrative Notice and Order.

(b) Providing the annual analysis regarding local limits required under 40 CFR 125.65(c)(1)(iii). As a consequence of any new local limits, some SIUs may need time to come into compliance with those limits. In any such cases, the Discharger shall issue a Compliance Findings of Violation and Order which is the first level of formal enforcement in its Enforcement Response Plan. The Order shall contain a schedule for achieving compliance with the new local limits. SIUs receiving such orders will not be included in the 15 percent noncompliance criteria.

iii. The Discharger shall implement and enforce its approved pretreatment program, and all subsequent revisions, which are hereby made enforceable conditions of this Order. The Discharger shall enforce the requirements promulgated pursuant to Sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate, and effective enforcement actions. The Discharger shall cause all nondomestic users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements, or, in the case of a new nondomestic user, upon commencement of the discharge.

iv. The Discharger shall perform the pretreatment functions required by 40 CFR 403, including, but not limited to:

(a) Implement the necessary legal authorities as required by 40 CFR 403.8(f)(1);

(b) Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6;

(c) Implement the programmatic functions as required by 40 CFR 403.8(f)(2); and

(d) Provide the requisite funding and personnel to implement the pretreatment program, as required by 40 CFR 403.8(f)(3).

v. By April 1 of each year, the Discharger shall submit an annual report to the Regional Water Board; USEPA Region 9; the State Water Board, Division of Water Quality, Regulations Unit; and the San Diego County Department of Health Services, Hazardous Materials Division, describing its pretreatment activities over the previous calendar year. In the event the Discharger is not in compliance with any condition or requirement of this Order, or any pretreatment compliance inspection/audit requirements, the Discharger shall include the reasons for noncompliance and state how and when it will comply with such conditions and requirements. The annual report shall contain, but not be limited, the following information:

(a) A summary of analytical results from representative flow-proportioned 24-hour composite sampling of the Discharger's influent and effluent for those pollutants USEPA has identified under Section 307(a) of the CWA, which are known or suspected to be discharged by nondomestic users. This will consist of an annual full priority pollutant scan. Wastewater sampling and analysis shall be performed in accordance with the minimum frequency of analysis required by the Monitoring and Reporting program of this Order (Attachment E). The Discharger shall also provide influent and effluent monitoring data for non-priority pollutants, which the Discharger believes may be causing or contributing to interference or pass through. The Discharger is not required to sample and analyze for asbestos. Sludge sampling and analysis is addressed elsewhere in this permit. Wastewater sampling and analysis shall be performed in accordance with 40 CFR Part 136;

(b) A discussion of upset, interference, or pass through, if any, at the Discharger's Facilities, which the Discharger knows or suspects were caused by nondomestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, any corrective actions taken, and, if known, the name and address of the responsible nondomestic user(s). The discussion shall also include a review of the applicable local pollutant limitations to determine whether any additional limitations or changes to existing limitations, are necessary to prevent pass-through, interference, or noncompliance with sludge disposal requirements;

(c) An updated list of the Discharger's SIUs including their names and addresses, and a list of deletions, additions and SIU name changes keyed to the previously submitted list. The Discharger shall provide a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limitations;

(d) The Discharger shall characterize the compliance status of each SIU by providing a list or table for the following:

   (1) Name of SIU

   (2) Category, if subject to categorical standards;

   (3) Type of wastewater treatment or control processes in place;

(4) Number of samples taken by SIU during the year;

(5) Number of samples and inspections by Discharger during the year;

(6) For an SIU subject to discharge requirements for total toxic organics (TTO), whether all required certifications were provided;

(7) A list of pretreatment standards (categorical or local) violated during the year, or any other violations;

(8) SIUs in significant noncompliance (SNC) as defined at 40 CFR 403.8(f)(2)(viii), at any time during the year;

(9) A summary of enforcement actions or any other actions taken against SIUs during the year. Describe the type of action, final compliance date, and the amount of fines and/or penalties collected, if any. Describe any proposed actions for bringing SIUs into compliance; and

(10) The name(s) of any SIU(s) required to submit a baseline monitoring report and any SIUs currently discharging under a baseline monitoring report.

(11) The names of any SIUs required to prepare and/or implement a pollution prevention plan pursuant to CA SB 709 and SB 2165.

(e) A brief description of any programs the Discharger implements to reduce pollutants from nondomestic users not classified as SIUs;

(f) A brief description of any significant changes in operating the pretreatment program which differ from the previous year, including, but not limited to, changes in the program's administrative structure, local limits, monitoring program, legal authority, enforcement policy, funding, and staffing levels;

(g) A summary of the annual pretreatment program budget, including the cost of pretreatment program functions and equipment purchases;

(h) A summary of activities to involve and inform the public of the pretreatment program, including a copy of the newspaper notice, if any, required by 40 CFR 403.8(f)(2)(vii);

(i) A description of any changes in sludge disposal methods;

(j) A description of the program to quantify, characterize, regulate, and treat flow from low-flow urban runoff diversion systems and "first flush" industrial stormwater diversion systems that are routed to the sanitary sewer collection system; and

(k) A discussion of any concerns not described elsewhere in the annual report.

vi. Semiannual SIU Status Report

The Discharger shall submit a semiannual SIU noncompliance status report to the Regional Water Board, the State Water Board, and the USEPA. The reports shall cover the periods of January 1 through June 30, and July 1 through December 31 and shall be submitted no later than September 1 and March 1, respectively. The report shall contain:

(a) The names and addresses of all SIUs which violated any discharge or reporting requirements during the semi-annual reporting period;

(b) A description of the violations, including whether the discharge violations were for categorical standards or local limits;

(c) A description of the enforcement actions or other actions taken to remedy the noncompliance; and

(d) The status of enforcement actions or other actions taken in response to SIU noncompliance identified in previous reports.

(e) The status of any IUs required to prepare and/or implement a pollution prevention plan pursuant to CA SB 709 and SB 2165.

vii. Nonindustrial Source Control Program

In accordance with CWA Section 301(h)(7) and 40 CFR 125.66(d), the Discharger shall continue to develop and implement its nonindustrial source control program and public education program, described in Volume VII, Appendix K, of the 2007 301(h) application. The purpose of these programs is to eliminate the entrance of nonindustrial toxic pollutants and pesticides into the POTW. These programs shall be periodically reviewed and addressed in the annual report.

d. Collection System

On 2 May 2006, the State Water Board adopted State Water Board Order No. 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003 and any future revisions thereto. Order No. 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR.

Regardless of the coverage obtained under Order No. 2006-0003, the Discharger's collection system is part of the publicly-owned treatment works or Facility that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR 122.41(e)], report any non-compliance [40 CFR 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR 122.41(d)].

6. Other Special Provisions

a. **Continuous Monitoring for Residual Chlorine.** To ensure compliance with WQBELs for total chlorine residual, continuous monitoring of the effluent is required. Within 180 days of the effective date of this permit, the Discharger shall begin continuous monitoring for total chlorine residual in the effluent. Until that time, at least four grab samples per day, representative of the daily discharge, shall be collected immediately prior to entering the PLOO and analyzed for total chlorine residual. A split of each sample shall be concurrently monitored for bacteria indicator levels.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

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

A. Compliance with Average Monthly Effluent Limitation (AMEL).

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of noncompliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for the month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month.

B. Compliance with Average Weekly Effluent Limitation (AWEL).

If the average of daily discharges over a calendar week (Sunday through Saturday) exceeds the AWEL for a given parameter, and alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of noncompliance. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week.

C. Compliance with Maximum Daily Effluent Limitation (MDEL).

The MDEL shall apply to flow weighted 24-hour composite samples. If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for that parameter for that one day only within the reporting period.

D. Compliance with Instantaneous Minimum Effluent Limitation

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

E. Compliance with Instantaneous Maximum Effluent Limitation.

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

F. Compliance with Six-month Median Effluent Limitation.

If the median of daily discharges over any 180-day period exceeds the six-month median effluent limitation for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that 180-day period for that parameter. The next assessment of compliance will occur after the next sample is taken. If only a single sample is taken during a given 180-day period and the analytical result for that sample exceeds the six-month median, the Discharger will be considered out of compliance for the 180-day period.

G. Mass and Concentration Limitations.

Compliance with mass and concentration effluent limitations for the same parameter shall be determined separately with their respective limitations. When the concentration of a constituent in an effluent sample is determined to be "ND" or "DNQ", the corresponding mass emission rate (MER) determined from that sample concentration shall also be reported as "ND" or "DNQ".

H. Percent Removal.

Compliance with percent removal requirements for monthly average percent removal of biochemical oxygen demand (BOD_5) and total suspended solids (TSS) shall be determined separately for each wastewater treatment facility discharging through an outfall. For each wastewater treatment facility, the monthly average percent removal is the average of the calculated daily discharge percent removals only for days on which the constituent concentration is monitored in both the influent and effluent of the wastewater treatment facility at location specified in the Monitoring and Reporting Program (Attachment E) within a calendar month.

The percent removal for the Point Loma Wastewater Treatment Plant (applicable to TSS removal based on Table A of the Ocean Plan, and BOD_5 removal at the Facility) for each day shall be calculated according to the following equation:

$$\text{Daily discharge percent removal} = \frac{\text{Influent Concentration - Effluent Concentration}}{\text{Influent Concentration}} \times 100\%$$

The system-wide percent removals of TSS and BOD_5 shall be calculated using the following formula (mass emissions in metric tons):

$$\text{Percent removal} = \frac{\text{(System Influents – Return Streams) – Outfall Discharge}}{\text{System Influents – Return Streams}} \times 100\%$$

Where:

System Influents: Point Loma WTP Influent, North City Water Reclamation Plant (NCWRP) Influent Pump Station, and NCWRP Influent from Penasquitos Pump Station.

Return Streams: NCWRP Filter Backwash, NCWRP Plant Drain, NCWRP Secondary and Un-disinfected Filtered Effluent Bypass, NCWRP Final Effluent, and MBC Centrate.

I. 2005 California Ocean Plan Provisions for Table B Constituents.

1. Sampling Reporting Protocols

a. Dischargers must report with each sample result the reported ML, selected in accordance with Ocean Plan Section III.C.5, and the laboratory's current Method Detection Limit (MDL).

b. Dischargers must also report results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

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

ii. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, must be reported as "Detected, but Not Quantified", or DNQ. The laboratory must write the estimated chemical concentration of the sample next to DNQ as well as the words "Estimated Concentration" (may be shorted to Est. Conc.").

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

2. Compliance Determination

Sufficient sampling and analysis shall be required to determine compliance with the effluent limitation.

a. Compliance with Single-Constituent Effluent Limitations

The Discharger shall be deemed out of compliance with an effluent limitation or discharge specification if the concentration of the constituent in the monitoring sample is greater than the effluent limitation or discharge specification and greater than or equal to the reported ML.

b. Compliance with Effluent Limitations expressed as a Sum of Several Constituents

Dischargers are out of compliance with an effluent limitation that applies to the sum of a group of chemicals (e.g., PCBs) if the sum of the individual pollutant concentrations is greater than the effluent limitation. Individual pollutants of the group will be considered to have a concentration of zero if the constituent is reported as ND or DNQ.

c. Multiple Sample Data Reduction

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

d. Mass Emission Rate

The mass emission rate (MER), in pounds per day, shall be obtained from the following calculation for any calendar day:

Mass Emission Rate (lbs/day) = 8.34 x Q x C

In which Q and C are the flow rate in million gallons per day, and the constituent concentration in mg/L, respectively, and 8.34 is a conversion factor (lbs/gallon of water). If a composite sample is taken, then C is the concentration measured in the composite sample and Q is the average flow rate occurring during the period over which the samples are composited.

e. Bacterial Standards and Analysis

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

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

Where n is the number of days samples were collected during the period and C is the concentration of bacteria (CFU/100 mL) found on each day of sampling.

ii. For all bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 16,000 CFU (colony-forming units). The detection methods used for each analysis shall be reported with the results of the analysis. Detection methods used for coliform (total and fecal) shall be those presented in Table 1A of 40 CFR 136, unless alternate methods have been approved in advance by USEPA, pursuant to 40 CFR 136. Detection methods used for enterococcus shall be those presented in USEPA publication EPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water by Membrane Filter Procedure*, listed under 40 CFR 136, or any improved method determined by the Regional Water Board or USEPA to be appropriate.

f. Single Operational Upset

A single operational upset (SOU) that leads to simultaneous violations or more than one pollutant parameter shall be treated as a single violation and limits the Discharger's liability in accordance with the following conditions:

i. A single operational upset is broadly defined as a single unusual event that temporarily disrupts the usually satisfactory operation of a system in such a way that it results in violation of multiple pollutant parameters.

ii. A Discharger may assert SOU to limit liability only for those violations which the Discharger submitted notice of the upset as required in Provision H of Attachment D.

iii. For purposes outside of CWC Section 13385(h) and (i), determination of compliance and civil liability (including any more specific definition of SOU), the requirements for Dischargers to assert the SOU limitation of liability, and the manner of counting violations, shall be in accordance with the USEPA Memorandum "Issuance of Guidance Interpreting Single Operational Upset" (September 27, 1989).

iv. For purposes of CWC Section 13385(h) and (i), determination of compliance and civil liability (including any more specific definition of SOU, the requirements for Dischargers to assert the SOU limitation of liability, and the manner of counting violations shall be in accordance with CWC Section 13385(f)(2).

ATTACHMENT A – DEFINITIONS

Acute Toxicity

a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{96\text{-hr LC } 50\%}$$

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

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

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

Biosolids
Biosolids refers to non-hazardous sewage sludge, as defined at 40 CFR 503.9. Sewage sludge that is hazardous, as defined at 40 CFR 261, must be disposed of in accordance with the RCRA.

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

Chronic Toxicity
This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

b. No Observed Effect Level (NOEL)

The NOEL 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 Ocean Plan Appendix II.

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

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

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

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

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

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

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

Downstream Ocean Waters
Waters downstream with respect to ocean currents.

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

Enclosed Bays
Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

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

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

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

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

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

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

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

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

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

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

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

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

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

Method Detection Limit (MDL)
The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Appendix B.

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

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

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

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

PAHs (polynuclear aromatic hydrocarbons)
The sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls)
The sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP is to reduce all potential sources of pollutants through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below water quality standards in the Ocean Plan. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a PMP, if required pursuant to Water Code Section 13263.3(d), shall be considered to fulfill the PMP requirements in Section III.C.9 of the Ocean Plan.

Reported Minimum Level
The ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting sample results that are selected or established by the Regional Water Board and USEPA, in accordance with Ocean Plan Section III.C.5. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interference. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied when there are matrix effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, the additional factor must be applied to the ML in the computation of the reported ML.

Satellite Collection System
The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

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

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

Six-Month Median Effluent Limitation

The highest allowable moving median of all daily discharges for any 180-day period.

State Water Quality Protection Areas (SWQPAs)
Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) that were previously designated by the State Water Board in Resolution No.s 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

TCDD Equivalents
The sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

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

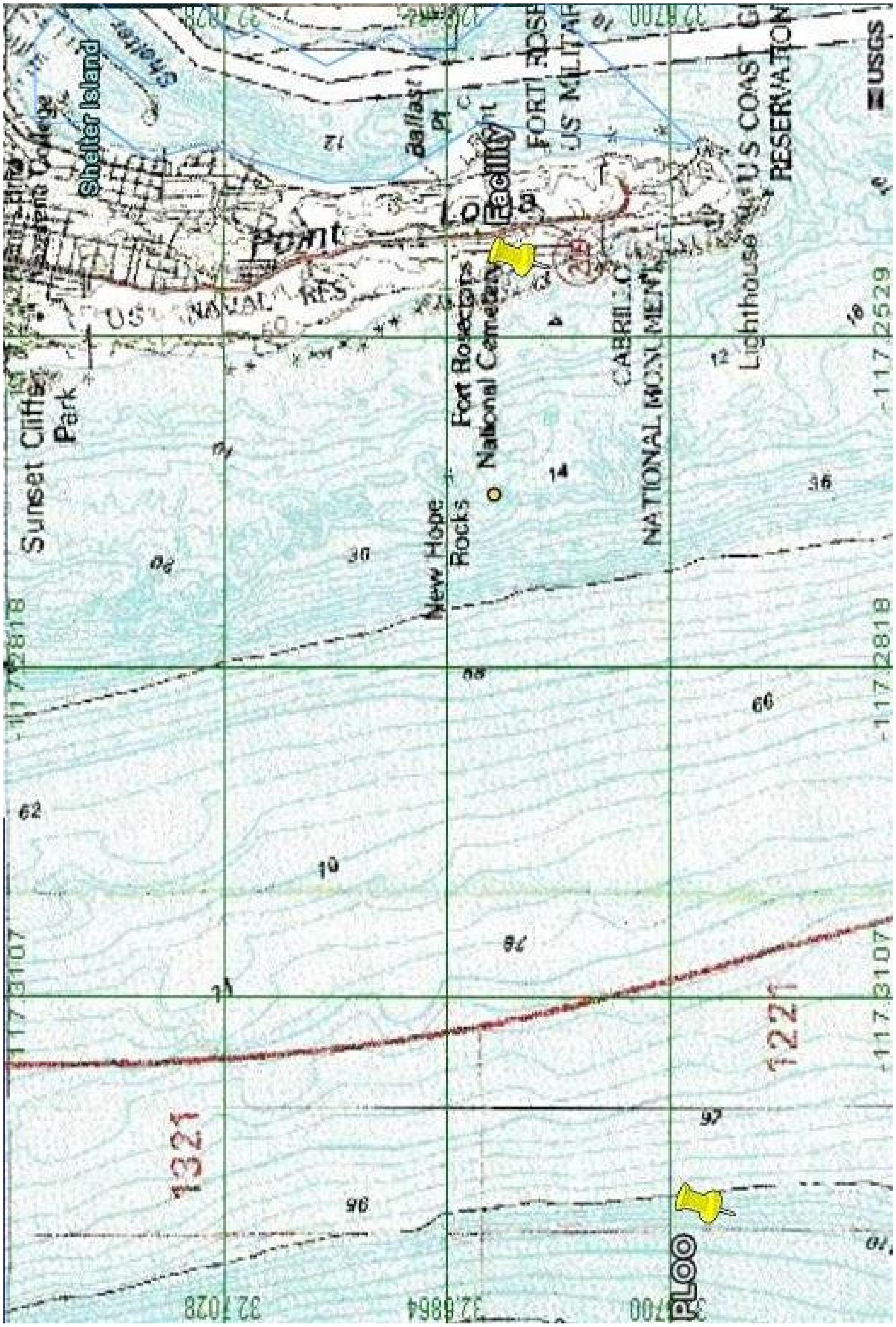
Toxicity Reduction Evaluation (TRE)
A study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps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

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

Water Reclamation

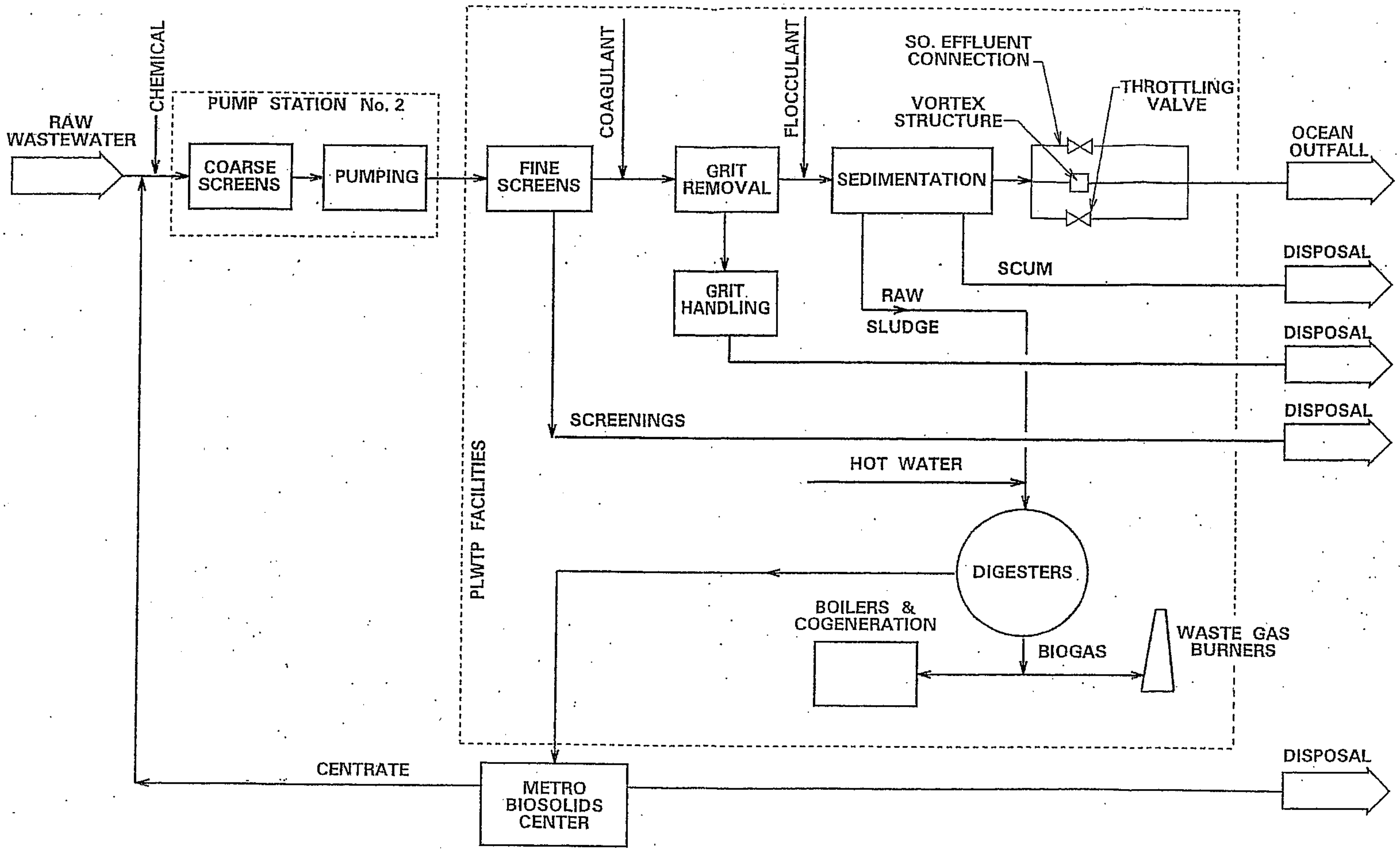
The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

ATTACHMENT B – MAP

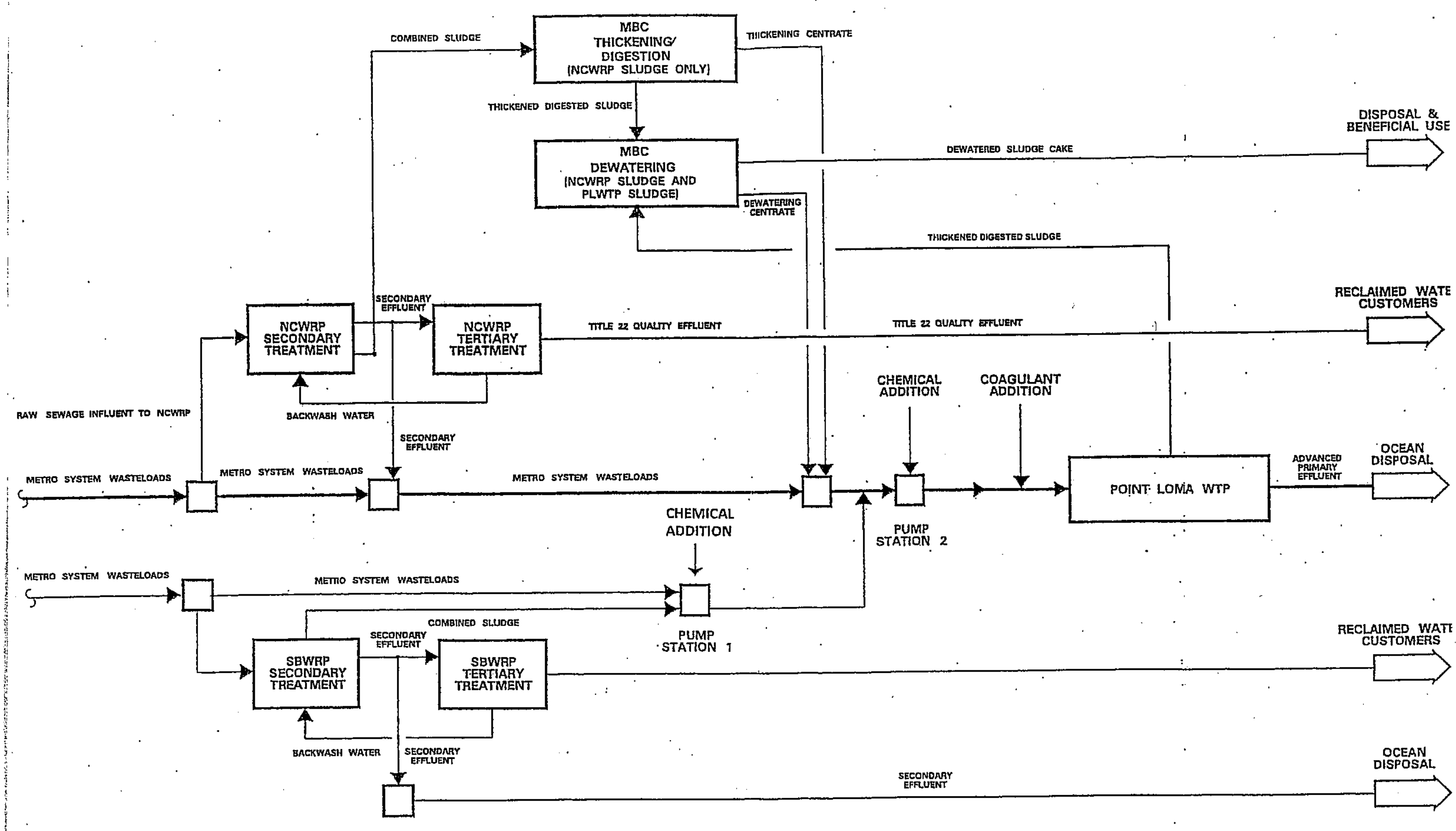


ATTACHMENT C – FLOW SCHEMATICS

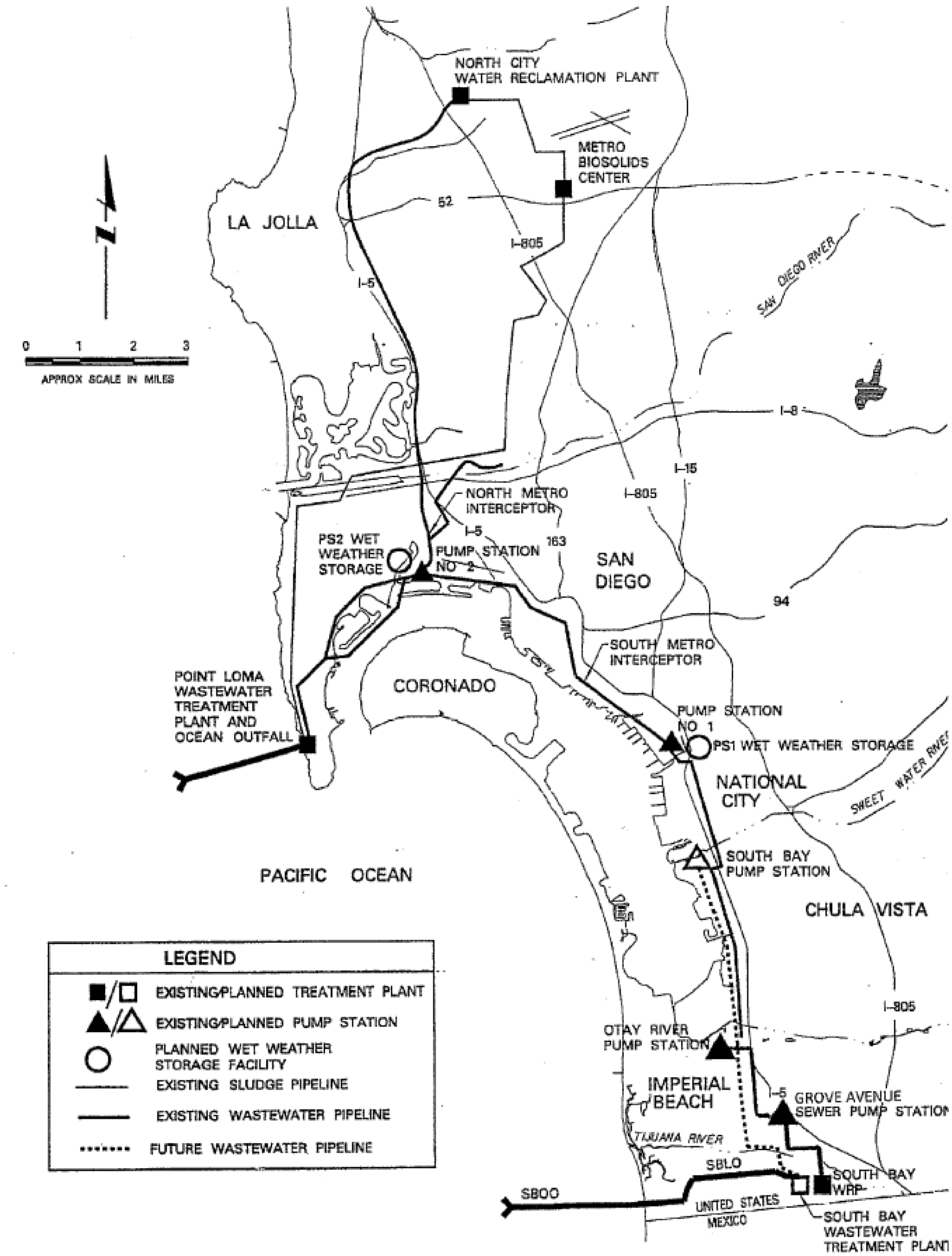
C.1. Wastewater Treatment Flow Schematic



C.2. System-Wide Flow Schematic



C.3. Collection System



EXISTING AND PLANNED METRO SYSTEM FACILITIES

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR § 122.41(a).)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use and disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR § 122.41(i); Water Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR § 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR § 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR § 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 CFR § 122.41(i)(4).)

G. Bypass

1. Definitions

   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR § 122.41(m)(1)(i).)

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

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

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

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

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

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

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

5. Notice

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

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR § 122.41(m)(3)(ii).)

H. Upset

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

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR § 122.41(f).)

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

B. According to test procedures approved under 40 CFR Part 136 for the analyses of pollutants or another method is required under 40 CFR subchapters N or O. In the case of pollutants for which there are no approved methods under 40 CFR Part 136 or otherwise required under 40 CFR subchapters N or O, monitoring must be conducted according to a test procedure specified in the permit for such pollutants.

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer or USEPA Director at any time. (40 CFR § 122.41(j)(2).) It is recommended that the Discharger maintain the results of all analyses indefinitely.

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 CFR § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 CFR § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 CFR § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 CFR § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 CFR § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 CFR § 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Discharger (40 CFR § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 CFR § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR § 122.22(a)(3).).

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

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

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR § 122.22(b)(2)); and

   c. The written authorization is submitted to the Regional Water Board, State Water Board, and USEPA. (40 CFR § 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard

Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board, State Water Board, and USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR § 122.22(c).)

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

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

C. Monitoring Reports

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

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board, State Water Board, or USEPA for reporting results of monitoring of sludge use or disposal practices. (40 CFR § 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board or USEPA. (40 CFR § 122.41(l)(4)(ii).)

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR § 122.41(l)(6)(i).)

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

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

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

c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. (40 CFR §122.44(g).)

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

F. Planned Changes

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

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

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR § 122.41(l)(1)(ii).)

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

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board, and USEPA, of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR § 122.41(l)(7).)

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

B. The Clean Water Act provides that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such Sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Clean Water Act provides that any person who *negligently* violates Sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such Sections in a permit issued under Section 402 of the Act, or any requirement imposed in a pretreatment program approved under Section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who *knowingly* violates such Sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates Section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such Sections in a permit issued under Section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

C. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such Sections in a permit issued under Section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

D. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. (40 CFR 122.41(j)(5).)

E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both. (40 CFR 122.41(k)(2).)

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board and USEPA of the following (40 CFR § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR § 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 CFR § 122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 CFR § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

List of Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations Section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations. In addition, the Discharger must establish a monitoring and reporting program that meets the requirements of CWA Section 301(h) and 40 CFR Section 125.63.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified below and, unless otherwise specified, before the monitored waste stream joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to, and the approval of, the Regional Water Board and United States Environmental Protection Agency (USEPA). Samples shall be collected at times representative of “worst case” conditions with respect to compliance with the requirements of Order No. R9-2009-0001.

B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±5 percent from true discharge rates throughout the range of expected discharge volumes.

C. Monitoring must be conducted according to USEPA test procedures approved at 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants*, as amended, unless other test procedures are specified in Order No. R9-2009-0001 or this MRP, or by the Regional Water Board and USEPA.

D. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Public Health or a laboratory approved by the Regional Water Board.

E. Records of monitoring information shall include information required under Standard Provision, Attachment D, Section IV.

F. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the Discharger shall submit to the Executive Officer a written statement signed by a registered professional engineer certifying that all flow measurement devices have been calibrated and will reliably achieve an accuracy with a maximum deviation of less than ±5 percent from true discharge rates throughout the range of expected discharge volumes.

G. The Discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. An annual report shall be submitted by March 30 of each year which summarizes the Quality Assurance activities for the previous year. Duplicate chemical analyses must be conducted on a minimum of ten percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by USEPA or the Regional Water Board, the Discharger will participate in the NPDES discharge monitoring report QA performance study. The Discharger should have a success rate equal or greater than 80 percent.

H. Analysis for toxic pollutants, including acute and chronic toxicity, with performance goals based on water quality objectives of the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) shall be conducted in accordance with procedures described in the Ocean Plan and restated in this MRP.

I. A composite sample is defined as a combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. The 100 milliliter minimum volume of an aliquot does not apply to automatic self-purging samplers.

J. A grab sample is an individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

K. All influent, effluent, and receiving water data shall be submitted annually to USEPA for inclusion in the STORET database. The data shall be submitted in an electronic format specified by USEPA.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description (include Latitude and Longitude when available)	Depth (m)
--	INF-001	A location upstream of plant return streams, where a representative sample of the influent can be obtained	--
--	EMG-001	A location where a representative sample of the Tijuana Cross-Boarder Emergency Connection can be obtained.	--
001	EFF-001	A location where a representative sample of the effluent can be obtained	--
--	RS-001	A location where a representative sample of a return stream can be obtained; for multiple return streams, the return streams shall be sampled and composited based on each return streams contributing flow (flow weighted).	--
OFFSHORE MONITORING STATIONS			
--	F-001	32° 38.10'N; 117° 14.41'W	18[1]
--	F-002	32° 45.41'N; 117° 16.19'W	18[1]
--	F-003	32° 46.96'N; 117° 16.06'W	18[1]
--	F-004	32° 35.64'N; 117° 16.60'W	60[2]
--	F-005	32° 36.72'N; 117° 16.67'W	60[2]
--	F-006	32° 37.82'N; 117° 16.73'W	60[2]
--	F-007	32° 39.07'N; 117° 16.80'W	60[2]
--	F-008	32° 40.26'N; 117° 17.27'W	60[2]
--	F-009	32° 41.12'N; 117° 17.51'W	60[2]
--	F-010	32° 42.33'N; 117° 17.44'W	60[2]
--	F-011	32° 43.53'N; 117° 17.68'W	60[2]
--	F-012	32° 44.88'N; 117° 17.64'W	60[2]
--	F-013	32° 45.95'N; 117° 18.02'W	60[2]
--	F-014	32° 46.89'N; 117° 18.69'W	60[2]
--	F-015	32° 35.65'N; 117° 18.04'W	80[3]
--	F-016	32° 36.72'N; 117° 18.14'W	80[3]
--	F-017	32° 37.79'N; 117° 18.31'W	80[3]
--	F-018	32° 38.93'N; 117° 18.52'W	80[3]
--	F-019	32° 39.98'N; 117° 18.90'W	80[3]
--	F-020	32° 41.12'N; 117° 18.99'W	80[3]
--	F-021	32° 42.23'N; 117° 19.12'W	80[3]
--	F-022	32° 43.36'N; 117° 19.25'W	80[3]
--	F-023	32° 44.64'N; 117° 19.40'W	80[3]
--	F-024	32° 45.74'N; 117° 19.63'W	80[3]

--	F-025	32° 46.80’N; 117° 20.16’W	80[3]
--	F-026	32° 35.61’N; 117° 19.29’W	98[4]
--	F-027	32° 36.72’N; 117° 19.02’W	98[4]
--	F-028	32° 37.76’N; 117° 19.42’W	98[4]
--	F-029	32° 38.87’N; 117° 19.50’W	98[4]
--	F-030	32° 39.94’N; 117° 19.49’W	98[4]
--	F-031	32° 41.08’N; 117° 19.70’W	98[4]
--	F-032	32° 42.16’N; 117° 19.80’W	98[4]
--	F-033	32° 43.30’N; 117° 19.93’W	98[4]
--	F-034	32° 44.44’N; 117° 20.27’W	98[4]
--	F-035	32° 45.48’N; 117° 20.97’W	98[4]
--	F-036	32° 46.63’N; 117° 21.40’W	98[4]
KELP MONITORING STATIONS			
--	A-001	32° 39.56’; 117° 15.72’	18[1]
--	A-006	32° 41.56’; 117° 16.18’	18[1]
--	A-007	32° 40.53’; 117° 16.01’	18[1]
--	C-004	32° 39.95’; 117° 14.98’	9[5]
--	C-005	32° 40.75’; 117° 15.40’	9[5]
--	C-006	32° 41.62’; 117° 15.68’	9[5]
--	C-007	32° 42.98’; 117° 16.33’	18[1]
--	C-008	32° 43.96’; 117° 16.40’	18[1]
SHORELINE BACTERIA STATIONS			
--	D-004	At the southernmost tip of Point Loma just north of the lighthouse. 32° 39.94’; 117° 14.62’	--
--	D-005	Directly in front of the Point Loma Wastewater Treatment Plant where the outfall enters the ocean. 32° 40.85’; 117° 14.94’	--
--	D-007	Sunset Cliffs at the foot of the stairs seaward of Ladera Street. 32° 43.16’; 117° 15.44’	--
--	D-008	Ocean Beach at the foot of the stairs seaward of Bermuda Street. 32° 44.22’; 117° 15.32’	--
--	D-009	Just south of the Ocean Beach pier at the foot of the stairs seaward of Narragansett. 32° 44.80’; 117° 15.24’	--
--	D-010	Ocean Beach just north of west end of Newport Avenue, directly west of main lifeguard station. 32° 44.95’; 117° 15.18’	--
--	D-011	North Ocean Beach, directly west of south end of Dog Beach parking area at Voltaire St terminus, south of stub jetty. 32° 45.24’; 117° 15.16’	--

--	D-012	Mission Beach, directly west of main lifeguard station in Belmont Park located at the west end of Mission Bay Drive. 32° 46.28’; 117° 15.21’	--
OFFSHORE SEDIMENT STATIONS			
Primary Core Stations			
--	B-009	32° 45.33’; 117° 21.70’	98
--	B-012	32° 46.36’; 117° 22.30’	98
--	E-002	32° 37.45’; 117° 19.09’	98
--	E-005	32° 38.38’; 117° 19.28’	98
--	E-008	32° 38.91’; 117° 19.34’	98
--	E-011	32° 39.40’; 117° 19.42’	98
--	E-014	32° 39.94’; 117° 19.49’	98
--	E-017	32° 40.48’; 117° 19.54’	98
--	E-020	32° 40.96’; 117° 19.67’	98
--	E-023	32° 41.47’; 117° 19.77’	98
--	E-025	32° 42.38’; 117° 20.07’	98
--	E-026	32° 43.82’; 117° 20.57’	98
Secondary Core Stations			
--	B-008	32° 45.50’; 117° 20.77’	88
--	B-011	32° 46.57’; 117° 21.35’	88
--	E-001	32° 37.53’; 117° 18.35’	88
--	E-007	32° 39.00’; 117° 18.65’	88
--	E-019	32° 41.04’; 117° 19.18’	88
--	B-010	32° 45.22’; 117° 22.16’	116
--	E-003	32° 37.29’; 117° 20.09’	116
--	E-009	32° 38.75’; 117° 20.06’	116
--	E-015	32° 39.88’; 117° 19.91’	116
--	E-021	32° 40.89’; 117° 20.00’	116
TRAWL AND RIG FISH STATIONS			
--	SD-007 (Zone 4)	32° 35.06’; 117° 18.39’	100
--	SD-008 (Zone 3)	32° 37.54’; 117° 19.37’	100
--	SD-010 (Zone 1)	32° 39.16’; 117° 19.50’	100
--	SD-012 (Zone 1)	32° 40.65’; 117° 19.81’	100
--	SD-013 (Zone 2)	32° 42.83’; 117° 20.25’	100
--	SD-014 (Zone 2)	32° 44.30’; 117° 20.96’	100
Rig fish stations shall be located in an area centered around the following sites.			
--	RF-001	32° 40.32’; 117° 19.78’	107
--	RF-002	32° 45.67’; 117° 22.02’	96

[1] Discrete depths for bacteria samples include: 1m, 12m, and 18m.
[2] Discrete depths for bacteria samples include: 1m, 25m, and 60m.
[3] Discrete depths for bacteria samples include: 1m, 25m, 60m, and 80m.
[4] Discrete depths for bacteria samples include: 1m, 25m, 60m, 80m, and 98m.
[5] Discrete depths for bacteria samples include: 1m, 3m, and 9m.

III. INFLUENT AND EMERGENCY CONNECTION MONITORING REQUIREMENTS

A. Monitoring Location INF-001 and EMG-001

Influent monitoring is required to determine the effectiveness of pretreatment and non-industrial source control programs, to assess the performance of treatment facilities, and to evaluate compliance with effluent limitations. As such, influent monitoring results must accurately characterize raw wastewater from the entire service area of the treatment facilities, unaffected by in-plant return or recycle flows or the addition of treatment chemicals. Influent monitoring shall be conducted at INF-001 and EMG-001 as shown in the table below.

Table E-2. Influent and Emergency Connection Monitoring at INF-001 and EMG-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow rate	MGD	recorder/totalizer	Continuous	1
Biochemical Oxygen Demand (5-day @20℃) (BOD_5)	mg/L	24-hr composite	1/Day	1
Volatile Suspended Solids	mg/L	24-hr composite	1/Day	1
Total Dissolved Solids (TSS)	mg/L	24-hr composite	1/Day	1
Temperature	℃	grab	1/Day	1
Floating Particulates	mg/L	24-hr composite	1/Day	1
TABLE A PARAMETERS				
Oil and Grease	mg/L	grab	1/Day	1
Total Suspended Solids	mg/L	24-hr composite	1/Day	1
Settleable Solids	ml/L	grab	1/Day	1
Turbidity	NTU	grab	1/Day	1
pH	units	grab	1/Day	1
TABLE B PARAMETERS FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic, Total Recoverable	µg/L	24-hr composite	1/Week	1
Cadmium, Total Recoverable	µg/L	24-hr composite	1/Week	1
Chromium (VI) , Total Recoverable [2]	µg/L	24-hr composite	1/Week	1
Copper, Total Recoverable	µg/L	24-hr composite	1/Week	1
Lead, Total Recoverable	µg/L	24-hr composite	1/Week	1
Mercury, Total Recoverable[12]	µg/L	24-hr composite	1/Week	1
Nickel, Total Recoverable	µg/L	24-hr composite	1/Week	1
Selenium, Total Recoverable	µg/L	24-hr composite	1/Week	1
Silver, Total Recoverable	µg/L	24-hr composite	1/Week	1
Zinc, Total Recoverable	µg/L	24-hr composite	1/Week	1
Cyanide, Total Recoverable [3]	µg/L	24-hr composite	1/Week	1
Ammonia (as N)	µg/L	24-hr composite	1/Week	1
Phenolic Compounds (nonchlorinated)	µg/L	24-hr composite	1/Week	1
Phenolic Compounds (chlorinated)	µg/L	24-hr composite	1/Week	1

Endosulfan[11]	µg/L	24-hr composite	1/Week	1
Endrin	µg/L	24-hr composite	1/Week	1
HCH[4]	µg/L	24-hr composite	1/Week	1
Radioactivity	pci/l	24-hr composite	1/Month	1
TABLE B PARAMETERS FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS				
Acrolein	µg/L	grab	1/Month	1
Antimony	µg/L	24-hr composite	1/Month	1
Bis(2-chloroethoxy)methane	µg/L	24-hr composite	1/Month	1
Bis(2-chloroisopropyl) ether	µg/L	24-hr composite	1/Month	1
Chlorobenzene	µg/L	grab	1/Month	1
Chromium (III), Total Recoverable	µg/L	24-hr composite	1/Month	1
Di-n-butyl Phthalate	µg/L	24-hr composite	1/Month	1
Dichlorobenzenes[5]	µg/L	24-hr composite	1/Month	1
Diethyl Phthalate	µg/L	24-hr composite	1/Month	1
Dimethyl Phthalate	µg/L	24-hr composite	1/Month	1
4,6-dinitro-2-methylphenol	µg/L	24-hr composite	1/Month	1
2,4-dinitrophenol	µg/L	24-hr composite	1/Month	1
Ethylbenzene	µg/L	grab	1/Month	1
Fluoranthene	µg/L	24-hr composite	1/Month	1
Hexachlorocyclopentadiene	µg/L	24-hr composite	1/Month	1
Nitrobenzene	µg/L	24-hr composite	1/Month	1
Thallium, Total Recoverable	µg/L	24-hr composite	1/Month	1
Toluene	µg/L	grab	1/Month	1
Tributyltin	µg/L	24-hr composite	1/Month	1
1,1,1-trichloroethane	µg/L	grab	1/Month	1
TABLE B PARAMETERS FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS				
Acrylonitrile	µg/L	grab	1/Month	1
Aldrin	µg/L	24-hr composite	1/Week	1
Benzene	µg/L	grab	1/Month	1
Benzidine	µg/L	24-hr composite	1/Month	1
Beryllium	µg/L	24-hr composite	1/Month	1
Bis(2-chloroethyl) Ether	µg/L	24-hr composite	1/Month	1
Bis(2-ethlyhexyl) Phthalate	µg/L	24-hr composite	1/Month	1
Carbon Tetrachloride	µg/L	grab	1/Month	1
Chlordane	µg/L	24-hr composite	1/Week	1
Chlorodibromethane	µg/L	24-hr composite	1/Month	1
Chloroform	µg/L	grab	1/Month	1
DDT[6]	µg/L	24-hr composite	1/Week	1
1,4-dichlorobenzene	µg/L	24-hr composite	1/Month	1
3,3'-dichlorobenzidine	µg/L	24-hr composite	1/Month	1
1,2-dichloroethane	µg/L	grab	1/Month	1
1,1-dichloroethylene	µg/L	grab	1/Month	1
Dichlorobromomethane	µg/L	24-hr composite	1/Month	1
Dichloromethane	µg/L	grab	1/Month	1
1,3-dichloropropene	µg/L	24-hr composite	1/Month	1

Dieldrin	µg/L	24-hr composite	1/Week	1
2,4-dinitrotoluene	µg/L	24-hr composite	1/Month	1
1,2-diphenylhydrazine	µg/L	24-hr composite	1/Month	1
Halomethanes[7]	µg/L	24-hr composite	1/Month	1
Heptachlor	µg/L	24-hr composite	1/Month	1
Heptachlor Epoxide	µg/L	24-hr composite	1/Month	1
Hexachlorobenzene	µg/L	24-hr composite	1/Month	1
Hexachlorobutadiene	µg/L	24-hr composite	1/Month	1
Hexachloroethane	µg/L	24-hr composite	1/Month	1
Isophorone	µg/L	24-hr composite	1/Month	1
N-nitrosodimethylamine	µg/L	24-hr composite	1/Month	1
N-nitrosodi-N-propylamine	µg/L	24-hr composite	1/Month	1
N-nitrosodiphenylamine	µg/L	24-hr composite	1/Month	1
PAHs[8]	µg/L	24-hr composite	1/Month	1
PCBs[9]	µg/L	24-hr composite	1/Week	1
1,1,2,2-tetrachloroethane	µg/L	grab	1/Month	1
TCDD equivalents[10]	µg/L	24-hr composite	1/Month	1
Tetrachloroethylene	µg/L	grab	1/Month	1
Toxaphene	µg/L	24-hr composite	1/Week	1
Trichloroethylene	µg/L	grab	1/Month	1
1,1,2-trichloroethane	µg/L	grab	1/Month	1
2,4,6-trichlorophenol	µg/L	24-hr composite	1/Month	1
Vinyl Chloride	µg/L	grab	1/Month	1
Remaining priority pollutants[13]	µg/L	24-hr composite	1/Month	1

1 As required under 40 CFR 136.

2 Dischargers may, at their option, meet this limitation (or apply this performance goal) as a total chromium limitation (or performance goal).

3 If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations (or performance goals) for cyanide may be met by the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometalic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR 136

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

5 Dichlorobenzenes represent the sum of 1,2- and 1,3-dichlorobenzene.

6 DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDT (dichlorodiphenyltrichloroethane) represent the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.

7 Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

8 PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[ah]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

9 PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

10 TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 1613 shall be used to analyze TCDD equivalents.

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

[11] Endosulfan shall mean the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.
[12] USEPA Method 1631E, with a quantitation level of 0.5 ng/L, shall be used to analyze total mercury.
[13] Also including the 301(h) pesticides listed at 40 CFR 125.58(p).

IV. EFFLUENT MONITORING REQUIREMENTS

Effluent monitoring is required to determine compliance with the permit conditions and to identify operational problems and improve plant performance. Effluent monitoring also provides information on wastewater characteristics and flows for use in interpreting water quality and biological data. The effluent sampling station shall be located where representative samples of the effluent can be obtained. The sampling station shall be located downstream from any in-plant return flows and from the last connection through which waste can be admitted to the outfalll. The If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level. Discharger shall monitor effluent at EFF-001 as follows.

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow rate	MGD	recorder/totalizer	Continuous	[1]
BOD_5@20°C	mg/L	24-hr composite	1/Day	[1]
	% removal[13]	calculate	1/Day	[1]
Volatile Suspended Solids	mg/L	24-hr composite	1/Day	[1]
Total Dissolved Solids	mg/L	24-hr composite	1/Day	[1]
Temperature	°C	grab	1/Day	[1]
Total Residual Chlorine[15]	µg/L	Continuous[12]	Continuous	[1]
Floating Particulates	mg/L	24-hr composite	1/Day	[1]
TABLE A PARAMETERS				
Oil and Grease	mg/L	grab	1/Day	[1]
Total Suspended Solids	mg/L	24-hr composite	1/Day	[1]
	% removal[13]	calculate	1/Day	[1]
Settleable Solids	ml/L	grab	1/Day	[1]
Turbidity	NTU	grab	1/Day	[1]

pH	units	grab	1/Day	1
Total Coliform	CFU/100ml	grab	1/Week	
Fecal Coliform	CFU/100ml	grab	1/Week	
Enterococcus	CFU/100ml	grab	1/Week	
TABLE B PARAMETERS FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic, Total Recoverable	µg/L	24-hr composite	1/Week	1
Cadmium, Total Recoverable	µg/L	24-hr composite	1/Week	1
Chromium (VI) , Total Recoverable [2]	µg/L	24-hr composite	1/Week	1
Copper, Total Recoverable	µg/L	24-hr composite	1/Week	1
Lead, Total Recoverable	µg/L	24-hr composite	1/Week	1
Mercury, Total Recoverable[14]	µg/L	24-hr composite	1/Week	1
Nickel, Total Recoverable	µg/L	24-hr composite	1/Week	1
Selenium, Total Recoverable	µg/L	24-hr composite	1/Week	1
Silver, Total Recoverable	µg/L	24-hr composite	1/Week	1
Zinc, Total Recoverable	µg/L	24-hr composite	1/Week	1
Cyanide, Total Recoverable [3]	µg/L	24-hr composite	1/Week	1
Ammonia (as N)	µg/L	24-hr composite	1/Week	1
Phenolic Compounds (nonchlorinated)	µg/L	24-hr composite	1/Week	1
Phenolic Compounds (chlorinated)	µg/L	24-hr composite	1/Week	1
Endosulfan[11]	µg/L	24-hr composite	1/Week	1
Endrin	µg/L	24-hr composite	1/Week	1
HCH[4]	µg/L	24-hr composite	1/Week	1
Radioactivity	pci/l	24-hr composite	1/Month	1
TABLE B PARAMETERS FOR PROTECTION OF HUMAN HEALTH – NON CARCINOGENS				
Acrolein	µg/L	grab	1/Month	1
Antimony	µg/L	24-hr composite	1/Month	1
bis(2-chloroethoxy)methane	µg/L	24-hr composite	1/Month	1
Bis(2-chloroisopropyl) ether	µg/L	24-hr composite	1/Month	1
Chlorobenzene	µg/L	grab	1/Month	1
Chromium (III)	µg/L	24-hr composite	1/Month	1
Di-n-butyl Phthalate	µg/L	24-hr composite	1/Month	1
Dichlorobenzenes[5]	µg/L	24-hr composite	1/Month	1
Diethyl Phthalate	µg/L	24-hr composite	1/Month	1
Dimethyl Phthalate	µg/L	24-hr composite	1/Month	1
4,6-dinitro-2-methylphenol	µg/L	24-hr composite	1/Month	1
2,4-dinitrophenol	µg/L	24-hr composite	1/Month	1
Ethylbenzene	µg/L	grab	1/Month	1
Fluoranthene	µg/L	24-hr composite	1/Month	1
Hexachlorocyclopentadiene	µg/L	24-hr composite	1/Month	1
Nitrobenzene	µg/L	24-hr composite	1/Month	1
Thallium, Total Recoverable	µg/L	24-hr composite	1/Month	1
Toluene	µg/L	grab	1/Month	1
Tributyltin	µg/L	24-hr composite	1/Month	1

1,1,1-trichloroethane	µg/L	grab	1/Month	[1]
TABLE B PARAMETERS FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS				
Acrylonitrile	µg/L	grab	1/Month	[1]
Aldrin	µg/L	24-hr composite	1/Week	[1]
Benzene	µg/L	grab	1/Month	[1]
Benzidine	µg/L	24-hr composite	1/Month	[1]
Beryllium	µg/L	24-hr composite	1/Month	[1]
Bis(2-chloroethyl) Ether	µg/L	24-hr composite	1/Month	[1]
Bis(2-ethlyhexyl) Phthalate	µg/L	24-hr composite	1/Month	[1]
Carbon Tetrachloride	µg/L	grab	1/Month	[1]
Chlordane	µg/L	24-hr composite	1/Week	[1]
Chlorodibromethane	µg/L	24-hr composite	1/Month	[1]
Chloroform	µg/L	grab	1/Month	[1]
DDT[6]	µg/L	24-hr composite	1/Week	[1]
1,4-dichlorobenzene	µg/L	24-hr composite	1/Month	[1]
3,3'-dichlorobenzidine	µg/L	24-hr composite	1/Month	[1]
1,2-dichloroethane	µg/L	grab	1/Month	[1]
1,1-dichloroethylene	µg/L	grab	1/Month	[1]
Dichlorobromomethane	µg/L	24-hr composite	1/Month	[1]
Dichloromethane	µg/L	grab	1/Month	[1]
1,3-dichloropropene	µg/L	24-hr composite	1/Month	[1]
Dieldrin	µg/L	24-hr composite	1/Week	[1]
2,4-dinitrotoluene	µg/L	24-hr composite	1/Month	[1]
1,2-diphenylhydrazine	µg/L	24-hr composite	1/Month	[1]
Halomethanes[7]	µg/L	24-hr composite	1/Month	[1]
Heptachlor	µg/L	24-hr composite	1/Month	[1]
Heptachlor Epoxide	µg/L	24-hr composite	1/Month	[1]
Hexachlorobenzene	µg/L	24-hr composite	1/Month	[1]
Hexachlorobutadiene	µg/L	24-hr composite	1/Month	[1]
Hexachloroethane	µg/L	24-hr composite	1/Month	[1]
Isophorone	µg/L	24-hr composite	1/Month	[1]
N-nitrosodimethylamine	µg/L	24-hr composite	1/Month	[1]
N-nitrosodi-N-propylamine	µg/L	24-hr composite	1/Month	[1]
N-nitrosodiphenylamine	µg/L	24-hr composite	1/Month	[1]
PAHs[8]	µg/L	24-hr composite	1/Month	[1]
PCBs[9]	µg/L	24-hr composite	1/Week	[1]
1,1,2,2-tetrachloroethane	µg/L	grab	1/Month	[1]
TCDD equivalents[10]	µg/L	24-hr composite	1/Month	[1]
Tetrachloroethylene	µg/L	grab	1/Month	[1]
Toxaphene	µg/L	24-hr composite	1/Week	[1]
Trichloroethylene	µg/L	grab	1/Month	[1]
1,1,2-trichloroethane	µg/L	grab	1/Month	[1]
2,4,6-trichlorophenol	µg/L	24-hr composite	1/Month	[1]
Vinyl Chloride	µg/L	grab	1/Month	[1]
Remaining priority pollutants[16]	µg/L	24-hr composite	1/Month	[1]

[1] As required under 40 CFR 136.

[2] Dischargers may, at their option, meet this limitation (or apply this performance goal) as a total chromium limitation (or performance goal).

[3] If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations (or performance goals) for cyanide may be met by the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometalic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR 136

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

[5] Dichlorobenzenes represent the sum of 1,2- and 1,3-dichlorobenzene.

[6] DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDT (dichlorodiphenyltrichloroethane) represent the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.

[7] Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

[8] PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[ah]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

[9] PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

[10] TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 1613 shall be used to analyze TCDD equivalents.

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

[11] Endosulfan shall mean the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.

[12] Continuous monitoring for total residual chlorine becomes effective 6 months after the adoption date of this Order. At a minimum, daily grab samples shall be taken until continuous monitoring becomes possible (not to exceed 180 days following the adoption of this Order).

[13] Percent removal shall be calculated and reported based on mass for the Point Loma WTP and System-Wide:

Point Loma WTP % removal = (Influent mass – effluent mass) / Influent mass
Where:
Influent mass (lbs/day) = Influent flow (MGD) x influent parameter concentration (mg/L) x 8.34
Effluent mass (lbs/day) = Effluent flow (MGD) x effluent parameter concentration (mg/L) x 8.34

System-Wide % removal = [((System Influents–Return Streams) – Outfall Discharge)/(System Influents-Return Streams)] X 100
Where:

System Influents = Point Loma WTP influent, North City Water Reclamation Plant (NCWRP) Influent Pump Station, and NCWRP Influent from Penasquitos Pump Station.
Return Streams = NCWRP Filter Backwash, NCWRP Plant Drain, NCWRP Secondary and Un-disinfected Filtered Effluent Bypass, NCWRP Final Effluent, and MBC Centrate.

[14] USEPA Method 1631E, with a quantitation level 0.5 ng/l, shall be used to analyzed total mercury.
[15] Continuous monitoring is required. Within 180 days of the effective date of this permit, the Discharger shall begin continuous monitoring for total chlorine residual. Until that time, at least four grab samples per day, representative of the daily discharge, shall be collected immediately prior to entering the PLOO and analyzed for total chlorine residual. A split of each sample shall be concurrently monitored for bacteria indicator levels.
[16] Also including the 301(h) pesticides listed at 40 CFR 125.58(p).

For system-wide percent removal the TSS and BOD_5 concentration, together with flow rate, of each stream shall be measured daily and a system-wide removal rate calculated according to the above formula. In the event that a flow rate measurement, TSS concentration, or BOD_5 concentration is not obtained from a stream, the median value for the previous calendar year for that stream shall be used as a surrogate number to allow completion of the calculation. The Discharger shall be required to flag values where surrogate numbers are used in their self-monitoring reports submitted to the Executive Officer. The failure to obtain a value may still be considered a violation of the permit that could result in enforcement action depending on the frequency of failures and efforts by the Discharger to prevent such failures.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall conduct acute and chronic toxicity testing on effluent samples collected at Effluent Monitoring Station EFF-001 in accordance with the following schedule and requirements:

Table E-4. Whole Effluent Toxicity Testing

Test	Unit	Sample	Minimum Test Frequency
Acute Toxicity	TU_a	24-Hr Composite	2/Year
Chronic Toxicity	TU_c	24-Hr. Composite	1/Month

A. Chronic Whole Effluent Toxicity Testing Requirements

1. Monitoring Frequency for Chronic Toxicity

The Discharger shall conduct monthly chronic toxicity tests on 24-hour composite effluent samples. Once each calendar year, at a different time of year from the previous years, the Discharger shall split a 24-hour composite effluent sample and concurrently conduct three toxicity tests using a fish, an invertebrate, and an alga species; the Discharger shall then continue to conduct routine monthly toxicity testing using the single, most sensitive species.

Chronic toxicity test samples shall be collected for each point of discharge at the designated NPDES sampling station for the effluent (i.e., downstream from the last treatment process and any in-plant return flows where a representative effluent sample can be obtained). A split of each sample shall be analyzed for all other monitored parameters at the minimum frequency of analysis specified by the effluent monitoring program.

2. Marine and Estuarine Species and Chronic Test Methods

Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the first edition of *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), as amended, and applicable water quality standards. The Discharger shall conduct a static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01); a static non-renewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0); and a toxicity test with one of the following invertebrate species:

a. Static renewal toxicity test with the mysid, *Holmesimysis costata* (Survival and Growth Test Method 1007.01);
b. Static non-renewal toxicity test with the Pacific oyster, *Crassostrea gigas*, or the mussel, *Mytilus* spp., (Embryo-larval Shell Development Test Method 1005.0);
c. Static non-renewal toxicity test with the red abalone, *Haliotis rufescens* (Larval Shell Development Test Method);
d. Static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*, or the sand dollar, *Dendraster excentricus* (Embryo-larval Development Test Method); or
e. Static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*, or the sand dollar, *Dendraster excentricus* (Fertilization Test Method 1008.0).

If laboratory-held cultures of the topsmelt, *Atherinops affinis*, are not available for testing, then the Discharger shall conduct a static renewal toxicity test with the inland silverside, *Menidia beryllina* (Larval Survival and Growth Test Method 1006.01), found in the third edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA/821/R-02/014, 2002; Table IA, 40 CFR Part 136).

3. Quality Assurance for Chronic Toxicity Testing

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

b. For this discharge, a mixing zone or dilution allowance is authorized. The chronic instream waste concentration (IWC) for this discharge is 0.4878%

effluent. A series of at least five effluent dilutions and a control shall be tested. At minimum, the dilution series shall include and bracket the IWC.

c. Effluent dilution water and control water should be prepared and used as specified in the test methods manual *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) and/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). If the dilution water is different from test organism culture water, then a second control using culture water shall also be used. If the use of artificial sea salts is considered provisional in the test method, then artificial sea salts shall not be used to increase the salinity of the effluent sample prior to toxicity testing without written approval by the Executive Officer and USEPA.

d. If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.).

e. If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the test methods manual, then the Discharger must resample and retest within 14 days.

f. Following Paragraph 10.2.6.2 in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA/821/R-02/014, 2002), all chronic toxicity test results from the multi-concentration tests required by this permit must be reviewed and reported according to USEPA guidance on the evaluation of concentration-response relationships found in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 CFR 136) (EPA/821/B-00-004, 2000).

g. Because this permit requires sublethal hypothesis testing endpoints from test methods in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995), within-test variability must be reviewed for acceptability and a variability criterion (upper %MSD bound) must be applied, as directed under each test method. Based on this review, only accepted effluent toxicity test results shall be reported on the DMR form. If excessive within-test variability invalidates a test result, then the Discharger must resample and retest within 14 days.

h. Because this permit provides for a sublethal hypothesis testing endpoint from Method 1006.0 in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*

(EPA/821/R-02/014, 2002), within-test variability must be reviewed for acceptability and variability criteria (upper and lower PMSD bounds) must be applied, as directed under Section 10.2.8 - Test Variability of the test methods manual *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*. Under Section 10.2.8, the calculated percent minimum significant difference (PMSD) for both reference toxicant test and effluent toxicity test results must be compared with the upper and lower PMSD bounds variability criteria specified in Table 6 - Variability Criteria (Upper and Lower PMSD Bounds) for Sublethal Hypothesis Testing Endpoints Submitted Under NPDES Permits, following the review criteria in Paragraphs 10.2.8.2.1 through 10.2.8.2.5 of the test methods manual. Based on this review, only accepted effluent toxicity test results shall be reported on the DMR form. If excessive within-test variability invalidates a test result, then the Discharger must resample and retest within 14 days.

i. If the effluent is chlorinated and discharged without further treatment, then chlorine shall not be removed from the effluent sample prior to toxicity testing without written approval by the Executive Officer and USEPA.

j. pH drift during the toxicity test may contribute to artifactual toxicity when pH-dependent toxicants (e.g., ammonia, metals) are present in an effluent. To determine whether or not pH drift during the toxicity test is contributing to artifactual toxicity, the Discharger shall conduct three sets of parallel toxicity tests, in which the pH of one treatment is controlled at the pH of the effluent and the pH of the other treatment is not controlled, as described in Section 11.3.6.1 of the test methods manual, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002). Toxicity is confirmed to be artifactual and due to pH drift when no toxicity above the chronic toxicity effluent limit is observed in the treatments controlled at the pH of the effluent. If toxicity is confirmed to be artifactual and due to pH drift, then, following written approval by the Executive Officer and USEPA, the Discharger may use the procedures outlined in Section 11.3.6.2 of the test methods manual to control sample pH during the toxicity test.

4. Reporting of Chronic Toxicity Monitoring Results

a. A full laboratory report for all toxicity testing shall be submitted as an attachment to the DMR for the month in which the toxicity test was conducted and shall also include: the toxicity test results—in NOEC; TUc = 100/NOEC; EC25 (or IC25); and TUc = 100/EC25 (or IC25)—reported according to the test methods manual chapter on report preparation and test review; the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on accelerated testing and TRE/TIE investigations.

b. The Discharger shall notify the Regional Water Board and USEPA in writing within 14 days of exceedance of the chronic toxicity effluent limit. This notification shall describe actions the Discharger has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

B. Acute Whole Effluent Toxicity Testing Requirements

1. Monitoring Frequency for Acute Toxicity

The Discharger shall conduct semi-annual acute toxicity tests on 24-hour composite effluent samples. Once each calendar year, at a different time of year from the previous years, the Discharger shall split a 24-hour composite effluent sample and concurrently conduct two toxicity tests using a fish and an invertebrate species; the Discharger shall then continue to conduct routine semi-annual toxicity testing using the single, most sensitive species.

Acute toxicity test samples shall be collected for each point of discharge at the designated NPDES sampling station for the effluent (i.e., downstream from the last treatment process and any in-plant return flows where a representative effluent sample can be obtained). A split of each sample shall be analyzed for all other monitored parameters at the minimum frequency of analysis specified by the effluent monitoring program.

2. Marine and Estuarine Species and Acute Test Methods

The Discharger shall conduct 96-hour static renewal toxicity tests with the following vertebrate species:

a. The topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.0 in the first edition of 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) (preferred for Pacific Coast waters);

b. The Inland silverside, *Menidia beryllina*; Atlantic silverside, *Menidia menidia*; or Tidewater silverside, *Menidia peninsulae* (Acute Toxicity Test Method 2006.0);

c. The sheepshead minnow, *Cyprinodon variegates* (Acute Toxicity Test Method 2004.0);

And the following invertebrate species:

d. The West Coast mysid, *Holmesimysis costata* (Table 19 in the acute test methods manual) (preferred for Pacific Coast waters);

e. The mysid, *Americamysis bahia* (Acute Toxicity Test Method 2007.0).

Where not indicated, above, species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the fifth edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136).

3. Quality Assurance for Acute Toxicity Testing

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

b. For this discharge, a mixing zone or dilution allowance is authorized such that the critical IWC is set at a % effluent value lower than 100% effluent. The acute instream waste concentration (IWC) for this discharge is 15.57% effluent. A series of at least five effluent dilutions and a control shall be tested. At minimum, the dilution series shall include and bracket the IWC.

c. Effluent dilution water and control water should be prepared and used as specified in the test methods manual *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002); and/or, for *Atherinops affinis*, *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). If the dilution water is different from test organism culture water, then a second control using culture water shall also be used. If the use of artificial sea salts is considered provisional in the test method, then artificial sea salts shall not be used to increase the salinity of the effluent sample prior to toxicity testing without written approval by the Executive Officer and USEPA.

d. If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.).

e. If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the test methods manual, then the Discharger must resample and retest within 14 days.

f. Following Paragraph 12.2.6.2 of the acute test methods manual, all acute toxicity test results from the multi-concentration tests required by this permit must be reviewed and reported according to USEPA guidance on the evaluation of concentration-response relationships found in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 CFR 136) (EPA/821/B-00/004, 2000).

g. Within-test variability of individual toxicity tests should be reviewed for acceptability and variability criteria (upper and lower PMSD bounds) should be applied, as directed under Section 12.2.8 - Test Variability of the test methods manual, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*. Under Section 12.2.8, the calculated percent minimum significant difference (PMSD) for both reference toxicant test and effluent toxicity test results must be compared with the upper and lower PMSD bounds variability criteria specified in Table 3-6 - Range of Relative Variability for Endpoints of Promulgated WET Methods, Defined by the 10th and 90th Percentiles from the Data Set of Reference Toxicant Tests, taken from *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program* (EPA/833/R-00/003, 2000). Based on this review, only accepted effluent toxicity test results shall be reported on the DMR form. If excessive within-test variability invalidates a test result, then the Discharger must resample and retest within 14 days.

h. Because this permit provides for a 96-hour LC50 endpoint from Method 1006.0 in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995), with-in test variability must be reviewed for acceptability and a variability criterion (upper %MSD bound) must be applied, as directed under the test method. Based on this review, only accepted effluent toxicity test results shall be reported on the DMR form. If excessive within-test variability invalidates a test result, then the Discharger must resample and retest within 14 days.

i. If the effluent is chlorinated and discharged without further treatment, then chlorine shall not be removed from the effluent sample prior to toxicity testing without written approval by the Executive Officer and USEPA.

j. Where total ammonia concentrations in the effluent are >5 mg/l, toxicity may be contributed by unionized ammonia. pH drift during the toxicity test may contribute to artifactual toxicity when ammonia or other pH-dependent toxicants (e.g., metals) are present. This problem is minimized by conducting toxicity tests in a static-renewal or flow-through mode, as outlined in Paragraph 9.5.9 of the acute test methods manual.

4. Reporting of Acute Toxicity Monitoring Results

a. A full laboratory report for all toxicity testing shall be submitted as an attachment to the DMR for the month in which the toxicity test was conducted and shall also include: the toxicity test results—LC50; TUa = 100/LC50—reported according to the test methods manual chapter on report preparation and test review; the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TRE/TIE investigations.

c. The Discharger shall notify the Regional Water Board and USEPA in writing within 14 days of exceedance of an acute toxicity effluent performance goal. This notification shall describe actions the Discharger has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Core Monitoring

There are five components to the Core Monitoring Program: general water quality monitoring and bacteriological monitoring of shoreline, kelp bed, and offshore waters; offshore sediment monitoring for grain size, chemistry, and benthic infauna community structure; offshore monitoring for fish and megabenthic invertebrate communities, and contaminant body burdens of fishes; and nearshore monitoring of kelp bed canopy cover.

1. General Water Quality Monitoring of Shoreline, Kelp Bed and Offshore Waters

The general water quality monitoring program is designed to help evaluate the fate of the wastewater plume under various conditions and to determine if Ocean Plan water quality standards are being met. The Discharger shall monitor the receiving water at the offshore, kelp bed, and shoreline monitoring stations, as follows:

Table E-5. General Water Quality Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency			Required Analytical Test Method
			Offshore Stations	Kelp Stations	Shoreline Stations	
Temperature	°C	Profile	1/Quarter	5/Month	--	[1]
Salinity	ppt	Profile	1/Quarter	5/Month	--	[1]
Dissolved Oxygen	mg/L	Profile	1/Quarter	5/Month	--	[1]
Light Transmittance	%	Profile	1/Quarter	5/Month	--	[1]
Chlorophyll a	m	Profile	1/Quarter	5/Month	--	[1]
pH	units	Profile	1/Quarter	5/Month	--	[1]
Ammonium (NH4+)	mg/L	Profile	1/Quarter	5/Month	--	[1]
Visual Observations[2]	--	Visual	1/Quarter	5/Month	5/Month	--

[1] As specified in 40 CFR 136.3.
[2] Visual observations shall note the presence or absence of floatable materials of sewage origin. Observations of wind (direction and speed), weather (e.g., cloudy, sunny, or rainy), and tidal conditions (e.g., high or low

tide) shall be recorded. Observations of water color, discoloration, oil and grease, turbidity, odor, materials of sewage origin in the water or on the beach shall be recorded. These observations shall be recorded whenever a sample is collected. Further, the nature and extent of primary contact recreation use in federal waters must be noted and reported.

Within 180 days of the effective date of this permit, the Discharger shall develop and implement a methodology for data analysis which identifies and logically evaluates out-of-range occurrences (ORO) for compliance with Ocean Plan water quality standards for transmissivity, dissolved oxygen, and pH, at offshore water quality stations. Data should be statistically evaluate by stratum (e.g., above, within, below pycnocline) and station. Sampling date reference station(s) should be identified using ocean current measurements and the location of the wastewater plume, etc. For analysis and discussion, stations may be grouped into relevant zones. The total number of out-of-compliance (OOC) events should be summed by parameter and the percentage of OROs and OOC calculated based on comparison with the total number of observations. Coordination with the State and Regional Water Boards, USEPA, and SCCWRP is encouraged.

2. Bacteriological Monitoring of Shoreline, Kelp Bed and Offshore Waters

The bacteriological monitoring program is designed help evaluate the fate of the wastewater plume under various conditions, to determine if Ocean Plan water quality standards for recreational waters are being met, and to address issues of beach water quality at the shoreline. The Discharger shall monitor the receiving water at the offshore, kelp bed, and shoreline monitoring stations, as follows:

Table E-6. Bacteriological Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency			Required Analytical Test Method
			Offshore Stations	Shoreline Stations	Kelp Stations	
Total Coliform	CFU/100ml	Grab	--	5/Month	5/Month	[1,2]
Fecal Coliform	CFU/100ml	Grab	--	5/Month	5/Month	[1,2]
Enterococcus	CFU/100ml	Grab	1/Quarter	5/Month	5/Month	[1,2]

[1] As specified in 40 CFR 136.3.
[2] Shall be monitored at all applicable discrete depths specified for bacterial monitoring in Table E-1.
[3] Total coliform, fecal coliform, and enterococcus shall be sampled at the eight kelp bed stations at least five times per month, such that each day of the week is represented over a two month period.

3. Offshore Sediment Monitoring

The physical and chemical properties of sediments and the biological communities that live in or on these sediments are monitored to evaluate potential effects of the PLOO discharge and compliance with narrative water quality standards in the Ocean Plan. The core sediment monitoring program is designed to assess spatial and temporal trends. At the direction of the Regional Water Board and USEPA, the requirement for sampling the secondary stations for the offshore sediment monitoring program can be relaxed to allow Discharger participation in Bight-wide regional monitoring efforts, or to accommodate Strategic Process Studies.

Twice per year (January and July), sediment samples for grain size and chemistry shall be collected from the offshore sediment monitoring locations specified in Table E-1, which consists of 12 primary stations and an additional 10 secondary stations. Sediment grab samples shall be taken using a 0.1 square meter modified Van Veen grab sampler. Samples for grain size and chemical analyses shall be taken from the top 2 centimeters of the grab. These samples shall be analyzed for the list of constituents, below. Chemical analysis of sediment shall be conducted using USEPA approved methods, methods developed by NOAA's National Status and Trends for Marine Environmental Quality, or methods developed in conjunction with the Southern California Bight Regional Monitoring Program. For chemical analysis of sediment, sample results shall be reported on a dry weight basis.

Table E-7. Offshore Sediment Chemistry Monitoring

Parameter	Units	Type of Sample	Minimum Frequency
Sediment grain size	µm	grab	2/Year[2]
Total Organic Carbon	Percent	grab	2/Year[2]
Total Nitrogen	Percent	grab	2/Year[2]
Acid Volatile Sulfides	mg/kg	grab	2/Year[2]
METALS			
Aluminum, Total Recoverable	mg/kg	grab	2/Year[2]
Antimony, Total Recoverable	mg/kg	grab	2/Year[2]
Arsenic, Total Recoverable	mg/kg	grab	2/Year[2]
Cadmium, Total Recoverable	mg/kg	grab	2/Year[2]
Chromium, Total Recoverable	mg/kg	grab	2/Year[2]
Copper, Total Recoverable	mg/kg	grab	2/Year[2]
Iron, Total Recoverable	mg/kg	grab	2/Year[2]
Lead, Total Recoverable	mg/kg	grab	2/Year[2]
Manganese, Total Recoverable	mg/kg	grab	2/Year[2]
Mercury, Total Recoverable	mg/kg	grab	2/Year[2]
Nickel, Total Recoverable	mg/kg	grab	2/Year[2]
Selenium, Total Recoverable	mg/kg	grab	2/Year[2]
Silver, Total Recoverable	mg/kg	grab	2/Year[2]
Tin, Total Recoverable	mg/kg	grab	2/Year[2]
Zinc, Total Recoverable	mg/kg	grab	2/Year[2]
PCBs AND CHLORINATED PESTICIDES			
PCBs[1]	ng/kg	grab	2/Year[2]
2,4-DDD	ng/kg	grab	2/Year[2]
4,4-DDD	ng/kg	grab	2/Year[2]
2,4-DDE	ng/kg	grab	2/Year[2]
4,4-DDE	ng/kg	grab	2/Year[2]
2,4-DDT	ng/kg	grab	2/Year[2]
2,4-DDT	ng/kg	grab	2/Year[2]

Parameter	Units	Type of Sample	Minimum Frequency
Aldrin	ng/kg	grab	2/Year[2]
Alpha-Chlordane	ng/kg	grab	2/Year[2]
Dieldrin	ng/kg	grab	2/Year[2]
Endosulfan	ng/kg	grab	2/Year[2]
Endrin	ng/kg	grab	2/Year[2]
Gamma-BHC	ng/kg	grab	2/Year[2]
Heptachlor	ng/kg	grab	2/Year[2]
Heptachlor Epoxide	ng/kg	grab	2/Year[2]
Hexachlorobenzene	ng/kg	grab	2/Year[2]
Mirex	ng/kg	grab	2/Year[2]
Trans-Nonachlor	ng/kg	grab	2/Year[2]
POLYCYLIC AROMATIC HYDROCARBONS			
Acenapthene	µg/kg	grab	2/Year[2]
Acenaphthylene	µg/kg	grab	2/Year[2]
Anthracene	µg/kg	grab	2/Year[2]
Benzo(a)anthracene	µg/kg	grab	2/Year[2]
Benzo(o)fluoranthene	µg/kg	grab	2/Year[2]
Benzo(k)fluoranthene	µg/kg	grab	2/Year[2]
Benzo(ghi)pyrelene	µg/kg	grab	2/Year[2]
Benzo(a)pyrene	µg/kg	grab	2/Year[2]
Benzo(e)pyrene	µg/kg	grab	2/Year[2]
Biphenyl	µg/kg	grab	2/Year[2]
Chrysene	µg/kg	grab	2/Year[2]
Dibenz(ah)anthrace	µg/kg	grab	2/Year[2]
Fluoranthene	µg/kg	grab	2/Year[2]
Fluorene	µg/kg	grab	2/Year[2]
Ideno(123cd)pyrene	µg/kg	grab	2/Year[2]
Naphthalene	µg/kg	grab	2/Year[2]
1-Methylnaphthalene	µg/kg	grab	2/Year[2]
2-Methylnaphthalene	µg/kg	grab	2/Year[2]
2,6-Dimethylnaphthalene	µg/kg	grab	2/Year[2]
2,3,5-Trimethylnaphthalene	µg/kg	grab	2/Year[2]
Perylene	µg/kg	grab	2/Year[2]
Phenanthrene	µg/kg	grab	2/Year[2]
1-Methylphenanthrene	µg/kg	grab	2/Year[2]
Pyrene	µg/kg	grab	2/Year[2]

[1] For sediment and fish tissue PCBs shall mean the sum of the following congeners: 18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206. These represent concensus based numbers developed by agencies participating in offshore regional monitoring programs in Southern California. These 41 congeners are thought to represent the most-important PCB congeners in terms of mass and toxicity.

[2] To occur in January and July.

Twice per year (January and July), sediment samples for benthic infauna community structure shall be collected from the offshore sediment monitoring locations specified in Table E-1, which consists of 12 primary stations and an additional 10 secondary stations. Two replicate samples shall be taken using a 0.1 square meter modified Van Veen grab sampler. These samples shall be separate from those collected for grain size and chemistry. The samples shall be sieved using a 1.0-mm mesh screen. The benthic organisms retained on the sieve shall be fixed in 15 percent buffered formalin and transferred to 70 percent ethanol within two to seven days for storage. All retained benthic infauna organisms shall be counted and identified to as low a taxon as possible. This enumeration and identification of organisms continues to use the historical database developed by the Discharger.

Analysis of benthic community structure shall include determination of the number of species, number of individuals per species, and total numerical abundance present. The following parameters shall be summarized for each station:

a. Average number of species (species richness) per 0.1 m^2;
b. Total number of species per station;
c. Total numerical abundance;
d. Infaunal trophic index (ITI);
e. Benthic response index (BRI);
f. Swartz' 75% dominance index;
g. Shannon-Weiner's diversity index (H'); and
h. Pielou evenness (J')

4. Fish and Invertebrate Monitoring

Epibenthic trawls shall be conducted to assess the structure of demersal fish and megabenthic invertebrate communities, while the presence of priority pollutants in fish will be analyzed from species captured using both trawling and rig fishing techniques. Single community trawls for fish and invertebrates shall be conducted semi-annually at six trawl stations specified in Table E-1. These stations represent an area near Discharge Point No. 001 (Stations SD-010 and SD-012), an area upcoast of Discharge Point No. 001 (Stations SD-013 and SD-014), and an area downcoast of Discharge Point No. 001 (SD-007 and SD-008). Trawls shall be conducted using a Marinovich 7.62 m (25 ft) head rope otter trawl, using the guidance specified in the field manual developed for the Southern California Bight Regional Monitoring Surveys. Captured organisms shall be identified at all stations.

All fish and megabenthic invertebrates collected by trawls should be identified to species if possible. Community structure analysis shall consist of determining the total wet weight and total number of individuals per species, the total numerical abundance of all fish, species richness, species diversity (H'), and multivariate pattern analyses (e.g., ordination and classification analyses). The presence of any physical abnormalities or disease symptoms (e.g., fin erosion, external lesions, tumors) or parasites shall also be recorded. For invertebrates, community structure shall be summarized as the total number of individuals per species, the total numerical abundance of all invertebrates, species richness, and species diversity (H').

Chemical analyses of fish tissues shall be performed annually on target species collected at or near the trawl and rig fishing stations. The various stations are classified into zones for the purpose of collecting sufficient numbers of fish for tissue analyses. Trawl Zone 1 represents the nearfield zone, defined as the area within a 1-km radius of stations SD-010 and/or SD-012; Trawl Zone 2 is considered the northern farfield zone, defined as the area within a 1-km radius of stations SD-013 and/or SD-014; Trawl Zone 3 represents the LA-5 disposal site zone, and is defined as the area centered within 1-km radius of station SD-008; Trawl Zone 4 is considered the southern farfield zone, and is defined as the area centered within a 1-km radius of station SD-007. The two rig fishing stations also represent two distinct zones. Rig fishing zone 1 is the nearfield area centered within a 1-km radius of Station RF-001; rig fishing zone 2 is considered the farfield area centered within a 1-km radius of station RF-002.

Liver tissues shall be analyzed semiannually (January and July) from fish collected in each of the above four trawl zones. Each trawl station may be trawled up to a maximum of five times in order to acquire sufficient numbers of fish for composite samples within a zone; trawls subsequent to the initial community trawl discussed above (i.e., trawls 2-5/site) may occur anywhere within a defined zone. Three replicate composite samples shall be prepared from each trawl zone, with each composite consisting of tissues from as least three fish of the same species collected within a zone. These liver tissues shall be analyzed for the presence of lipids, PCB congeners, chlorinated pesticides, and the metals mercury, arsenic and selenium. The species targeted for analysis at the trawl sites shall be primarily flatfish, and include the longfin sanddab (*Citharichthys xanthostigma*) and the Pacific sanddab (*Citharichthys sordidus*). If sufficient numbers of these primary target species are not present in a zone, secondary candidate species such as other flatfish or rockfish may be collected as necessary.

Rig fishing shall be performed annually (October) to monitor the uptake of pollutants in fish species which are consumed by humans. These fish shall be representative of those caught by recreational and commercial fishery activities in the region. All fish shall be collected by hook and line or by setting baited lines or traps within the two zones described above. The species targeted for analysis at the rig fishing sites shall be primarily rock fish, and include the vermilion rockfish (*Sebastes miniatus*) and the copper rockfish (*Sebastes caurinum*). If sufficient numbers of these primary fish species are not present, other species (e.g., rockfish, scorpionfish) may be collected as necessary. Three replicate composite samples of the target species shall be obtained from each zone, with each composite consisting of a minimum of three individual fish. Muscle tissues shall be removed from the composites and chemically analyzed for the presence of lipids, PCB congeners, chlorinated pesticides, and the metal arsenic, cadmium, chromium, copper, lead, mercury, selenium, tin and zinc.

5. Kelp Bed Canopy Monitoring

Kelp bed monitoring is intended to assess the extent to which the discharge of waste may affect the aerial extent and health of coastal kelp beds. The Discharger shall participate with other ocean Dischargers in the San Diego Region in an annual regional kelp bed photographic survey. Kelp beds shall be monitored annually by means of vertical aerial infrared photography to determine the maximum aerial extent of the region's coastal kelp beds within the calendar year. Surveys shall be conducted as close as possible to the time when kelp bed canopies cover the greatest area. The entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary shall be photographed on the same day. The images produced by the surveys shall be presented in the form of a 1:24,000 scale photo-mosaic of the entire San Diego Region coastline. Onshore reference points, locations of all ocean outfalls and diffusers, and the 30-foot (MLLW and 60-foot (MLLW) depth contours shall be shown. The aerial extent of the various kelp beds photographed in each survey shall be compared to that noted in surveys of previous years. Any significant losses which persist for more than one year shall be investigated by divers to determine the probable reason for the loss.

B. Strategic Process Studies

Special studis are an integral part of the permit monitoring program. They differ from other elements of the monitoring program in that they are intended to be short-term and are designed to address specific research or management issues that are not addressed by the routine core monitoring elements

The scope of the special studies shall be determined by the Discharger in coordination with the Executive Officer and the USEPA. The Discharger may include input from whatever sources they deem appropriate. Each year, the Discharger shall submit proposals for strategic process studies to the Executive Officer and the USEPA by September 30, for the following year's monitoring effort (July through June). The following calendar year, detailed scopes of work for the proposals, including reporting schedules, shall, if requested by the Executive Officer, be presented by the Discharger at a spring Regional Water Board meeting. Upon approval by the Executive Officer and the USEPA, the Discharger shall implement the special study. Reporting requirements and deadlines for the results of the special project studies will be determined and set at the time of project approval. Strategic studies conducted during the period of this permit shall be at a level of effort equal to that under Order No. R9-2002-0025, unless the Executive Officer, USEPA, and the Discharger agree otherwise.

C. Regional Monitoring

The Discharger shall participate in regional monitoring activities coordinated by the Southern California Coastal Water Project (SCCWRP). The procedures for Executive

Officer and USEPA approval shall be the same as detailed above for the strategic process studies. The intent of regional monitoring activities is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the region. During these coordinated sampling efforts, the Discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The Discharger has participated in regional monitoring efforts in 1994, 1998, 2003, and 2008, and will participate in the regional monitoring effort planned for the timeframe around 2013. The level of effort will be provided to the Executive Officer and USEPA for approval. Proposed regional monitoring activities are defined by the Bight Steering Committee for the regional monitoring effort year.

The Discharger will be responsible for submitting the data collected during their portion of the regional monitoring program according to the prescribed schedule set by the Bight Steering Committee for that year's effort. Detailed analyses of these data will not be required separately by the Discharger, since they will participate in the analysis and write-up of the complete results from regional monitoring efforts. The final results will be published as part of the comprehensive monitoring effort for the Bight regional monitoring surveys.

It is anticipated that regional monitoring efforts will occur at five-year intervals.

D. Monitoring Location RS-001

1. The Discharger shall monitor return streams at RS-001 as follows:

Table E-8. Return Stream Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flowrate	MGD	Recorder/totalizer	Continuous	[1]
Total Suspended Solids	mg/L	24-hr Composite	1/Day	[1]
BOD_5@20°C	mg/L	24-hr Composite	1/Day	[1]

[1] As specified in 40 CFR 136.3.

IX. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

2. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

3. Reports of marine monitoring surveys conducted to meet receiving water monitoring requirements of this MRP shall include, as a minimum, the following information:

a. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

b. The Discharger shall report all instances of noncompliance not reported under Attachment D, Sections III, V, and VI, of Order No. R9-2009-0001, at the time the monitoring reports are submitted.

c. By July 1 of each year, the Discharger shall submit an annual report to the Regional Water Board and USEPA that contains tabular and graphical summaries of the effluent and receiving water monitoring data obtained during the previous year. The Discharger shall discuss the compliance record and corrective actions taken, or which may be needed, to bring the discharge into full compliance with the requirements of this permit. The report shall restate, for the record, the laboratories used by the Discharger to monitor compliance with this permit, and provide a summary of performance relative to the permit requirements. Lists of analytical methods used to monitor pollutants should include available CAS numbers and published MDLs/MLs for the analytical methods.

d. By April 1 of each year, the Discharger shall submit an annual report to the Regional Water Board; USEPA Region 9; State Water Board, Division of Water Quality, Regulations Unit; and the San Diego County Department of Health Services, Hazardous Materials Division, describing its pretreatment activities over the previous calendar year, as specified elsewhere in this Order.

e. By April 1 of each year, the Discharger shall submit an annual report to the Regional Water Board; USEPA; State Water Board, Division of Water Quality, Regulations Unit; and Arizona Department of Environmental Quality, describing its biosolids activities over the previous calendar year, as specified elsewhere in this Order.

f. Reports of marine monitoring surveys conducted to meet receiving water monitoring requirements of this MRP shall include, as a minimum, the following information:

i. A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.).

ii. A description of sampling stations, including differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.).

iii. A description of the sample collection and preservation procedures used in the survey.

iv. A description of the specific method used for laboratory analysis.

v. An in-depth discussion of the results of the survey. All tabulations and computations shall be explained.

The annual report for all receiving water monitoring is due by July 1 and shall include detailed descriptions of the statistical designs and statistical analyses of all collected data. Methods may include, but are not limited to, various multivariate analyses such as cluster analysis, ordination, and regression. The Discharger should also conduct additional analyses, as appropriate, to elucidate spatial and temporal trends in the data.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

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

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

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Start	Monitoring Period	SMR Due Date
Continuous	<Add Permit Effective Date>	All	Submit with monthly SMR
Hourly	<Add Permit Effective Date>	Hourly	Submit with monthly SMR
Daily	<Add Permit Effective Date>	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR

Weekly	**<Add Date of Sunday following Permit Effective Date or Permit Effective Date if on a Sunday>**	**Sunday through Saturday**	**Submit with monthly SMR**
Monthly	**<Add First Day of Calendar Month following Permit Effective Date or Permit Effective Date if on a Sunday or Permit Effective Date if First Day of the Month>**	**First day of calendar month through last day of calendar month**	**30 days from the end of the monitoring period**
Quarterly	**<Closest of January 1, April 1, July 1, or October 1 following (or on) Permit Effective Date>**	**January 1 through March 31** **April 1 through June 30** **July 1 through September 30** **October 1 through December 31**	**30 days from the end of the monitoring period**
Semiannually	**<Closest of January 1 or July 1 following (or on) Permit Effective Date>**	**January 1 through June 30** **July 1 through December 31**	**30 days from the end of the monitoring period**
Annually	**<January 1 following (or on) Permit Effective Date>**	**January 1 through December 31**	**30 days from the end of the monitoring period**

4. Reporting Protocols. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136. For each numeric effluent limitation or performance goal for a parameter identified in Table B of the Ocean Plan, the Discharger shall not use a ML greater than that specified in Appendix II of the Ocean Plan.

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

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

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

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

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

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

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

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

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

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

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

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

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions.

Identified violations must include a description of the requirement that was violated and a description of the violation.

c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

C. Discharge Monitoring Reports (DMRs)

1. As described in Section IX.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the State Water Board address listed below, and one copy of the DMR to the USEPA address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

U.S. EPA, Region 9
ATTN: WTR-7, NPDES/DMR
75 Hawthorne Street
San Francisco, CA 94105

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated will not be accepted unless they follow the exact same format of USEPA Form 3320-1.

D. Other Reports

1. The Discharger shall report the results of any acute and chronic toxicity testing, TRE/TIE, Antidegradation Analysis, Treatment Plan Capacity Study, Sludge Disposal Report, Pretreatment Report, and Collection System Report of Non-compliance, as required by Special Provisions – VI.C. of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

ATTACHMENT F – FACT SHEET

Table of Contents

List of Tables

ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	**9 000000275**
Discharger	**City of San Diego Metropolitan Wastewater Department**
Name of Facility	**E.W. Blom Point Loma Wastewater Treatment Plant**
Facility Address	**1902 Gatchell Road**
	San Diego, CA 92106
	San Diego County
Facility Contact, Title and Phone	**Jim Barrett Director of Public Utilities (619) 533-7555**
Authorized Person to Sign and Submit Reports	**Jim Barrett Director of Public Utilities (619) 533-7555**
Mailing Address	**600 B Street, Suite 400 San Diego, CA 92101-4514**
Billing Address	**9192 Topaz Way San Diego, CA 92123**
Type of Facility	**Publicly-Owned Treatment Works (POTW) (SIC Code 4592)**
Major or Minor Facility	**Major**
Threat to Water Quality	**1**
Complexity	**A**
Pretreatment Program	**Yes**
Reclamation Requirements	**NA**
Facility Permitted Flow	**240 Million Gallons per Day (MGD)**
Facility Design Flow	**240 MGD**
Facility Projected End-of-Permit Flow	**205 MGD**
Watershed	**Pacific Ocean**
Receiving Water	**Pacific Ocean**
Receiving Water Type	**Ocean Waters**

A. The City of San Diego Metropolitan Wastewater Department (hereinafter Discharger) is the owner and operator of E.W. Blom Point Loma Wastewater Treatment Plant (hereinafter Point Loma WTP or Facility), a publicly-owned treatment works (POTW).

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

B. The Facility discharges wastewater to the Pacific Ocean, a water of the United States, and is currently regulated by Order No. R9-2002-0025 which was adopted on April 10, 2002. Following adoption by the Regional Water Quality Control Board (hereinafter, Regional Water Board), this order was subsequently appealed to the State Water Resources Control Board (hereinafter, State Water Board) and amended by State Water Board Order No. 2002-0013 on August 15, 2002. On September 13, 2002, the 301(h)-modified permit (NPDES No. CA0107409) was issued by the United States Environmental Protection Agency (USEPA). On October 10, 2002, USEPA issued a minor modification to the federal permit correcting typographical errors. The federal NPDES permit was appealed by several petitioners to the Environmental Appeals Board, on October 16, 2002. Uncontested federal permit provisions became effective on June 16, 2003. During this time period, Order No. R9-2002-0025 was amended by the Regional Water Board and USEPA to modify the monitoring and reporting program (June 11, 2003). On March 29, 2004, the Environmental Appeals Board dismissed the federal permit appeals in accordance with, and pursuant to, the joint stipulation of the petitioners and USEPA. The federal permit expired on June 15, 2008. On August 13, 2008, the Regional Water Board adopted effluent limitations and conditions providing for chlorination of the PLOO discharge.

The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge (ROWD) and submitted an application for renewal of its WDRs and NPDES permit on December 14, 2007. Supplemental information was requested on March 3, 2008 and received on June 6, 2008. A site visit was conducted on March 17, 2008, to observe operations and collect additional data to develop permit limitations and conditions.

D. On December 10, 2007, the Discharger submitted an application for renewal of their 301(h)-modified NPDES permit for the Point Loma WTP to USEPA. In this application, the Discharger requested a renewal of their variance (sometimes informally called a “waiver” or “modification”) under CWA Section 301(h), 33 U.S.C. Section 1311(h), and the Ocean Pollution Reduction Act of 1994, 33 U.S.C. Section 1311(j)(5), from federal secondary treatment standards contained in CWA Section 301(b)(1)(B), U.S.C. Section 1311(b)(1)(B). The Discharger has proposed alternative effluent limitations for total suspended solids (TSS) and biochemical oxygen demand (BOD_5), described elsewhere in this Fact Sheet. The 2007 301(h) application is based on an improved discharge, as defined at 40 CFR 125.58(i).

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

The E.W. Blom Point Loma Wastewater Treatment Plant is a terminal treatment facility of the San Diego Metropolitan Sewage System (Metro System). The Metro System collects and treats wastewater from the City of San Diego and 15 other cities and agencies within a 450 square mile service area throughout San Diego County. Metro System facilities are owned by the City of San Diego and are managed and operated by the City's Metropolitan Wastewater Department (MWWD). Approximately 70 percent of the total Metro System flows are from the City of San Diego, with the remaining flow from the 15 contributing Metro System participating agencies, listed in Table F-2. The Metro Systems participating agencies are summarized below:

Table F-2. Metro System Participating Agencies

Municipalities	Water/Wastewater Districts	Sanitation/Maintenance Districts
City of Chula Vista City of Coronado City of Del Mar City of El Cajon City of Imperial Beach City of La Mesa City of National City City of Poway	Otay Water District Padre Dam Municipal Water District	Lakeside/Alpine Sanitation District Lemon Grove Sanitation District Spring Valley Sanitation District East Otay Sewer Maintenance District Winter Gardens Sewer Maintenance District

Wastewater collection systems that discharge to the Metro System are owned and operated by respective participating agencies.

The City of San Diego owns and operates Metro System collection, treatment, and effluent disposal facilities.

Primary Metro System facilities include:

1. North City Water Reclamation Plant (North City WRP)

The North City WRP has a design capacity of 30 million gallons per day (MGD). North City WRP is an advanced wastewater treatment facility capable of producing recycled water that complies with the requirements of Title 22, Division 4 of the California Code of Regulations for unrestricted body contact (Title 22 Regulations). Excess recycled water, secondary treated effluent, and plant waste streams from North City WRP are returned to the sewer for transport to Point Loma WTP for additional treatment. Waste solids removed during treatment at North City WRP are directed to the Metro Biosolids Center for treatment and use or disposal.

2. Metro Biosolids Center (MBC)

MBC is located on Marine Corps Air Station Miramar. MBC provides dewatering of sludge from the Point Loma WTP and thickening, anaerobic digestion, and dewatering of sludge from the North City WRP. Dewatered solids are beneficially used as an alternate daily cover at a landfill or as a soil amendment.

3. South Bay Water Reclamation Plant (South Bay WRP)

South Bay WRP has a tertiary design capacity of 15 MGD and a hydraulic capacity of 18 MGD. South Bay WRP is an advanced wastewater treatment facility producing recycled water that complies with Title 22 Regulations for customers within the South Bay region. Excess recycled water and ultraviolet disinfected secondary treated effluent is directed to the South Bay Ocean Outfall. Waste solids are directed to the Point Loma WTP through the South Metro Interceptor and Pump Station Nos. 1 and 2, for treatment and removal.

4. South Bay Ocean Outfall (SBOO)

The SBOO is jointly owned by the International Boundary and Water Commission (IBWC) and the City of San Diego. The outfall discharges wastewater from both the South Bay WRP and the IBWC International Wastewater Treatment Plant. The outfall has an average daily flow capacity of 174 MGD and a peak flow of 333 MGD. The SBOO discharges wastewater approximately 3.5 miles off the coast of the International Boarder at a depth of approximately 95 feet.

5. Pump Station No. 1

Pump Station No. 1 conveys wastewater from the southern portion of the Metro System through the South Metro Interceptor to Pump Station No. 2. Pump Station No. 1 has a pumping capacity of approximately 160 MGD.

6. Pump Station No. 2

Pump Station No. 2 receives wastewater from the north, south, and central regions of the Metro System service area and conveys all influent to the Point Loma WTP. Pump Station No. 2 also provides initial screening and chemical addition (ferric chloride for odor control and to assist in coagulation/sedimentation at the Point Loma WTP). Pump Station No. 2 has a pumping capacity of approximately 432 MGD.

7. Point Loma WTP

The Point Loma WTP is a chemically-assisted primary treatment plant and is the terminal treatment plant discharging to the Point Loma Ocean Outfall (PLOO). The Facility has rated capacities of 240 MGD average annual daily flow and 432 peak wet weather flow. Treatment processes include: mechanical self-cleaning climber screens; chemical addition (ferric chloride) and flow measurement at Parshall flumes; aerated grit removal, including grit tanks, separators, and washers; chemical addition (an anionic synthetic polymer and hydrogen peroxide) to enhance settling of solids and assist in stabilization and odor control; sedimentation basins with sludge and scum removal facilities; and prototype effluent disinfection facilities providing chlorination in the effluent channel.

On November 13, 2007, the Discharger requested the ability to chlorinate to ensure compliance with all applicable receiving water objectives for bacteria. Chlorination using sodium hypochlorite was approved by the Regional Water Board on August 13, 2008 (Addendum No. 2 to Order No. R9-2002-0025).

The treatment train at the Facility consists of five influent screens, ferric chloride injection, six aerated grit chambers, anionic polymer and hydrogen peroxide injection, and 12 primary sedimentation basins, and sodium hypochlorite injection for chlorination.

On-site solids treatment at the Point Loma WTP consists of anaerobic sludge digestion. Dewatered solids are beneficially used as an alternate daily cover at a landfill or as a soil amendment. Digested sludge is transported via pipeline to the MBC for dewatering and disposal. Screenings, grit, and scum are trucked to a landfill for disposal.

Chlorinated advanced primary treated effluent is discharged through the PLOO to the Pacific Ocean, approximately 4.5 miles offshore. Although this is beyond the limit of State-regulated ocean waters, potential plume migration within this limit warrants joint regulation of the effluent. USEPA has primary regulatory responsibility for the discharge. However, in 1984, a Memorandum of Understanding was signed between USEPA and the State of California to jointly administer discharges that are granted modifications from secondary treatment standards. Under California's Porter-Cologne Water Quality Control Act, the Regional Water Board issues waste discharge requirements which serve as an NPDES permit. On December 5, 2008, the USEPA and Regional Water Board jointly proposed issuance of a draft 301(h)-modified permit incorporating both federal NPDES requirements and State Waste Discharge Requirements.

In addition to domestic sewage and industrial discharges, the Facility accepts flow and pollutants from low-flow urban runoff diversion systems and "first flush" industrial stormwater diversion systems that are routed to the sanitary sewer collection system.

B. Discharge Points and Receiving Waters

The PLOO has an average dry weather design flow of 240 MGD and a peak wet weather flow of 432 MGD. The PLOO discharges wastewater from Point Loma WTP approximately 4.5 miles off the coast of Point Loma (32° 39' 55" North; 117° 19' 25" West) at a discharge depth of approximately 310 feet (at mean lower low water - MLLW). The PLOO is 23,472 feet long and includes a wye (Y-shaped) diffuser with two 2,496 foot long diffuser legs. The diffuser has 416 discharge ports (208 on each leg).

Order No. R9-2002-0025 carried over an initial dilution value for the PLOO of 204 from previous orders for the facility. The initial dilution value of 204 was established based on the results of a modified version of the RSB model, submitted with the Discharger's 1995 ROWD and the Discharger's 1995, 2001, and 2007 301(h) applications to USEPA. This initial dilution value was predicated based on the 1995 projected end-of-permit effluent flow of 205 MGD from Point Loma WTP.

The Regional Water Board, with assistance from the State Water Board, has established a minimum initial dilution factor for this permitting effort of 204:1, based on the projected end-of-permit flow of 205 MGD through the PLOO, as discussed in Attachment H to the permit. This minimum initial dilution value is used by the Regional Water Board to establish water quality-based effluent limitations (WQBELs) and performance goals for Table B constituents in the Ocean Plan.

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

Effluent limitations contained in Order No. R9-2002-0025 for discharges from Discharge Point No. 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R9-2002-0025 are as follows:

Table F-3a. Historic Effluent Limitations and Monitoring Data (BOD_5 and TSS) Based on CWA Sections 301(h) and (j)(5)

Effluent Constituent	Units	Effluent Limitations		Monitoring Data (from January '01 to December '07)		
		Annual Average	Monthly Average	Lowest Mean Annual Percent Removal	Lowest Mean Monthly Percent Removal	Highest Monthly Average
TSS	% removal [1]	--	≥80	--	82	--
	mg/l	--	75 [4]	--	--	51
	metric tons/year	15,000 [2]	--	--	--	--
		13,599 [3]	--	--	--	--
BOD_5	% removal [1]	≥58	--	58	--	--

1 To be calculated on a system-wide basis, as provided in Addendum No. 1 to Order No. R9-2002-0025.
2 To be achieved on the permit effective date and through December 31, 2005. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico as a result of upset or shutdown and treated at and discharged from Point Loma WTP. Based on the 1995 and 2001 permit applications, the Discharger's 1997 projected annual average effluent flow rate of 195 MGD, and 80 percent removal of TSS required by law.
3 To be achieved on January 1, 2006. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico as a result of upset or shutdown and treated at and discharged from Point Loma WTP. Based on the 1995 and 2001 permit applications, the Discharger's 1997 projected annual average effluent flow rate of 195 MGD, and 80 percent removal of TSS required by law.
4 Based on average monthly performance data (1990 through 1994) for the Point Loma WTP provided by the Discharger for the 1995 permit application.

Table F-3b. Historic Effluent Limitations and Monitoring Data (Ocean Plan Parameters – Table A)

Effluent Constituent	Units	Effluent Limitations			Monitoring Data (From January '02 to December '07		
		Monthly Average (30-day)	Weekly Average (7-day)	Instantaneous Maximum	Highest Monthly Average	Highest Weekly Average	Highest Instantaneous Maximum
Oil and Grease	mg/L	25	40	75	12.8064516	15.3571429	24.4
	lbs/day[1]	34,000	68,000	130,000	--	--	--
Settleable Solids	ml/L	1.0	1.5	3.0	0.81387097	1.77142857(6/6/04-6/12/04)	7.5(6/8/04)
Turbidity	NTU	75	100	225	53.7419355	62.4285714	125
pH	pH units	--	--	6.0 – 9.0	--	--	7.87

[1] Mass-effluent limitations in the amended 2002 Order were calculated using the projected end-of-permit effluent flow for the 1995 301(h) application of 205 MGD.

Table F-3c. Historic Effluent Limitations and Monitoring Data (Ocean Plan Parameters – Table B, For the Protection of Aquatic Life)

Parameter	Units[1]	Effluent Limitation			Monitoring Data (From January '02 to December '07)		
		6-Month Median	Daily Maximum	Instantaneous Maximum	Highest 6-Month Median	Highest Daily Maximum	Highest Instantaneous Maximum
Arsenic	µg/L	1,000	5,900	16,000	1.62	2.74	2.74
Cadmium	µg/L	200	800	2,100	0.5	4.45	4.45
Chromium (Hexavalent)[2]	µg/L	400	2,000	4,100	2.5	23.4	23.4
Copper	µg/L	200	2,100	5,700	76.4	325	325
Lead	µg/L	400	2,000	4,100	9	31.5	31.5
Mercury	µg/L	8.1	33	80	0.25	0.702	0.702
Nickel	µg/L	1,000	4,100	10,000	10.3	22.3	22.3
Selenium	µg/L	3,100	12,000	30,800	1.25	1.66	1.66
Silver	µg/L	100	540	1,000	3.3	19.7	19.7
Zinc	µg/L	2,500	15,000	39,400	28	81.3	81.3
Cyanide	µg/L	200	800	2,100	4	10	10
Total Chlorine Residual	µg/L	400	2,000	12,000	<0.03	<0.03	<0.03
Ammonia (as N)	µg/L	123,000	492,000	1,230,000	31,900	36,700	36,700
Acute Toxicity	TUa	--	6.5	--	--	5.3	--
Chronic Toxicity	TUc	--	205	--	--	>667	--
Phenolic Compounds (non-chlorinated)	µg/L	6,200	24,600	61,500	14.4	25.6	25.6
Chlorinated Phenolics	µg/L	200	800	2,100	<12.67	1.85	1.85
Endosulfan	µg/L	2	3.7	5.5	<0.03	<0.03	<0.03
Endrin	µg/L	0.4	0.8	1	<0.05	<0.05	<0.05
HCH	µg/L	0.8	2	2.5	0.0135	0.175	0.175
Radioactivity	pci/l	[3]			--	--	[4]

[1] Concentration-based limitations in the amended 2002 Order were calculated using a minimum critical initial dilution of 204:1, based on the projected end-of-permit effluent flow for the 1995 301(h) application of 205 MGD.
[2] Dischargers may at their option meet these limitations as total chromium limitations.
[3] Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.
[4] Highest value of Gross Beta Radiation was 38.3 pci/l; Highest value of Gross Alpha Radiation was 3.54 pci/l.

Table F-3d. Historic Effluent Limitations and Monitoring Data (Ocean Plan Parameters – Table B, For the Protection of Human Health)

Parameter	Units[1]	Effluent Limitation	Monitoring Data (From January '02 to December '07)	
		Average Monthly	Highest Average Monthly Discharge	Highest Daily Discharge
Acrolein	µg/L	45,000	<11.4	<11.4
Antimony	µg/L	250,000	75.50	83.50
Bis(2-chloroethoxy)methane	µg/L	900	<1.57	<1.57
Bis(2-chloroisopropyl)ether	µg/L	250,000	<8.95	<8.95
Chlorobenzene	µg/L	120,000	<1	<1
Chromium (III)	µg/L	39,000,000	11.145	23.4
Di-n-butyl phthalate	µg/L	720,000	<6.49	<6.49
Dichlorobenzenes	µg/L	1,000,000	1.23	1.23
Diethyl phthalate	µg/L	6,800,000	11.2	11.2

Parameter	Units[1]	Effluent Limitation	Monitoring Data (From January '02 to December '07)	
		Average Monthly	Highest Average Monthly Discharge	Highest Daily Discharge
Dimethyl Phthalate	µg/L	170,000,000	<3.26	<3.26
4,6-Dinitro-2-methylphenol	µg/L	45,000	<4.29	<4.29
2,4-Dinitrophenol	µg/L	820	<6.07	<6.07
Ethylbenzene	µg/L	840,000	<1	<1
Fluoranthene	µg/L	3,100	<6.9	<6.9
Hexachlorocyclopentadiene	µg/L	12,000	ND[2]	ND[2]
Nitrobenzene	µg/L	1,000	<1.52	<1.52
Thallium	µg/L	400	< 1.8	<40
Toluene	µg/L	17,000,000	8.05	8.05
Tributyltin	µg/L	0.29	<2	<2
1,1,1-Trichloroethane	µg/L	110,000,000	<1	<1
Acrylonitrile	µg/L	21	<13.8	<13.8
Aldrin	µg/L	0.0045	<60	<60
Benzene	µg/L	1,200	<1	<1
Benzidine	µg/L	0.014	<1.52	<1.52
Beryllium	µg/L	6.8	0.3175	0.685
Bis(2-chloroethyl)ether	µg/L	9.2	<2.62	<2.62
Bis(2-ethylhexyl)phthalate	µg/L	720	49.8	49.8
Carbon tetrachloride	µg/L	180	<1	<1
Chlordane	µg/L	0.0047	0.092 (7/04)	0.092 (7/04)
Chlorodibromomethane	µg/L	1,800	2.87	2.87
Chloroform	µg/L	27,000	11.2	11.2
DDT	µg/L	0.035	<0.14	<0.14
1,4-Dichlorobenzene	µg/L	3,700	3.75	3.75
3,3'-Dichlorobenzidine	µg/L	1.7	<2.44	<2.44
1,2-Dichloroethane	µg/L	5,700	<1	<1
1,1-Dichloroethylene	µg/L	200	0.5	0.5
Dichlorobromomethane	µg/L	1,300	3.66	3.66
Dichloromethane	µg/L	92,000	6.32	6.32
1,3-Dichloropropene	µg/L	1,800	<2	<2
Dieldrin	µg/L	0.0082	<0.05	<0.05
2,4-Dinitrotoluene	µg/L	530	<1.49	<1.49
1,2-Diphenylhydrazine	µg/L	33	<2.49	<2.49
Halomethanes	µg/L	27,000	<3	<3
Heptachlor	µg/L	0.01	0.021333 (7/04)	0.044 (7/04)
Heptachlor Epoxide	µg/L	0.004	<0.03	<0.03
Hexachlorobenzene	µg/L	0.043	<4.8	<4.8
Hexachlorobutadiene	µg/L	2,900	<2.87	<2.87
Hexachloroethane	µg/L	510	<3.55	<3.55
Isophorone	µg/L	150,000	<1.93	<1.93
N-nitrosodimethylamine	µg/L	1,500	<2.01	<2.01
N-nitrosodi-N-propylamine	µg/L	78	<1.63	<1.63
N-nitrosodiphenylamine	µg/L	510	<2.96	<2.96
PAHs	µg/L	1.8	<72.48	<72.48
PCBs	µg/L	0.0039	<4	<4
TCDD Equivalents	µg/L	0.00000080	ND	ND
1,1,2,2-Tetrachloroethane	µg/L	470	<1	<1
Tetrachloroethylene	µg/L	410	3.4	3.4
Toxaphene	µg/L	0.43	<4	<4
Trichloroethylene	µg/L	5,500	<1	<1
1,1,2-Trichloroethane	µg/L	1,900	1.13	1.13

Parameter	Units[1]	Effluent Limitation	Monitoring Data (From January '02 to December '07)	
		Average Monthly	Highest Average Monthly Discharge	Highest Daily Discharge
2,4,6-Trichlorophenol	µg/L	59	1.11875	1.85
Vinyl Chloride	µg/L	7,400	<1	<1

[1] Concentration-based limitations in the amended 2002 Order were calculated using a minimum critical initial dilution of 204:1, based on the projected end-of-permit effluent flow for the 1995 301(h) application of 205 MGD.
[2] All non-detect, no MDL provided.

D. Compliance Summary

As summarized in Table F-3c, an exceedance of the chronic toxicity effluent limitation of 205 TUc was reported by the Facility on May 4, 2003 with a final effluent value of >667 TUc.

No significant compliance issues were identified during the most recent compliance evaluation inspection conducted on March 17, 2008.

E. Planned Changes

CWA Section 301(h) provides for variances from federal secondary treatment standards for POTWs discharging to marine waters, including waters beyond the outer limit of territorial seas. Among other conditions, the discharge must allow for attainment or maintenance of water quality which allows for recreational activities in and on the water beyond the zone of initial dilution, and meet State water quality standards and federal criteria established under CWA Section 304(a)(1) at the time the modification becomes effective. CWA Sections 301(h)(2) and (9); 40 CFR 125.62(d); 44 Fed. Reg. 34798-99, June 15, 1979; and 47 Fed. Reg. 53671, November 26, 1982.

For marine recreational waters beyond the outer limit of territorial seas (waters beyond 3 nautical miles), the water use is defined by the CWA Section 101(a)(2) interim goal to provide water quality for recreation in and on the water, wherever attainable. USEPA describes the "primary contact recreation" use as protective when the potential for ingestion of, or immersion in, water is likely. Activities usually include swimming, water-skiing, skin-diving, surfing, and other activities likely to result in immersion (*Water Quality Standards Handbook*, EPA-823-B-94-005a, 1994, p. 2-2.). USEPA has developed 304(a)(1) ambient water quality criteria for bacteria which are recommended to protect people from gastrointestinal illness for primary contact recreation, or similar full body contact activities, in marine recreational waters (*Ambient Water Quality Criteria for Bacteria—1986*, EPA 440/5-84-002, 1986, p. 16). In the vicinity of the PLOO, the Discharger has documented no federally-defined primary contact recreational activities occurring in waters beyond three nautical miles (see Volume V, Appendix G, of the 2007 301(h) application).

The State Water Board has established bacteriological standards in ocean waters of the State used for water contact recreation. Ocean waters are the territorial marine waters of the State as defined by California law (Ocean Plan, p. 26). The outer limit of territorial seas generally extends offshore to 3 nautical miles. The Ocean Plan (p. 3) specifies that “water contact recreation” is a beneficial use of ocean waters of the State that shall be protected. “Water Contact Recreation” or “REC-1” is a beneficial use of the State and is defined to include uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible; these uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs (San Diego Basin Plan, pp. 2-4). “REC-1” is designated as an existing beneficial use of coastal waters named the Pacific Ocean (San Diego Basin Plan, pp. 2-8, 2-12, and 2-52).

CWA Sections 303(i) and 512(21), together require the adoption of criteria for all coastal waters designated by States for use for swimming, bathing, surfing, or similar water contact activities, even if, as a factual matter, the waters designated for swimming are not frequently or typically used for swimming (69 Fed. Reg. 67219-20, 67222, November 16, 2004). Consistent with this requirement, on November 16, 2004, USEPA promulgated recreational water quality criteria for coastal waters in cases where States had failed to do so; these criteria apply where States have designated coastal waters for water contact recreation, but do not have in place USEPA-approved bacteria criteria that are as protective as USEPA’s 1986 recommended 304(a) criteria for bacteria (69 Fed. Reg. 67218, November 16, 2004). This promulgation applies the criteria at 40 CFR 131.41(c)(2) to waters designated marine coastal recreational waters in California, excluding Regional Water Board 4 (69 Fed. Reg. 67243, November 16, 2004). In 2005, the State Water Board adopted revised bacteria criteria for ocean waters of the State. Effective February 14, 2006, the revised Ocean Plan specifies within the zone bounded by the shoreline and 1,000 feet from the shoreline or the 30-foot depth contour (whichever is further) and in areas outside this zone used for water contact sports as determined by the Regional Water Board (i.e., waters designated as REC-1), including kelp beds, the following bacterial objectives shall be maintained throughout the water column (Ocean Plan, p. 4). The initial dilution zone for wastewater outfalls is excluded (Ocean Plan, p. 5).

Table F-4. Bacterial Water Quality Objectives in the Ocean Plan for State Waters Designated REC-1

Indicator	30-day Geometric Mean (per 100 ml)	Single Sample Maximum (per 100 ml)
Total Coliform	1,000	10,000
Fecal Coliform	200	400
Total Coliform when Fecal Coliform:Total Coliform ratio > 0.1	--	1,000
Enterococcus	35	104

Volume V, Appendix G, of the 2007 301(h) application describes water contact recreational activities occurring in territorial waters off Point Loma and at shoreline, kelp bed, and offshore water quality monitoring stations. In Appendix G, Table 19 shows were water contact recreation takes place off Point Loma, based on the Discharger’s record of visual observations during monitoring events and recreational use assessment.

The 4.5 mile long PLOO discharges beyond the 3 nautical mile outer limit of territorial seas. Table C-5 in Volume IV, Appendix C, of the 2007 301(h) application summarizes bacteriological data from offshore stations within State waters that are not located in the Point Loma kelp bed. As summarized, these offshore stations (at all water depths) achieve compliance with recreational water contact standards from 92 to 98 percent of the time, with exceedances typically limited to samples collected from water depths below 40 meters (130 feet).

Both the Discharger and USEPA compared maximum receiving water bacteriological concentrations from all offshore stations (at depth) with Ocean Plan water quality objectives to determine the degree of reduction in indicator organisms discharged through the PLOO that was needed to achieve 100 percent compliance with Ocean Plan water contact standards at all locations and all depths within 3 nautical miles. Based on an evaluation of this data, summarized in Table C-6 in Volume IV, Appendix C, of the 2007 301(h) application, the Discharger determined that a 2.1-logarithm (approximately 99 percent) reduction of total coliform indicator organisms would ensure that the PLOO discharge complies with bacteriological water quality standards at all locations and all depths within this area. Initial bench-scale laboratory tests conducted by the Discharger show that a 2.1-log reduction of indicator organisms in the effluent can be achieved by a sodium hypochlorite dose rate of 7 mg/1. Other studies show that this dose rate will be consumed in the PLOO and will not lead to non-compliance with other Ocean Plan Table B water quality objectives. Facilities currently exist at the Point Loma WTP site for storing and handling sodium hypochlorite.

On November 13, 2007, the Discharger submitted a request to the Regional Water Board to initiate operation of prototype effluent disinfection facilities to achieve compliance with bacteriological water quality standards in State waters. On August 13, 2008, the Regional Water Board approved modifications associated with operation of the Discharger’s proposed prototype effluent disinfection facilities at Point Loma WTP. The Discharger’s 2007 301(h) application is based on an improved discharge, as defined at 40 CFR 125.58(i), and incorporates effluent disinfection to achieve these standards prior to permit reissuance.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to Section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with Section 13370). It shall serve as a 301(h)-modified NPDES permit for point source discharges from this facility to surface waters, which is jointly issued by the Regional Water Board and USEPA. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with Section 13260).

B. California Environmental Quality Act (CEQA)

Under Water Code Section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code Sections 21100 through 21177.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Board adopted a Water Quality Control Plan for the San Diego Basin (hereinafter Basin Plan) on September 8, 1994 that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean. The Basin Plan was subsequently approved by the State Water Board on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the Regional Water Board and approved by the State Water Board. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses applicable to the Pacific Ocean are as follows:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	Industrial service supply; navigation; contact water recreation; non-contact water recreation; commercial and sport fishing; preservation of biological habitats of special significance; wildlife habitat; rare, threatened, or endangered species; marine habitat; aquaculture; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting.

Requirements of this Order implement the Basin Plan.

2. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

Table F-6. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses

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

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

3. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR § 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

4. **Antidegradation Policy.** 40 CFR 131.12 requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of Section 131.12 and State Water Board Resolution No. 68-16.

5. **Anti-Backsliding Requirements.** CWA Sections 402(o) and 303(d)(4) and 40 CFR 122.44(l) prohibit renewal, reissuance, or modification of an existing NPDES permit that contains effluent limitations, permit conditions, or standards that are less stringent than those established in the previous permit, with limited exceptions for relaxing some requirements.

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

On June 28, 2007, the USEPA approved the list of impaired water bodies, prepared by the State Water Board pursuant to Section 303 (d) of the CWA, which are not expected to meet applicable water quality standards after implementation of technology-based effluent limitations for point sources. The 303 (d) list includes Sections of the Pacific Ocean shoreline inside the San Diego Region as impaired for bacteria indicators. However, the receiving waters in the immediate vicinity of the Facilities' discharge point are not included on the current 303 (d) list.

This permit implements receiving water objectives for bacterial indicators.

E. Other Plans, Polices and Regulations

1. 301(h) Waiver and Primary Treatment Requirements.

The Discharger has submitted an application for renewal of their 301(h)-modified NPDES permit for the Point Loma WTP. The Discharger requested a renewal of their variance (informally called a "waiver" or "modification") under CWA Section 301(h) and the Ocean Pollution Reduction Act of 1994, from federal secondary treatment standards contained in CWA Section 301(b)(1)(B). The Discharger has proposed alternative effluent limitations for TSS and BOD_5, described below. The 2007 301(h) application is based on an improved discharge, as defined at 40 CFR 125.58(i). The Discharger has proposed effluent disinfection (chlorination) to achieve applicable water quality standards for bacteria in State waters, prior to permit reissuance.

The administrative processing for a CWA Section 301(h) variance by USEPA generally consists of the following actions:

- Filing of a timely application by the discharger;
- Initial screening of the application by the State and USEPA;
- USEPA preparation of a Tentative Decision Document (TDD) which involves comparison of the application with criteria set forth in applicable statutes and regulations;
- Announcement of the tentative decision for the 301(h) variance by the USEPA Regional Administrator;
- Public notice of a draft 301(h)-modified permit incorporating the Regional Administrator's tentative decision and the TDD;
- Public hearings to address public interest;
- State concurrence in the granting of a 301(h) variance through State and USEPA joint issuance of a 301(h)-modified NPDES permit, or denial by the State and/or the Regional Administrator;
- Processing of appeals in accordance with 40 CFR 124.

The Discharger has proposed the following alternative effluent limitations for TSS and BOD_5. The Discharger's percent removal limitations for TSS and BOD_5 are computed on a "system-wide" basis, whereby the Discharger receives credit for removal achieved as part of water reclamation operations in the Metro System service area which ultimately connect to Point Loma WTP and discharge through the PLOO.

Table F-7. Effluent Limitations Based on CWA Sections 301(h) and (j)(5)

Effluent Constituent	Units	Annual Average	Monthly Average
TSS	% removal[1]	---	$\geq$80
	mg/l	---	75[4]

Effluent Constituent	Units	Annual Average	Monthly Average
	metric tons/year	15,000[2]	---
		13,598[3]	---
BOD5	% removal[1]	$\geq$58	---

[1] To be calculated on a system-wide basis, as provided in Addendum No. 1 to Order No. R9-2002-0025.
[2] To be achieved on permit effective date through December 31, 2013. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[3] To be achieved on January 1, 2014. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[4] Based on average monthly performance data (1990 through 1994) for the Point Loma WTP provided by the Discharger for the 1995 301(h) application.

A POTW applying for a 301(h) variance must demonstrate satisfactorily to USEPA that the modified discharge will meet the following CWA Section 301(h) requirements:

- The modified discharge will comply with all applicable water quality standards and the State has determined that the modified discharge will comply with State law;
- The modified discharge, alone or in combination with other sources, will not interfere with the attainment or maintenance of water quality that assures the protection of public water supplies; assures the protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife; and allows for recreational activities;
- A monitoring program has been established by the applicant to monitor the impact of the modified discharge, including biological, water quality, and effluent monitoring;
- The modified discharge will not result in additional requirements on other point and nonpoint sources of pollutants and the State had determined that the modified discharge will not result in any such additional requirements;
- An applicant serving a population of 50,000 or more that receives toxic pollutants from industrial sources must demonstrate they have complied with urban area pretreatment requirements at the time the permit is approved;
- An applicant must make a demonstration that pretreatment requirements for industrial sources introducing wastes into the treatment works will be enforced;
- An applicant must demonstrate that a schedule of activities has been established to minimize the introduction of toxic substances from nonindustrial sources onto the treatment works, including the development and implementation of programs for public education and nonindustrial source control;
- An applicant must demonstrate that the modified discharge will not result in new or substantially increased discharges of the waived pollutants above the discharge specified in the 301(h)-modified permit. Projections of effluent volumes and mass emission rates for pollutants to which the modification applies must be provided in 5-year increments for the design life of the facility;

- The modified discharge must receive at least primary or equivalent treatment and must meet CWA Section 304(a)(1) criteria, in accordance with 40 CFR 125.62(a). Variances are prohibited for discharges into waters that contain significant amounts of previously discharged effluent from the treatment works, or into saline estuarine waters that do not support a balanced indigenous population, do not allow recreation, or which violate water quality standards or criteria beyond the zone of initial dilution.

Under 40 CFR 125.59(b) no 301(h)-modified permit may be issued for:

- Discharges that do not comply with 40 CFR Parts 122 and 125, Subpart G;
- Discharges of sewage sludge;
- Discharges that would not be in compliance with applicable provisions of State, local, or other federal laws and Executive Orders; or
- Discharges that enter the New York Bight Apex.

In addition, the Discharger must meet the following requirements under the Ocean Pollution Reduction Act of 1994, CWA Section 301(j)(5):

- 80 percent removal of TSS based on a system-wide monthly average;
- 58 percent removal of BOD_5 based on a system-wide annual average;
- 45 MGD of water reclamation by the year 2010; and
- Reduction of TSS discharged into the ocean during the period of the permit modification.

During the term of the 1995 permit, the Discharger implemented a reclamation program with a system capacity of 45 MGD of reclaimed water, thereby meeting the requirement for reclaimed water capacity of 45 MGD in CWA Section 301(j)(5). On a system-wide basis, the Discharger will be able to remove not less than 80 percent of TSS (on a monthly average) and not less than 58 percent of BOD_5 (on an annual average) in the discharge to which the 2007 301(h) application applies. The Discharger will be able to decrease suspended solids mass emissions during the permit term. Reductions in TSS loadings to the marine environment during the term of the modification are shown in Figure II.A-1 of Volume III of the 2007 301(h) application.

USEPA has drafted a 301(h) Tentative Decision Document (TDD) evaluating the Discharger's proposed improved discharge and effluent limitations for TSS and BOD_5, the projected annual average end-of-permit effluent flow rate of 202 MGD (annual average daily flow), and 2002 through 2007 effluent concentrations for TSS and BOD_5, as provided in the updated 2007 301(h) application. The 2008 TDD concludes that the Discharger's 301(h) application satisfies CWA Sections 301(h) and 301(j)(5). Based on this information, it is the Regional Administrator's tentative decision to grant the Discharger's variance request for TSS and BOD_5, in accordance with the terms, conditions, and limitations of the TDD. In accordance with this decision and the 1984 301(h) Memorandum of

Understanding between the State and USEPA, the Regional Water Board and USEPA have jointly proposed issuance of a draft 301(h)-modified permit incorporating both federal NPDES requirements and State Waste Discharge Requirements. The final permit will be issued without prejudice to the rights of any party to address the legal issue of the applicability of Section 1311(j)(5) of the Act to the Discharger's future NPDES permits.

The Discharger's permit renewal of the variance from federal secondary treatment standards, pursuant to CWA Sections 301(h) and (j)(5), is contingent upon:

- Determination by the California Coastal Commission that the proposed discharge is consistent with the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 *et seq.*);
- Determination by the U.S. Fish and Wildlife Service and the NOAA National Marine Fisheries Service that the proposed discharge is consistent with the federal Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*);
- Determination by the NOAA National Marine Fisheries Service that the proposed discharge is consistent with the Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 U.S.C. 1801, *et seq.*);
- Determination by the Regional Water Board that the discharge will not result in additional treatment pollution control, or other requirement, on any other point or nonpoint sources (40 CFR 125.64);
- The Regional Water Board's certification/concurrence that the discharge will comply with water quality standards for the pollutants which the 301(h) variance is requested (40 CFR 125.61) (i.e., TSS and BOD_5). The joint issuance of a NPDES permit which incorporates both the 301(h) variance and State waste discharge requirements will serve as the State's concurrence; and
- The USEPA Regional Administrator's final decision regarding the Discharger's CWA Section 301(h) variance request.

2. **Storm Water.** Sewage treatment works with a design flow of 1.0 MGD or greater are required to comply with Water Quality Order No. 97-03-DWQ (NPDES General Permit No. CAS000001), WDRs for Dischargers of Storm Water Associated with Industrial Activity, Excluding Construction Activities. The Discharger shall file a Notice of Intent within 60 days of adoption of this Order (unless already submitted under the previous Order) and comply with Order No. 97-03-DWQ or the Discharger shall provide certification to the Regional Water Board and USEPA that all storm water is captured and treated on-site and no storm water is discharged or allowed to run off-site from the facility.

3. **Pretreatment.** Federal requirements at 40 CFR 403 establish pretreatment requirements for POTWs which receive pollutants from nondomestic users. This Order contains pretreatment requirements pursuant to 40 CFR 403.

4. **Collection System.** Publicly-owned collection systems are subject to coverage under State Water Board Order No. 2006-0003-DWQ, the Statewide General WDR For Collection System Agencies. The Discharger owns and operates a publicly-owned collection system and must retain coverage under the Statewide General WDR For Collection System Agencies.

   In addition, the previsions of this permit prohibit discharges from any point other than the authorized discharge point. Therefore, any discharges from the collection system are prohibited. Moreover, the collection system is part of the publicly-owned treatment works and, therefore, must comply with the provisions of this permit requiring reports of any noncompliance (40 CFR 122.44(l)(6) and (7)), proper operation and maintenance (40 CFR 122.41(e)), and duty to mitigate sewage spills (40 CFR 12.41(d)).

5. **Biosolids.** On February 19, 1993, the USEPA issued a final rule for the use and disposal of sewage sludge (40 CFR 503). This regulation requires that producers of sewage sludge meet certain handling, disposal, and monitoring requirements. The USEPA, not the Regional Water Board, will oversee compliance with 40 CFR 503.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

A. Discharge Prohibitions

Discharge Prohibitions A.1, A.2, and A.3 have been carried over from Order No. R9-2002-0025 in Section III of this Order. Discharge Prohibitions A.4 and A.5 have been carried over as Discharge Provisions in Section VI.A.2 of this Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at Section 122.44, title 40 of the Code of Federal Regulations, require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards.

As previously described, the Discharger has requested a renewal of its variance under Section 301(h) of the CWA, 33 U.S.C. Section 1311(h), and the Ocean Pollution Reduction Act of 1994, 33 U.S.C. Section 1311(j)(5), from the federal secondary treatment standards contained in Section 301(b)(1)(B) of the CWA, U.S.C. Section 1311(b)(1)(B), for the pollutants TSS and BOD_5. A modification for pH was not requested. The effluent limitations for TSS and BOD_5, based on CWA Sections 301(h) and (j)(5), are previously described in this fact sheet. The technology based effluent limitation for pH, required by 40 CFR 133, continues to apply to the discharge which must be maintained within the limits of 6.0 to 9.0 pH units, at all times.

Table A of the Ocean Plan establishes technology based effluent limitations for publicly-owned treatment works. Table A requirements are summarized, below:

Table F-8. Summary of Technology-based Effluent Limitations from Table A of the Ocean Plan

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Maximum
Grease and Oil	mg/L	25	40	75
Suspended Solids[1]	mg/L	--	--	--
Settleable Solids	ml/L	1.0	1.5	3.0
Turbidity	NTU	75	100	225
pH	standard units	--	--	[2]

[1] Dischargers shall, as a 30-day average, remove 75 percent of suspended solids from the influent stream to the Facility before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L.

[2] Within limit of 6.0 to 9.0 at all times.

2. Applicable Technology-Based Effluent Limitations

The Facility consistently met the removal requirements for BOD_5 and TSS established in Order No. R9-2002-0025. System-wide monthly average removal rates for BOD_5 from January 2002 through December 2007 ranged from 59 percent to 71 percent; and annual removal averages ranging from 61 percent to 68 percent. System-wide monthly average removal rates for TSS from January 2002 through December 2007 ranged from 83 percent to 92.6 percent. Based on CWA Sections 301(h) and (j)(5), the percent removal requirements of BOD_5 and TSS remain appropriate and are carried over from Order No. R9-2002-0025. TSS and BOD_5 removal is computed on a “system-wide” basis to avoid double-counting of return solids and centrate streams.

Table A of the Ocean Plan contains a percent removal requirement of 75 percent. This requirement is not computed on a system-wide basis and applies directly to the Point Loma WTP influent and effluent waste streams. It is established in this Order as an effluent limitation based on Table A of the Ocean Plan.

The mass emission limitations for TSS in the existing permit are based on the effluent limitations requested by the Discharger in the 2007 301(h) application which were evaluated by USEPA in the 2008 TDD.

The effluent limitation for TSS of 75 mg/l was contained in the 1995 and 2003 permits. It continues to be an effluent limitation requested by the Discharger in the 2007 301(h) application. The Regional Water Board and USEPA reviewed influent TSS data for January 2002 through December 2007. For this time period, the average effluent TSS concentration is 39.6 mg/l. Thus, the Discharger is expected to comply with the proposed effluent limitation for TSS of 75 mg/l.

40 CFR 122.45(f) requires NPDES permits to contain mass-based effluent limitations and 40 CFR 122.45(b) specifies that mass limits for POTWs shall be calculated based on design flow. The annual average design flow rate for the Point Loma WTP is 240 MGD. The previous Orders have contained mass-based effluent limitations for oil and grease calculated using the Discharger's projected end-of-permit annual average flow rate of 205 MGD, taken from the 1995 301(h) application. During the term of the existing permit, the Discharger's actual annual average flow rate ranged from 169 in 2002, to 161 in 2007. The Discharger has maintained compliance with effluent limitations for mass emissions calculated using 205 MGD. In the 2007 301(h) application, the Discharger's projected flow rates for the 5-year permit term range from 191 MGD in 2008, to 202 MGD in 2014. USEPA has not evaluated the impact of the PLOO discharge and compliance with CWA Section 301(h) decision criteria at an oil and grease mass emission rate associated with a PLOO discharge of 240 MGD. Based on the 2007 301(h) application, mass emission rate effluent limits continue to be based on the flow rate of 205 MGD, as they were in the 1995 and 2003 permits.

A summary of the applicable technology-based effluent limitations is provided below:

Summary of Technology-based Effluent Limitations
Discharge Point No. 001

Table F-9a. Summary of Technology-based Effluent Limitations Based on CWA Sections 301(h) and (j)(5)

Effluent Constituent	Units	Annual Average	Monthly Average
TSS	% removal[1]	---	≥80
	mg/l	---	75[4]
	metric tons/year	15,000[2]	---
		13,598[3]	---
BOD5	% removal[1]	≥58	---

[1] To be calculated on a system-wide basis, as provided in Addendum No. 1 to Order No. R9-2002-0025.
[2] To be achieved on permit effective date through December 31, 2013. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System

service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[3] To be achieved on January 1, 2014. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[4] Based on average monthly performance data (1990 through 1994) for the Point Loma WTP provided by the Discharger for the 1995 301(h) application.

Table F-9b. Summary of Technology-based Effluent Limitations Based on the Ocean Plan

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	% removal	--	[1]	--	--	--
Oil and Grease	mg/L	25	40	--	--	75
	lbs/day	42,743	68,388	---	--	128,228
Settleable Solids	ml/L	1.0	1.5	--	--	3.0
Turbidity	NTU	75	100	--	--	225
pH	Standard unit	--	--	--	6.0	9.0

[1] The Discharger shall, as a 30-day average, remove 75 percent of suspended solids from the influent stream to the Facility before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

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

a. Basin Plan. The beneficial uses specified in the Basin Plan applicable to the Pacific Ocean are summarized in Section III.C.1 of this Fact Sheet. The Basin Plan includes water quality objectives for dissolved oxygen and pH applicable to the receiving water.

The Basin Plan states, "The terms and conditions of the State Board's "*Water Quality Control Plan for Ocean Waters of California*" (Ocean Plan), "*Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California*" (Thermal Plan), and any revisions thereto are incorporated into this Basin Plan by reference. The terms and conditions of the Ocean Plan and Thermal Plan apply to the ocean waters within this Region."

b. Ocean Plan. The beneficial uses specified in the Ocean Plan for the Pacific Ocean are summarized in Section III.C.2 of this Fact Sheet. The Ocean Plan also includes water quality objectives for ocean receiving waters for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity.

Table B of the Ocean Plan includes the following water quality objectives for toxic pollutants and whole effluent toxicity:

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

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

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

iv. Daily maximum objectives for acute and chronic toxicity.

3. Determining the Need for WQBELs

Order No. R9-2002-0025 contained effluent limitations for non-conventional and toxic pollutant parameters in Table B of the 1997 Ocean Plan. For Order No. R9-2009-0001, the need for effluent limitations based on water quality objectives in Table B of the Ocean Plan was re-evaluated in accordance with 40 CFR 122.44(d) and guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the revised *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, 1991) and the Ocean Plan Reasonable Potential Analysis (RPA) Amendment that was adopted by the State Water Board on April 21, 2005. The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited amount of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and minimum probable initial dilution), can then be compared to the appropriate objective to determine the potential for an exceedance of that objective and the need for an effluent limitation.

According to the Ocean Plan amendment, the RPA can yield three endpoints: 1) Endpoint 1, an effluent limitation is required and monitoring is required; 2) Endpoint 2, an effluent limitation is not required and the Regional Water Board may require monitoring; 3) Endpoint 3, the RPA is inconclusive, monitoring is required, and an existing effluent limitation may be retained or a permit reopener clause may be included to allow inclusion of an effluent limitation if future monitoring warrants the inclusion. Endpoint 3 is typically the result when there are fewer than 16 data points and all are censored data (i.e., below quantitation or method detection levels for an analytical procedure). If no data was provided for a parameter, and a RPA could not be conducted for that parameter, reasonable potential for that parameter was carried over to this Order based on the requirements of federal and State anti-backsliding regulations.

Reasonable Potential (Endpoint 1) to exceed water quality objectives contained within the Ocean Plan was determined for chronic toxicity, chlordane, and heptachlor, thus effluent limitations for chronic toxicity, chlordane, and heptachlor have been established in Order No. R9-2009-0001 based on the revised initial dilution results.

Using the RPcalc2.0 software tool developed by the State Water Board for conducting reasonable potential analyses and the revised minimum probable initial dilution value (Dm) of 204, the Regional Water Board has determined that the constituents listed under Table F-16, when discharged through Discharge Point No. 001, do not have the reasonable potential to exceed their Ocean Plan Table B objectives (i.e., Endpoint 2), or do not require effluent limitations due to inconclusive evidence to establish reasonable potential (i.e., Endpoint 3), in accordance with 40 CFR 122.44(d). Instead, a narrative limit statement to comply with all Ocean Plan objectives and requirements is specified this Order.

This Order includes desirable maximum effluent concentrations for constituents that do not have reasonable potential, referred to as "performance goals" that were derived using the effluent limitations procedures described below. The Discharger is required to monitor for these constituents as stated in the MRP (Attachment E) to gather data used in reasonable potential analyses for the permit and assist in the demonstrations and evaluations required by CWA Section 301(h) and 40 CFR 125, Subpart G.

The removal of WQBELs based on the results of the RPA comply with the CWA and Ocean Plan. For waters where water quality equals or exceeds that which is needed to protect beneficial uses and otherwise comply with water quality standards, WQBELs may be revised if consistent with USEPA and State antidegradation policies. The constituents for which numeric WQBELs are proposed to be removed have no reasonable potential to exceed numeric water quality standards. As discussed in more detail below (see Section IV.E.2) existing water quality is expected to be maintained for these constituents. Therefore, removal of WQBELs for these constituents is consistent with USEPA and State antidegradation policies.

The discharge has received approval by the Regional Water Board to implement effluent chlorination using sodium hypochlorite. Based on a review of bench-scale testing, total chlorine residual and the resulting halogenated organic chemical compounds associated with chlorination are not expected to exceed Ocean Plan Table B objectives (see Volume IV, Appendix D, of the 2007 301(h) application). However, based on best professional judgment, USEPA and the Regional Water Board have determined that the operation of effluent disinfection using chlorination at Point Loma WTP constitutes reasonable potential for the effluent discharge to exceed Table B objectives for these constituents. Based on this determination, WQBELs for the following constituents are included in the Order: total chlorine residual, phenolic compounds, chlorinated phenolics, chlorodibromomethane, chloroform, 1,4-dichlorobenzene, dichlorobromomethane, dichloromethane (methylene chloride), and halomethanes. In addition, the permit contains a condition requiring continuous compliance monitoring for total chlorine residual.

Conventional pollutants were not a part of the reasonable potential analysis. Effluent limitations for these pollutants are included in this Order as described in Section IV.B. above.

Effluent data provided in the Discharger's monitoring reports from January 2005 to December 2007 were used in the analyses. A minimum probable initial dilution of 204 was considered in these evaluations.

A summary of the RPA results is provided below:

Table F-10. RPA Results Summary

Parameter (µg/L)	n[1]	MEC[2]	Most Stringent Criteria	Background	RPA End Point[8]
Arsenic	319	2.74	8[3]	3[6]	2
Cadmium	319	4.45	1[3]	0	2
Chromium (VI)	318	23.4	2[3]	0	2
Copper	136	72	3[3]	2[6]	2
Lead	136	5.3	2[3]	0	2
Mercury	136	0.139	0.004[3]	0.0005[6]	2
Nickel	136	21.1	5[3]	0	2
Selenium	136	1.6	15[3]	0	2
Silver	136	0.91	0.7[3]	0.16[6]	2
Zinc	136	65.8	20[3]	8[6]	2
Cyanide	135	0.004	1[3]	0	2
Total Residual Chlorine	4	<0.03	2[3]	0	1[7]
Ammonia	136	36.7	600[3]	0	2
Acute Toxicity	11	5.3	0.3[4]	0	2
Chronic Toxicity	157	>667	1[4]	0	1
Phenolic Compounds	136	25.6	30	0	1[7]
Chlorinated Phenolics	136	1.85	1	0	1[7]
Endosulfan (ng/L)	136	0.7	9[3]	0	2
Endrin	136	<0.05	0.002[3]	0	2
HCH (ng/L)	136	72.5	4[3]	0	2
Acrolein	136	<11.4	220[5]	0	2
Antimony	136	<2.9	1,200[5]	0	2
Bis(2-chloroethoxyl)methane	37	<1.57	4.4[5]	0	2
Bis(2-chloroisopropyl)ether	37	<8.95	1,200[5]	0	2
Chlorobenzene	36	<1	570[5]	0	2
Chromium (III)	136	23.4	190,000[5]	0	2
Di-n-butyl phthalate	37	<6.49	3,500[5]	0	2
Dichlorobenzenes	64	3.49	5,100[5]	0	2
Diethyl phthalate	37	11.2	33,000[5]	0	2
Dimethyl phthalate	37	<3.26	820,000[5]	0	2
4,6-Dinitro-2-methylphenol	136	<4.29	220[5]	0	2
2,4-Dinitrophenol	136	<6.07	4[5]	0	2
Ethylbenzene	36	<1	4,100[5]	0	2
Fluoranthene	37	<6.9	15	0	2
Hexachlorocyclopentadiene	64	All non-detect, no MDL provided, assumed End Point 3			
Nitrobenzene	37	<1.52	4.9[5]	0	2
Thallium	53	<1.806	2[5]	0	2
Toluene	36	3.54	85,000[5]	0	2
Tributyltin	12	<1	0.0014	0	2
1,1,1-Trichloroethane	36	<1	540,000[5]	0	2
Acrylonitrile	36	<13.8	0.1[5]	0	2
Aldrin	36	<60	0.000022[5]	0	2
Benzene	36	<1	5.9[5]	0	2
Benzidine	35	<1.02	0.000069[5]	0	2
Beryllium	136	<0.04	0.033[5]	0	2
Bis(2-chloroethyl) ether	37	<2.62	0.045[5]	0	2
Bis(2-ethylhexyl) phthalate	33	<10.43	3.5[5]	0	2
Carbon tetrachloride	36	<1	0.9[5]	0	2
Chlordane (ng/L)	136	92	0.023	0	1
Chlorodibromomethane	36	2.87	8.6[5]	0	1[7]
Chloroform	36	<1	130[5]	0	1[7]

Parameter (µg/L)	n[1]	MEC[2]	Most Stringent Criteria	Background	RPA End Point[8]
DDT (ng/L)	136	<140	0.17[5]	0	2
1,4-Dichlorobenzene	64	3.49	18[5]	0	1[7]
3,3-Dichlorobenzidine	35	<2.43	0.0081[5]	0	2
1,2-Dichloroethane	36	<1	28[5]	0	2
1,1-Dichloroethylene	36	<1	0.9[5]	0	2
Dichlorobromomethane	36	3.66	6.2[5]	0	1[7]
Dichloromethane	36	6.32	450[5]	0	1[7]
1,3-Dichloropropene	35	<2	8.9[5]	0	2
Dieldrin (ng/L)	136	<50	0.04[5]	0	2
2,4-Dinitrotoluene	37	<1.49	2.6[5]	0	2
1,2-Diphenylhydrazine	37	<2.49	0.16[5]	0	2
Halomethanes	36	<3	130[5]	0	1[7]
Heptachlor (ng/L)	136	44	0.05[5]	0	1
Heptachlor Epoxide (ng/L)	136	<20	0.02[5]	0	3
Hexachlorobenzene	37	<4.8	0.00021[5]	0	3
Hexachlorobutadiene	37	<2.87	14[5]	0	2
Hexachloroethane	37	<3.55	2.5[5]	0	2
Isophorone	37	<1.93	730[5]	0	2
N-nitrosodimethylamine	37	<2.01	7.3[5]	0	2
N-nitrosodi-N-propylamine	37	<1.16	0.38[5]	0	2
N-nitrosodiphenylamine	37	<2.96	2.5[5]	0	2
PAHs	37	<72.48	0.0088[5]	0	3
PCBs (ng/L)	135	<18.360	0.019[5]	0	3
TCDD equivalents	All ND's, C>MDL, thus automatic End Point 3				
1,1,2,2-Tetrachoroethane	36	<1	2.3[5]	0	2
Tetrachloroethylene	36	3.4	2	0	2
Toxaphene (ng/L)	136	<4,000	0.21[5]	0	3
Trichloroethylene	36	<1	27[5]	0	2
1,1,2-Trichloroethane	36	1.13	9.4[5]	0	2
2,4,6-Trichlorophenol	136	<1.75	0.29[5]	0	2
Vinyl Chloride	36	<1	36[5]	0	2

1 Number of data points available for the RPA.
2 If there is a detected value, the highest reported value is summarized in the table. If there are no detected values, the lowest MDL is summarized in the table.
3 Based on the 6-Month Median in the Table B of the Ocean Plan.
4 Based on the Daily Maximum in Table B of the Ocean Plan.
5 Based on 30-Day Average in Table B of the Ocean Plan.
6 Background concentrations contained in Table C of the Ocean Plan.
7 Based on BPJ due to operations at the Facility.
8 End Point 1 – Reasonable potential determined, limit required, monitoring required.
End Point 2 – Discharger determined not to have RP, monitoring may be established.
End Point 3 – RPA was inconclusive, carry over previous limits if applicable, establish monitoring.

4. WQBEL Calculations

a. Effluent limitations and performance goals for pollutants with Ocean Plan Table B water quality objectives, except for acute toxicity (if applicable) and radioactivity, were calculated according to the following equation:

$Ce = Co + Dm\ (Co - Cs)$ where,
Ce = the effluent limitation (µg/L)
Co = the water quality objective to be met at the completion of initial dilution (ug/L)
Cs = background seawater concentration
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

The performance goal for acute toxicity is calculated according to the following equation where all variables are as previously indicated. This equation applies only when $Dm > 24$:

$$Ce = Co + (0.1)\ Dm\ (Co - Cs)$$

The Dm is based on observed waste flow characteristics, receiving water density structure, and the assumption that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure.

b. The State Water Board had accepted the minimum initial dilution factor, Dm, for the PLOO to be 204 to 1. This determination is based on the results of a modified version of the RSB model, submitted with the Discharger's 1995 ROWD and the Discharger's 1995 301(h) application to USEPA.

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

c. Table C of the Ocean Plan establishes background concentrations for some pollutants to be used when determining reasonable potential (represented as "Cs"). In accordance with Table B implementing procedures, Cs equals zero for all pollutants where background concentrations are not established in Table C. The background concentrations provided in Table C are summarized below:

Table F-11. Pollutants Having Background Concentrations

Pollutant	Background Seawater Concentration
Arsenic	3 µg/L
Copper	2 µg/L
Mercury	0.0005 µg/L
Silver	0.16 µg/L
Zinc	8 µg/L

d. As examples, performance goals for copper and lead are determined as follows:

Water quality objectives from the Ocean Plan for copper and lead are:

Table F-12. Example Parameter Water Quality Objectives

Pollutant	6-Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Copper (µg/L)	3	--	12	30
Chlordane (µg/L)	--	0.000023	--	--

Using the equation, Ce = Co + Dm (Co – Cs), effluent limitations/performance goals are calculated as follows before rounding to two significant digits.

Copper

Ce = 3 + 204 (3 – 2) = 207 µg/L (6-Month Median)
Ce = 12 + 204 (12 – 2) = 2,052 µg/L (Daily Maximum)
Ce = 20 + 204 (20 – 2) = 3,692 µg/L (Instantaneous Maximum)

Chlordane

Ce = 0.000023 + 204 (0.000023 – 0) = 4.7E-03 µg/L (30-Day Average)

Based on the implementing procedures described above, effluent limitations or performance goals have been calculated for all Table B pollutants from the Ocean Plan and incorporated into Order No. R9-2009-0001.

e. Title 40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration.

Mass-based effluent limitations were calculated using the following equation, based on projected end-of-permit of 205 MGD:

Lbs/day = Projected End-of-Permit Flow Flow (MGD) x Pollutant Concentration (mg/L) x 8.34

f. A summary of the WQBELs established in Order No. R9-2009-0001 is provided below:

Summary of Water Quality-based Effluent Limitations
Discharge Point No. 001

Table F-13. Summary of Water Quality-based Effluent Limitations

Parameter	Unit	Water Quality-Based Effluent Limitations			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
BASED ON OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Chronic Toxicity[1]	TUc	--	205	--	--
Total Chlorine Residual	µg/L	4.1E+02	1.6E+03	1.2E+04	--
	lbs/day	7.0E+02	2.8E+03	2.1E+04	--
Phenolic Compounds (non-chlorinated)	µg/L	6.2E+03	2.5E+04	6.2E+04	--
	lbs/day	1.1E+04	4.2E+04	1.1E+05	--
Chlorinated Phenolics	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Chlordane[2]	µg/L	--	--	--	4.7E-03
	lbs/day	--	--	--	8.1E-03
Chlorodibromomethane	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.0E+03
Chloroform	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
1,4-Dichlorobenzene	µg/L	--	--	--	3.7E+03
	lbs/day	--	--	--	6.3E+03
Dichlorobromomethane	µg/L	--	--	--	1.3E+03
	lbs/day	--	--	--	2.2E+03
Dichloromethane	µg/L	--	--	--	9.2E+04
	lbs/day	--	--	--	1.6E+05
Halomethanes[3]	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
Heptachlor	µg/L	--	--	--	1.0E-02
	lbs/day	--	--	--	1.8E-02

[1] Chronic toxicity is expressed as Chronic Toxicity Units (TUc) = 100/NOEL, where NOEL (No Observed Effect Level) is expressed as the maximum percent effluent that causes no observable effect on a test organism.
[2] Chlordanes represent the sum of chlordane-alpha, chlordane-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.
[3] Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

g. A summary of the performance goals established in Order No. R9-2009-0001 is provided in Table F-16 of this Fact Sheet.

5. Whole Effluent Toxicity (WET)

a. Implementing provisions at Section III.C of the Ocean Plan require chronic toxicity monitoring for ocean waste discharges with minimum initial dilution factor between 100 and 350. RPA results based on procedures specified in the Ocean Plan indicate that the effluent has the reasonable potential to exceed the chronic toxicity water quality objective. Based on methods contained in the Ocean Plan, a maximum daily effluent limitation of 205 TU_c is established in this Order and monthly monitoring is carried over from Order No. R9-2002-0025. New permit conditions for quality assurance and test review are added based on USEPA guidance for whole effluent toxicity programs.

b. Implementing provisions at Section III.C of the Ocean Plan allow for the establishment of acute toxicity testing, in addition to chronic, for ocean waste discharges with minimum initial dilution factors between 100 and 350. A performance goal for acute toxicity of 6.42 TUa is established based on "Equation 2" provided in Section III.C.3.b of the Ocean Plan. Semi-annual acute toxicity monitoring is carried over from Order No. R9-2002-0025. New permit conditions for quality assurance and test review are added based on USEPA guidance for whole effluent toxicity testing programs.

D. Final Effluent Limitations

The following tables list the effluent limitations established by Order No. R9-2009-0001. Where Order No. R9-2009-0001 establishes mass emission limitations, these limitations have been derived based on a flow of 205 MGD.

Table F-14.a. Effluent Limitations Based on CWA Sections 301(h) and (j)(5)

Effluent Constituent	Units	Annual Average	Monthly Average
TSS	% removal[1]	---	$\geq$80
	mg/l	---	75[4]
	metric tons/year	15,000[2]	---
		13,598[3]	---
BOD5	% removal[1]	$\geq$58	---

[1] To be calculated on a system-wide basis, as provided in Addendum No. 1 to Order No. R9-2002-0025.
[2] To be achieved on permit effective date through December 31, 2013. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[3] To be achieved on January 1, 2014. Applies only to TSS discharges from POTWs owned and operated by the Discharger and the Discharger's wastewater generated in the Metro System service area; does not apply to wastewater (and the resulting TSS) generated in Mexico which, as a result of upset or shutdown, is treated at and discharged from Point Loma WTP.
[4] Based on average monthly performance data (1990 through 1994) for the Point Loma WTP provided by the Discharger for the 1995 301(h) application.

Table F-14.b Effluent Limitations Based on Advanced Primary Treatment and Table A of the Ocean Plan

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Oil and Grease	mg/L	25	40	--	--	75
	lbs/day	42,743	68,388	---	--	128,228
Total Suspended Solids	% removal	[1]	--	--	--	--
Settleable Solids	ml/L	1.0	1.5	--	--	3.0
Turbidity	NTU	75	100	--	--	225
pH	Standard unit	--	--	--	6.0	9.0

[1] The Discharger shall, as a 30-day average, remove 75% of suspended solids from the influent stream to the Facility before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L.

Table F-15. Effluent Limitations Based on Table B of the Ocean Plan

Parameter	Unit	Water Quality-Based Effluent Limitations			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
BASED ON OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Chronic Toxicity[1]	TUc	--	205	--	--
Total Chlorine Residual	µg/L	4.1E+02	1.6E+03	1.2E+04	--
	lbs/day	7.0E+02	2.8E+03	2.1E+04	--
Phenolic Compounds (non-chlorinated)	µg/L	6.2E+03	2.5E+04	6.2E+04	--
	lbs/day	1.1E+04	4.2E+04	1.1E+05	--
Chlorinated Phenolics	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Chlordane[2]	µg/L	--	--	--	4.7E-03
	lbs/day	--	--	--	8.1E-03
Chlorodibromomethane	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.0E+03
Chloroform	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04
1,4-Dichlorobenzene	µg/L	--	--	--	3.7E+03
	lbs/day	--	--	--	6.3E+03
Dichlorobromomethane	µg/L	--	--	--	1.3E+03
	lbs/day	--	--	--	2.2E+03
Dichloromethane	µg/L	--	--	--	9.2E+04
	lbs/day	--	--	--	1.6E+05
Halomethanes[3]	µg/L	--	--	--	2.7E+04
	lbs/day	--	--	--	4.6E+04

Parameter	Unit	Water Quality-Based Effluent Limitations			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
Heptachlor	µg/L	--	--	--	1.0E-02
	lbs/day	--	--	--	1.8E-02

[1] Chronic toxicity is expressed as Chronic Toxicity Units (TUc) = 100/NOEL, where NOEL (No Observed Effect Level) is expressed as the maximum percent effluent that causes no observable effect on a test organism.
[2] Chlordanes represent the sum of chlordane-alpha, chlordane-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.
[3] Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

E. Performance Goals

Constituents that do not have reasonable potential are assigned performance goals in this Order. Performance goals serve to maintain existing treatment levels and effluent quality and support State and federal antidegradation policies. Where WQBELs have not been established in accordance with Ocean Plan RPA procedures, performance goals provide all interested parties with information regarding the Ocean Plan regulatory levels that effluent pollutants need to achieve in order to protect ocean water quality. An exceedance of a performance goal may prompt the Regional Water Board or USEPA to reopen and amend the permit to incorporate WQBELs based on 40 CFR 122.44(d)(1), in accordance with 40 CFR 122.62.

The following table lists the performance goals established by Order No. R9-2009-0001. A minimum probable initial dilution factor of 204 was used in establishing the performance goals.

Table F-16. Performance Goals Based on the Ocean Plan.

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
BASED ON OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	1.0E+03	5.9E+03	1.6E+04	--
	lbs/day	1.8E+03	1.0E+04	2.7E+04	--
Cadmium, Total Recoverable	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Chromium VI, Total Recoverable[2]	µg/L	4.1E+02	1.6E+03	4.1E+03	--
	lbs/day	7.0E+02	2.8E+03	7.0E+03	--
Copper, Total Recoverable	µg/L	2.1E+02	2.1E+03	5.7E+03	--
	lbs/day	3.5E+02	3.5E+03	9.8E+03	--
Lead, Total Recoverable	µg/L	4.1E+02	1.6E+03	4.1E+03	--
	lbs/day	7.0E+02	2.8E+03	7.0E+03	--
Mercury, Total Recoverable[11]	µg/L	8.1	3.3E+01	8.2E+01	--
	lbs/day	1.4E+01	5.6E+01	1.4E+02	--
Nickel, Total Recoverable	µg/L	1.0E+03	4.1E+03	1.0E+04	--

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
	lbs/day	1.8E+03	7.0E+03	1.8E+04	--
Selenium, Total Recoverable	µg/L	3.1E+03	1.2E+04	3.1E+04	--
	lbs/day	5.3E+03	2.1E+04	5.3E+04	--
Silver, Total Recoverable	µg/L	1.1E+02	5.4E+02	1.4E+03	--
	lbs/day	1.9E+02	9.3E+02	2.4E+03	--
Zinc, Total Recoverable	µg/L	2.5E+03	1.5E+04	3.9E+04	--
	lbs/day	4.2E+03	2.5E+04	6.7E+04	--
Cyanide, Total Recoverable [3]	µg/L	2.1E+02	8.2E+02	2.1E+03	--
	lbs/day	3.5E+02	1.4E+03	3.5E+03	--
Ammonia (expressed as nitrogen)	µg/L	1.2E+05	4.9E+05	1.2E+06	--
	lbs/day	2.1E+05	8.4E+05	2.1E+06	--
Acute Toxicity	TUa	NA	61.5	NA	--
Endosulfan[10]	µg/L	1.8	3.7	5.5	--
	lbs/day	3.2	6.3	9.5	--
Endrin	µg/L	0.41	0.82	1.2	--
	lbs/day	0.7	1.4	2.1	--
HCH[4]	µg/L	0.82	1.6	2.5	--
	lbs/day	1.4	2.8	4.2	--
Radioactivity	pci/l	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations, Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	--	--	--	4.5E+04
	lbs/day	--	--	--	7.7E+04
Antimony	µg/L	--	--	--	2.5E+05
	lbs/day	--	--	--	4.2E+05
Bis(2-chloroethoxy) Methane	µg/L	--	--	--	9.0E+02
	lbs/day	--	--	--	1.5E+03
Bis(2-chloroisopropyl) ether	µg/L	--	--	--	2.5E+05
	lbs/day	--	--	--	4.2E+05
Chlorobenzene	µg/L	--	--	--	1.2E+05
	lbs/day	--	--	--	2.0E+05
Chromium, Total Recoverable (III)	µg/L	--	--	--	3.9E+07
	lbs/day	--	--	--	6.7E+07
Di-n-butyl Phthalate	µg/L	--	--	--	7.2E+05
	lbs/day	--	--	--	1.2E+06
Dichlorobenzenes[5]	µg/L	--	--	--	1.0E+06

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
	lbs/day	--	--	--	1.8E+06
Diethyl Phthalate	µg/L	--	--	--	6.8E+06
	lbs/day	--	--	--	1.2E+07
Dimethyl Phthalate	µg/L	--	--	--	1.7E+08
	lbs/day	--	--	--	2.9E+08
4,6-dinitro-2-methylphenol	µg/L	--	--	--	4.5E+04
	lbs/day	--	--	--	7.7E+04
2,4-dinitrophenol	µg/L	--	--	--	8.2E+02
	lbs/day	--	--	--	1.4E+03
Ethylbenzene	µg/L	--	--	--	8.4E+05
	lbs/day	--	--	--	1.4E+06
Fluoranthene	µg/L	--	--	--	3.1E+03
	lbs/day	--	--	--	5.3E+03
Hexachlorocyclopentadiene	µg/L	--	--	--	1.2E+04
	lbs/day	--	--	--	2.0E+04
Nitrobenzene	µg/L	--	--	--	1.0E+03
	lbs/day	--	--	--	1.7E+03
Thallium, Total Recoverable	µg/L	--	--	--	4.1E+02
	lbs/day	--	--	--	7.0E+02
Toluene	µg/L	--	--	--	1.7E+07
	lbs/day	--	--	--	3.0E+07
Tributyltin	µg/L	--	--	--	2.9E-01
	lbs/day	--	--	--	4.9E-01
1,1,1-trichloroethane	µg/L	--	--	--	1.1E+08
	lbs/day	--	--	--	1.9E+08
BASED ON OBJECTIVES FOR PROTECTION OF HUMAN HEALTH - CARCINOGENS					
Acrylonitrile	µg/L	--	--	--	21
	lbs/day	--	--	--	35
Aldrin	µg/L	--	--	--	4.5E-03
	lbs/day	--	--	--	7.7E-03
Benzene	µg/L	--	--	--	1.2E+03
	lbs/day	--	--	--	2.1E+03
Benzidine	µg/L	--	--	--	1.4E-02
	lbs/day	--	--	--	2.4E-02
Beryllium	µg/L	--	--	--	6.8
	lbs/day	--	--	--	1.2E+01
Bis(2-chloroethyl) Ether	µg/L	--	--	--	9.2
	lbs/day	--	--	--	1.6E+01

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
Bis(2-ethlyhexyl) Phthalate	µg/L	--	--	--	7.2E+02
	lbs/day	--	--	--	1.2E+03
Carbon Tetrachloride	µg/L	--	--	--	1.8E+02
	lbs/day	--	--	--	3.2E+02
DDT[6]	µg/L	--	--	--	3.5E-02
	lbs/day	--	--	--	6.0E-02
3,3'-dichlorobenzidine	µg/L	--	--	--	1.7
	lbs/day	--	--	--	2.8
1,2-dichloroethane	µg/L	--	--	--	5.7E+03
	lbs/day	--	--	--	9.8E+03
1,1-dichloroethylene	µg/L	--	--	--	1.8E+02
	lbs/day	--	--	--	3.2E+02
1,3-dichloropropene	µg/L	--	--	--	1.8E+03
	lbs/day	--	--	--	3.1E+03
Dieldrin	µg/L	--	--	--	8.2E-03
	lbs/day	--	--	--	1.4E-02
2,4-dinitrotoluene	µg/L	--	--	--	5.3E+02
	lbs/day	--	--	--	9.1E+02
1,2-diphenylhydrazine	µg/L	--	--	--	3.3E+01
	lbs/day	--	--	--	5.6E+01
Heptachlor Epoxide	µg/L	--	--	--	4.1E-03
	lbs/day	--	--	--	7.0E-03
Hexachlorobenzene	µg/L	--	--	--	4.3E-02
	lbs/day	--	--	--	7.4E-02
Hexachlorobutadiene	µg/L	--	--	--	2.9E+03
	lbs/day	--	--	--	4.9E+03
Hexachloroethane	µg/L	--	--	--	5.1E+02
	lbs/day	--	--	--	8.8E+02
Isophorone	µg/L	--	--	--	1.5E+05
	lbs/day	--	--	--	2.6E+05
N-nitrosodimethylamine	µg/L	--	--	--	1.5E+03
	lbs/day	--	--	--	2.6E+03
N-nitrosodi-N-propylamine	µg/L	--	--	--	7.8E+01
	lbs/day	--	--	--	1.3E+02
N-nitrosodiphenylamine	µg/L	--	--	--	5.1E+02
	lbs/day	--	--	--	8.8E+02
PAHs[7]	µg/L	--	--	--	1.8
	lbs/day	--	--	--	3.1

Parameter	Unit	Performance Goals[1]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	30-Day Average
PCBs[8]	µg/L	--	--	--	3.9E-03
	lbs/day	--	--	--	6.7E-03
TCDD equivalents[9]	µg/L	--	--	--	8.0E-07
	lbs/day	--	--	--	1.4E-06
1,1,2,2-tetrachloroethane	µg/L	--	--	--	4.7E+02
	lbs/day	--	--	--	8.1E+02
Tetrachloroethylene	µg/L	--	--	--	4.1E+02
	lbs/day	--	--	--	7.0E+02
Toxaphene	µg/L	--	--	--	4.3E-02
	lbs/day	--	--	--	7.4E-02
Trichloroethylene	µg/L	--	--	--	5.5E+03
	lbs/day	--	--	--	9.5E+03
1,1,2-trichloroethane	µg/L	--	--	--	1.9E+03
	lbs/day	--	--	--	3.3E+03
2,4,6-trichlorophenol	µg/L	--	--	--	5.9E+01
	lbs/day	--	--	--	1.0E+02
Vinyl Chloride	µg/L	--	--	--	7.4E+03
	lbs/day	--	--	--	1.3E+04

1 Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following "E" indicates the position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^{2} or 610, and 6.1E+00 represents 6.1×10^{0} or 6.1.

2 Dischargers may, at their option, meet this limitation (or apply this performance goal) as a total chromium limitation (or performance goal).

3 If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometalic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR 136, as revised May 14, 1999.

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

5 Dichlorobenzenes represent the sum of 1,2- and 1,3-dichlorobenzene.

6 DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDT (dichlorodiphenyltrichloroethane) represent the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.

7 PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenapthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

8 PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

[9] TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 1613 shall be used to analyze TCDD equivalents.

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

[10] Endosulfan shall mean the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.
[11] USEPA Method 1631E, with a quantitation level of 0.5 ppt (0.5 ng/L), shall be used to analyze total mercury.

1. Satisfaction of Anti-Backsliding Requirements

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of the parameters summarized in Table F-16, for which performance goals have been established in the place of effluent limitations.

Effluent limitations from Order No. R9-2002-0025 are not retained for constituents where RPA results indicated Endpoint 2 or Endpoint 3; instead, performance goals have been established for these constituents. In the 1995 and 2003 permits, WQBELs for Table B constituents were established using Ocean Plan procedures in effect at that time. CWA 402(o)(2) allows relaxation of WQBELs in certain situations, but does not apply to “new information” that includes revised regulations. Moreover, new information can only be used when the revised WQBELs will result in a net reduction in pollutant loading. Relaxation of WQBELs can be authorized under CWA Sections 402(o)(1)/303(d)(4) for attainment waters, but only if consistent with antidegradation policies and existing Ocean Plan WQS are protected (CWA Section 402(o)(3)).

The MRP for this Order is designed to obtain additional information to determine if reasonable potential exists for these constituents and assist in the demonstration and evaluation of CWA Section 301(h) criteria.

This permit complies with all applicable statutory and regulatory federal and State anti-backsliding requirements.

2. Satisfaction of Antidegradation Policy

Waste Discharge Requirements for the Discharger must conform with federal and State antidegradation policies provided at 40 CFR 131.12 and in State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California.* These antidegradation policies require beneficial uses and the water quality necessary to maintain those uses to be maintained and protected in waters receiving the discharge. Moreover, if existing water quality is better than the quality required to maintain beneficial uses, then existing water quality must be maintained and protected, unless the Regional Water Board determines that allowing a lowering of existing water quality is necessary to accommodate important economic and social development, or consistent with maximum benefit to the people of California. Satisfaction of these policies is explained, below.

a. The Technology-based Effluent Limitations

The effluent limitations based on CWA Sections 301(h) and (j)(5) and technology-based effluent limitations taken from Ocean Plan Table A requirements are as stringent as those in the previous permit and no lowering of existing water quality is expected beyond the zone of initial dilution, consistent with applicable water quality standards.

b. Water Quality-based Effluent Limitations

The water quality-based effluent limitations contained in this Order have been modified from previous NPDES permits for the Discharger, including Order No. R9-2002-0025, due removal of effluent limitations after a RPA. In accordance with the State Water Board's Administrative Procedures Update, the Regional Water Board assessed the potential impact of the modified effluent limitations on existing water quality and the need for an antidegradation analysis as follows:

i. PLOO Initial Dilution Factor

As discussed elsewhere in this Fact Sheet, the initial dilution factor of 204, Dm, was carried over for this permit renewal.

ii. Removal of Effluent Limitations after a RPA

Although the 1995 and 2003 permits included WQBELs for all Ocean Plan Table B constituents, following Ocean Plan procedures in place at the time, this permit only includes WQBELs for those Table B constituents found to cause, have the reasonable potential to cause, or contribute to an excursion above water quality standards, in accordance with 40 CFR 122.44(d) and RPA procedures in the 2006 Ocean Plan. For Table B constituents without WQBELs, this permit includes performance goals which will indicate the levels of discharge that protect water quality standards. The removal of WQBELs is not expected to cause a change in the chemical nature of the effluent discharge, impact beneficial uses, or lower existing receiving water quality. Coupled with the inclusion of performance goals, toxics mass emission benchmarks from previous permits, and retention of the monitoring and reporting program, existing water quality is expected to be maintained by the discharge. For these reasons, the Regional Water Board has determined that an antidegradation analysis is not needed.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5, TSS, oil and grease, settleable solids, turbidity, and pH. Restrictions on these pollutants are discussed in Section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The scientific procedures for calculating individual water quality-based effluent limitations are taken from the Ocean Plan which was approved by USEPA on February 14, 2006. All beneficial uses and water quality objectives contained in the Basin Plan were approved under State law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR 131.21(c)(1). The limitations and restrictions on individual parameters are not more stringent than required by the CWA.

F. Toxic Mass Emission Benchmarks

Order No. 95-106 and Order No. R9-2002-0025 contained toxics mass emission benchmarks for effluent discharged through the PLOO. These benchmarks were established to address the uncertainty due to projected increases in toxic pollutant loadings from the Point Loma WTP to the marine environment during the 5-year 301(h) variance, and to establish a framework for evaluating the need for an antidegradation analysis to determine compliance with water quality standards at the time of permit reissuance. The benchmarks contained in Order No. R9-2002-0025 are retained for this permit.

The annual mass emission benchmarks for the 1995 permit were determined using 1990 through April 1995 n-day average monthly performance (95^{th} percentile) of the Point Loma WTP and the Discharger's projected end-of-permit effluent flow of 205 MGD for the 1995 301(h) application. For the 2003 permit, mass emission benchmarks for copper and selenium were recalculated using the 1994 n-day average monthly performance (95th percentile) and 205 MGD and the mass emission benchmark for cyanide was corrected. Average monthly performance was calculated as outlined in Appendix E of *Technical Support Document for Water Quality-based Toxics Control* (EPA/5005/2-90-001, 1991; TSD).

These mass emission benchmarks are not water quality-based effluent limitations and are not enforceable, as such. The mass emission threshold values may be re-evaluated and modified during the permit term, or the permit may be modified to incorporate water quality-based effluent limits, in accordance with the requirements set forth at 40 CFR 122.62 and 124.5. The following effluent mass emission benchmarks for toxic and carcinogenic materials apply to the undiluted effluent from Point Loma WTP discharged to the PLOO:

Table F-17. Effluent Mass Emission Benchmarks

Effluent Constituent	Units	Annual Mass Emission
Arsenic	mt/yr	0.88
Cadmium	mt/yr	1.4
Chromium (hexavalent)	mt/yr	14.2
Copper	mt/yr	26
Lead	mt/yr	14.2
Mercury[10]	mt/yr	0.19
Nickel	mt/yr	11.3
Selenium	mt/yr	0.44
Silver	mt/yr	2.8
Zinc	mt/yr	18.3
Cyanide[1]	mt/yr	1.57
Ammonia (as N)	mt/yr	8018
Phenolic compounds (non-chlorinated)	mt/yr	2.57
Chlorinated phenolics	mt/yr	1.73
Endosulfan[9]	mt/yr	0.006
Endrin	mt/yr	0.008
HCH[2]	mt/yr	0.025
Acrolein	mt/yr	17.6
Antimony	mt/yr	56.6
Bis(2-chloroethoxy) methane	mt/yr	1.5
Bis(2-chloroisopropyl) ether	mt/yr	1.61
Chlorobenzene	mt/yr	1.7
Di-n-butyl phthalate	mt/yr	1.33
Dichlorobenzenes[3]	mt/yr	2.8
Diethyl phthalate	mt/yr	6.23
Dimethyl phthalate	mt/yr	1.59
4,6-dinitro-2-methylphenol	mt/yr	6.8
2,4-dinitrophenol	mt/yr	11.9
Ethylbenzene	mt/yr	2.04
Flouranthene	mt/yr	0.62
Nitrobenzene	mt/yr	2.07
Thallium	mt/yr	36.8
Toluene	mt/yr	3.31

Effluent Constituent	Units	Annual Mass Emission
Tributyltin	mt/yr	0.001
1,1,1-trichloroethane	mt/yr	2.51
Acrylonitrile	mt/yr	5.95
Aldrin	mt/yr	0.006
Benzene	mt/yr	1.25
Benzidine	mt/yr	12.5
Beryllium	mt/yr	1.42
Bis(2-chloroethyl) ether	mt/yr	1.61
Bis(2-ethylhexyl) phthalate	mt/yr	2.89
Carbon tetrachloride	mt/yr	0.79
Chlordane[5]	mt/yr	0.014
Chloroform	mt/yr	2.19
DDT[4]	mt/yr	0.043
1,4-dichlorobenzene	mt/yr	1.25
3,3'-dichlorobenzidine	mt/yr	4.67
1,2-dichloroethane	mt/yr	0.79
1,1-dichloroethylene	mt/yr	0.79
Dichloromethane	mt/yr	13.7
1,3-dichloropropene	mt/yr	1.42
Dieldrin	mt/yr	0.011
2,4-dinitrotoluene	mt/yr	1.61
1,2-diphenylhydrazine	mt/yr	1.52
Halomethanes[6]	mt/yr	5.86
Heptachlor	mt/yr	0.001
Heptachlor epoxide	mt/yr	0.024
Hexachlorobenzene	mt/yr	0.54
Hexachlorobutadiene	mt/yr	0.54
Hexachloroethane	mt/yr	1.13
Isophorone	mt/yr	0.71
N-nitrosodimethylamine	mt/yr	0.76
N-nitrosodiphenylamine	mt/yr	1.47
PAHs[7]	mt/yr	15.45
PCBs[8]	mt/yr	0.275
1,1,2,2-tetrachloroethane	mt/yr	1.95
Tetrachloroethylene	mt/yr	4
Toxaphene	mt/yr	0.068
Trichloroethylene	mt/yr	1.56
1,1,2-trichloroethane	mt/yr	1.42
2,4,6-trichlorophenol	mt/yr	0.96
Vinyl chloride	mt/yr	0.4

1 If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometalic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR 136, as revised May 14, 1999.

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

[3] Dichlorobenzenes represent the sum of 1,2- and 1,3-dichlorobenzene.
[4] DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDT (dichlorodiphenyltrichloroethane) represent the sum of 4,4'DDT; 2,4'DDT; 4,4'DDE; 2,4'DDE; 4,4'DDD; and 2,4'DDD.
[5] Chlordanes represent the sum of chlordane-alpha, chlordane-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.
[6] Halomethanes represent the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).
[7] PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenapthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorene; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.
[8] PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.
[9] Endosulfan shall mean the sum of alpha-endosulfan, beta-endosulfan, and endosulfan sulfate.
[10] USEPA Method 1631E, with a quantitation level of 0.5 ppt (0.5 ng/L), shall be used to analyze total mercury

G. Interim Effluent Limitations – Not Applicable

H. Land Discharge Specifications – Not Applicable

I. Reclamation Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations of this Order are derived from the water quality objectives for ocean waters established by the Basin Plan and the Ocean Plan.

Receiving water limits for enterococcus in ocean waters beyond the outer limit of the territorial seas are based on CWA Section 304(a) water quality criteria and must be achieved beyond the zone of initial dilution in areas where primary contact recreation, as defined in USEPA guidance, occurs. USEPA describes the "primary contact recreation" use as protective when the potential for ingestion of, or immersion in, water is likely. Activities usually include swimming, water-skiing, skin-diving, surfing, and other activities likely to result in immersion. (*Water Quality Standards Handbook*, EPA-823-B-94-005a, 1994, p. 2-2.) The nature and extent of primary contact recreational use in federal waters is noted and reported during offshore monitoring.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code Sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

Influent monitoring is required to determine the effectiveness of pretreatment and non-industrial source control programs, to assess the performance of treatment facilities, and to evaluate compliance with effluent limitations.

Influent monitoring requirements have been carried over from the previous Order.

B. Effluent Monitoring

Effluent monitoring is required to determine compliance with the permit conditions and to identify operational problems and improve plant performance. Effluent monitoring also provides information on wastewater characteristics and flows for use in interpreting water quality and biological data.

Effluent monitoring requirements have been carried over from the previous Order. In addition, weekly monitoring for total coliform, fecal coliform, and enterococcus has been established to determine if the effluent is contributing to exceedances of water quality objectives for these parameters. Further, continuous monitoring for total residual chlorine has been established due to the Facility's plans to implement chlorination.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity testing (acute and chronic) have been established to determine compliance with the effluent limitation for chronic toxicity, and the performance goal for acute toxicity.

D. Receiving Water Monitoring

1. Core Monitoring Program for Surface Water

A monitoring program at the current discharge site has existed since 1991 and has focused on physical, chemical, and biological patterns in the region. The monitoring program underwent significant revision in 2003 to reallocate the level of effort that was in place at the time, in order to address crucial processes not addressed by earlier monitoring programs and provide a regional framework for interpreting discharge-related effects. The existing monitoring program reflects the principles expressed in the "Model Monitoring Program for Large Ocean Dischargers in Southern California" (SCCWRP, 2002). Since 2003, the following three components have constituted the Discharger's receiving water monitoring program: (1) Core Monitoring; (2) Strategic Process Studies; and (3) Regional Monitoring. These three components are needed to evaluate compliance with the permit, federal 301(h) decision criteria, and State water quality standards; and to assess the effects of the discharge on the marine environment.

There are five components to the Core Monitoring Program: general water quality monitoring; bacteriological monitoring of shoreline, kelp bed, and offshore waters;

sediment monitoring for grain size, chemistry, and benthic infauna community structure; monitoring for fish and megabenthic invertebrate communities, and contaminant body burdens of fishes; and monitoring of kelp bed canopy cover.

a. General Water Quality

The offshore and kelp bed water quality sampling program is designed to help evaluate the fate of the wastewater plume under various conditions and to determine if the water quality objectives contained in the Ocean Plan are being achieved in the receiving water.

A grid of 36 offshore stations is monitored quarterly and 8 kelp bed stations are monitored five times per month for the following parameters: salinity, temperature, density, pH, transmissivity, dissolved oxygen, ammonium ($NH4+$), and chlorophyll *a*. These parameters are measured throughout the entire water column.

General water quality monitoring requirements have been carried over from the previous Order.

b. Microbiological

Bacteria indicator sampling is required to help track the wastewater plume in federal and State offshore waters and evaluate compliance with recreational water quality standards in State waters within three nautical miles of the shoreline. In federal and State offshore waters, the nature and extent of primary contact recreational use in federal waters is noted and reported. A grid of 36 offshore stations is monitored quarterly, 8 kelp bed stations are monitored five times per month, and 8 shoreline stations are monitored weekly for the following parameters: enterococcus, total coliform, and fecal coliform. At offshore and kelp bed stations, these parameters are monitored in the water column at fixed intervals. At shoreline stations, these parameters are monitored in the surf zone using grab samples.

Microbiological monitoring requirements have been carried over from the previous Order.

c. Sediment

The physical and chemical properties of sediments and the biological communities that live in or on these sediments are monitored to evaluate potential effects of the PLOO discharge and compliance with narrative water quality standards in the Ocean Plan. The core sediment monitoring program is designed to assess spatial and temporal trends. A core set of 12 to 22 stations are monitored twice each year, in January and July, using grab samples. Twelve primary stations are located along the 98-meter depth contour and 10 secondary stations are located along the 88-meter and 116-

meter depth contours. The requirement for sampling at the secondary stations can be relaxed by the Regional Water Board and USEPA to allow the Discharger to participate in Bight-wide regional monitoring efforts. For sediment chemistry, monitored parameters include sediment grain size, metals, PCBs and chlorinated pesticides, and PAHs. Benthic community structure is evaluated using separate grab samples, in January and July.

Sediment monitoring requirements have been carried over from the previous Order.

d. Fish and Invertebrate

Twice each year, in January and July, epibenthic trawls at four trawl zone stations are used to assess the structure of demersal fish and megabenthic invertebrate communities and to evaluate compliance with narrative water quality standards in the Ocean Plan. Semiannually, in January and July, chemical analyses of fish tissues are performed on target species colleted at the four trawl zone stations and two rig fishing stations. Species targeted for analysis are selected based on their ecological and/or commercial importance. Liver tissue is monitored at trawl stations to assess general fish health. Muscle tissue is monitored at rig fishing stations annualy, in October, to assess the uptake of pollutants in fish species commonly consumed by humans in the region. Fish tissues are monitored for lipids, metals, PCBs, and chlorinated pesticides.

Fish and invertebrate monitoring has been carried over from the previous Order.

e. Kelp Bed Canopy

Annual kelp bed surveys are intended to assess the extent to which the discharge of wastes may affect the aerial extent and health of coastal kelp beds. This monitoring effort is conducted with other ocean dischargers in the San Diego Region and covers the entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary. In each annual survey, the aerial extent of the various kelp beds are photographed and compared to previous surveys; further investigation is required if significant losses are observed to persist for more than one year.

Kelp bed monitoring has been carried over from the previous Order.

E. Strategic Process Studies and Regional Monitoring Requirements

In addition to Core Monitoring activities, the Discharger is required to conduct Strategic Process Studies and participate in Regional Monitoring activities coordinated by the Southern California Coastal Water Research Project (SCCWRP).

Strategic Process Studies are an integral part of the permit monitoring program and differ from other elements of the monitoring program (e.g., core monitoring, regional monitoring, other permit special studies). They are intended to be short-term and are designed to address specific research or management issues related to receiving water monitoring that are not addressed by core and regional monitoring elements. The scope of special studies is determined by the Discharger, in coordination with the Regional Water Board Executive Officer and USEPA. Each year, the Discharger is required to submit proposals for strategic process studies for the following year's effort. Detailed scopes of work for each study are provided by the Discharger and approved by the Executive Officer and USEPA, prior to study implementation.

The intent of Regional Monitoring activities is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and best utilize the pooled scientific resources of the region. During these coordinated large-scale sampling efforts, the Discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and determine cumulative impacts of various pollution sources. Under previous permits, the Discharger participated in regional monitoring efforts in 1994, 1998, 2003, and 2008. The Discharger provides its level of effort for Regional Monitoring for Executive Officer and USEPA approval, following the procedures and schedule established for approval of Strategic Process Studies.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard conditions that apply to all NPDES permits, in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of NPDES permits, in accordance with 40 CFR 122.42, are provided in Attachment D to this Order.

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits and must be incorporated into a permit either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the permit. 40 CFR 123.25(a)(12) allows the State to omit or modify federal provisions to impose more stringent State requirements. In accordance with 40 CFR 123.25(a)(12), the State-issued permit omits provisions at 40 CFR 122.41(j)(5) and 40 CFR 122.41(k)(2); in lieu of these provisions, the State permit references California Water Code section 13387(e) because enforcement under the Water Code is the more stringent requirement. However standard provisions at 40 CFR 122.41(j)(5) and 40 CFR 122.41(k)(2) are incorporated into the federal permit as standard provisions VI.D and VI.E.

B. Special Provisions

1. Reopener Provisions

Order No. R9-2009-0001 may be reopened and modified, revoked and reissued, or terminated, in accordance with 40 CFR Parts 122, 123, 124, and 125. The Regional Water Board and USEPA may reopen the permit to modify conditions or requirements. Causes for modification include, but are not limited to, promulgation of new regulations by the State Water Board, Regional Water Board, or USEPA, and revisions to the Basin Plan. Also, specific reopener conditions are contained in the permit (e.g., for whole effluent toxicity, toxics mass emission benchmarks, regional monitoring, antidegradation, etc.).

2. Special Studies and Additional Monitoring Requirements

a. Whole Effluent Toxicity (WET)

i. Implementing provisions at Section III.C of the Ocean Plan require chronic toxicity monitoring for ocean waste discharges with minimum initial dilution factors between 100 and 350. In addition, the RPA results for this discharge show that the effluent has the reasonable potential to exceed the water quality objective for chronic toxicity. On May 4, 2003 chronic toxicity tests exceeded the existing permit limit of 205 TUc. Based on procedures in the Ocean Plan, a maximum daily limit of 205 TUc is established in the Order and monthly monitoring is carried over from the previous permit.

ii. Implementing provisions at Section III.C of the Ocean Plan allow for the establishment of acute toxicity monitoring, in addition to chronic, for ocean waste discharges with minimum initial dilution factors between 100 and 350. A performance goal for acute toxicity of 6.42 TUa is established based on "Equation 2" in Section III.C.3.b of the Ocean Plan. Semi-annual acute toxicity monitoring is carried over from the previous permit.

iii. The previous permit required the Discharger to submit a Toxicity Reduction Evaluation (TRE) workplan to the Regional Water Board and USEPA, 180 days after the permit effective date. This Order requires the Discharger to maintain an up-to-date TRE workplan and to submit an updated workplan to the Regional Water Board and USEPA, 90 days after the effective date of this Order. The TRE workplan describes steps the Discharger intends to follow if the effluent limitation for chronic toxicity (205 TUc) or the performance goal for acute toxicity (6.42 TUa) is exceeded.

iv. Similar to the existing permit, this Order provides for accelerated toxicity testing upon an exceedance of the chronic toxicity effluent limit, or an excursion above the acute toxicity performance goal. If toxicity is observed in any of the additional toxicity tests, the Discharger is required to conduct a TRE/TIE, as directed by the Regional Water Board Executive Officer or USEPA.

b. Antidegradation Analysis

In the 1995 and 2003 permits, USEPA and the Regional Water Board established annual mass based performance goals for Ocean Plan Table B parameters based on Point Loma WTP effluent data from 1990 through April 1995. For most Table B parameters, the numerical benchmarks are set below the levels prescribed for water quality based effluent limits. The benchmarks are designed to provide an early measure of changes in effluent quality which may substantially increase the mass of toxic pollutants discharged to the marine environment. Consistent with State and federal antidegradation policies, these benchmarks are intended to serve as triggers for antidegradation analyses during renewal of the permit.

Under 40 CFR 131.12, State antidegradation polices and implementation practices must ensure that: (1) existing uses and the level of water quality necessary to protect such uses are maintained and protected (Tier I requirement); and (2) where water quality is better than necessary to support the propagation of fish, shellfish, and wildlife and recreation in and on the water, the level of water quality shall be maintained and protected unless the permitting authority finds that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located; existing uses are fully protected; and the highest statutory and regulatory requirements are achieved for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control (Tier II requirement).

An analysis of compliance with the mass emission benchmarks in the existing permit is presented in Volume II, Part 3, of the application. During 2002 through 2006, the City achieved compliance with all benchmarks except for phenol (2.57 MT/yr) which was exceeded by about eight percent. Phenol is regularly detected in the Point Loma WTP effluent. According to the Discharger, phenol is a common chemical used in industrial and nonindustrial applications as solvents, disinfectants and cleaning compounds; it is also a constituent in paints, inks, and photographic chemicals. Phenol has a variety of household uses including medical and household disinfectants, pharmaceuticals, solvents and cleaners, paints, inks, and photo supplies. It is identified by the Discharger as a pollutant of concern, but does not have an existing local pretreatment limit. Industrial discharges of phenols to the sewer system are regulated by the City. Federal categorical industrial dischargers, hospitals, and laboratories are regulated by the applicant's "toxic organic management plans". Electroplating and metal finishing industries are regulated by federal total toxic organics limits. The Discharger states that these existing practices are effective in limiting industrial discharges of phenol from electroplating and metal finishing industries, hospitals, laboratories, and other significant industrial users.

Point Loma WTP influent and effluent data presented in Table 2-5, in Volume II, Part 3, of the application, demonstrate that the upward trend in phenol mass emissions is consistent and not an artifact of a few high concentrations in a limited number of samples. Historical annual average mass emissions for phenol are: 2.2 MT/yr (1990-1995), 3.3 MT/yr (1996-2001), and 2.7 MT/yr (2002-2006). During these periods, the average percent removal for phenol has improved: 17 percent (1990-1995), 20 percent (1996-2001), and 27 percent (2002-2006). During these periods, the average concentrations for phenol in the effluent are: 8.2 ug/l (1990-1995), 13.4 ug/l (1996-2001), and 11.5 ug/l (2002-2006). The Discharger has not requested changes to the mass emission benchmark or the water quality based effluent limits for phenolic compounds in the existing permit.

Based on this information, USEPA and the Regional Water Board have concluded that a full antidegradation analysis justifying the continued increase in effluent loading of phenolic compounds (non-chlorinated) to a Tier II waterbody may be necessary. For phenolic compounds (non-chlorinated), the Discharger shall conduct a thorough analysis of the projected effluent load above the mass emission benchmark level, the resulting impact to receiving water quality of the total effluent load, and opportunities for effluent load reduction through additional treatment or controls and pollution prevention. If this analysis shows that the total effluent load for phenolic compounds (non-chlorinated) produces either (1) a receiving water concentration at the boundary of the zone of initial dilution that is less than ten percent above the ambient (farfield) concentration, or (2) the receiving water concentration at the boundary of the zone of initial dilution is less than 50 percent of the Ocean Plan water quality objectives for phenolic compounds (non-chlorinated), then the resulting impact to water quality is not considered “significant” and further analysis is not required at this time. However, if the change in receiving water quality is found to be “significant” upon review by USEPA and the Regional Water Board, then the Discharger must conduct a socioeconomic analysis considering the full benefits and costs of the increased effluent loading of phenolic compounds (non-chlorinated), including environmental impacts.

3. Best Management Practices and Pollution Prevention – Not Applicable

4. Construction, Operation, and Maintenance Specifications – Not Applicable

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Treatment Plant Capacity

Order No. R9-2009-0001 establishes a requirement for a treatment plant capacity study which serves as an indicator to the Regional Water Board and USEPA of the Facility’s hydraulic capacity and potential growth in the service area.

b. Biosolids. The use and disposal of biosolids is regulated under federal and State laws and regulations at 40 CFR 503. This permit incorporates biosolids requirements under 40 CFR 503. USEPA, not the Regional Water Board, will oversee compliance with 40 CFR 503.

Title 27, CCR, Division 2, Subdivision 1, Section 20005 establishes approved methods for the disposal of collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes. Requirements to ensure the Discharger disposes of solids in compliance with State and federal regulations has been included in this Order.

c. Pretreatment Requirements

CWA Section 307 and 40 CFR 403 establish pretreatment requirements for publicly-owned treatment works which receive pollutants from non-domestic users. This Order contains pretreatment program requirements pursuant to 40 CFR 403 that are applicable to the Discharger. Also, the Order incorporates conditions for implementing urban area pretreatment program requirements under CWA Section 301(h) and 40 CFR 125.

d. Collection System. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on May 2, 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the publicly-owned treatment works or Facility that is subject to this Order, certain standard provisions are applicable as specified in Provisions, Section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006.

6. Other Special Provisions

a. Continuous Monitoring of Residual Chlorine. On November 13, 2007, the Discharger requested the ability to use sodium hypochlorite for effluent disinfection to ensure compliance with applicable State water quality standards for bacteria indicators. To ensure compliance with WQBELs for total chlorine residual, continuous monitoring is required. Within 180 days of the effective date of this permit, the Discharger shall begin continuous monitoring for total chlorine residual. Until that time, at least four grab samples per day, representative of the daily discharge, shall be collected immediately prior to entering the PLOO and analyzed for total chlorine residual. A split of each sample shall be concurrently monitored for bacteria indicator levels.

7. Compliance Schedules - Not Applicable

VIII. PUBLIC PARTICIPATION

The San Diego Regional Water Board and USEPA Region IX are jointly issuing a notice of proposed actions under the Clean Water Act and Division 7 of the California Water Code, and regulations thereunder. The Regional Water Board and USEPA are proposing to jointly reissue Waste Discharge Requirements and an NPDES permit to the City of San Diego for the E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant. The NPDES permit and Waste Discharge Requirements are based on a variance from federal secondary treatment standards at 40 CFR 133, as provided for improved discharges under CWA Section 301(h) and 40 CFR 125, Subpart G. The Regional Water Board's participation in the reissuance of a 301(h)-modified NPDES permit will ensure that all applicable State water quality standards are satisfied, and as such, the Regional Water Board intends that issuance of the permit with USEPA will serve as its certification of the federal permit under CWA Section 401. The Regional Water Board and USEPA encourage public participation in this reissuance process.

A. Notification of Interested Parties

The Regional Water Board and USEPA have notified the Discharger, interested agencies, and the public of the proposed actions, joint public hearing, and the opportunity to provide comments. Notification was provided through the San Diego Union Tribune on December 5, 2008.

B. Written Comments

The proposed actions are tentative. Beginning December 5, 2008, interested persons are invited to submit written comments concerning the Administrative Record, including the draft Order and 301(h)-modified NPDES permit and fact sheet, comments received, 301(h) permit application and ROWD, USEPA's 301(h) Tentative Decision Document, and other relevant documents. Interested persons may submit written comments during the public comment period, either in person or by mail, to the Regional Water Board and USEPA addresses, below:

Executive Officer
San Diego Regional Water Quality Control Board
Regional Board Meeting Room
9174 Sky Park Court, Suite 100
San Diego, California

Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)

75 Hawthorne Street
San Francisco, CA 94105

To facilitate consideration by the Regional Water Board and USEPA at the public hearing, written comments should be received at the Regional Water Board and USEPA offices by 5:00 p.m., on January 7, 2009. All written comments must be received by 5:00 p.m., on January 28, 2009.

C. Public Hearing

The Regional Water Board and USEPA will conduct a joint public hearing on these proposed actions during the Board meeting on the following date, time, and location:

Date: **January 21, 2009**
Time: **9:00 a.m.**
Location: **San Diego Regional Water Quality Control Board**
9174 Sky Park Court, Suite 100
San Diego, California

Interested persons are invited to attend. At the joint public hearing, the Regional Water Board and USEPA Hearing Officer will hear testimony on the proposed actions. Although oral testimony will be heard, for record accuracy, important testimony should be in writing.

The Regional Water Board will not be acting on the NPDES permit at the January 21, 2009 hearing, but will formally act on the tentative Order at a subsequent Board meeting. Upon issuance of the final Order and 301(h)-modified NPDES permit decision and response to comments, the Regional Water Board and USEPA will notify the Discharger and persons who submitted written comments, or requested notice of the final decision.

Please be aware that dates and venues may change. The Regional Water Board's Web address is http:/www.swrcb.ca.gov/rwqcb9 where the current agenda for changes in Board meeting dates and locations can be accessed.

D. Information and Copying

The documents, above, are available for public inspection at the Regional Water Board and USEPA office locations, Monday through Friday, between 8:30 a.m. and 4:30 p.m. Copying of documents may be arranged by calling the Regional Water Board at (858) 467-2952, or USEPA at (415) 972-3524.

E. Register of Interested Persons

Information and Copying": "Any person interested in being placed on the mailing list for information regarding these proposed actions should contact the Regional Water Board and USEPA, reference this facility, and provide a name, address, and phone number.

F. Waste Discharge Requirements Petitions

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

State Water Resources Control Board
Office of Chief Counsel
PO Box 100, 1001 I Street
Sacramento, CA 95812-0100

G. Appeal of Federal Permit

When a final 301(h)-modified NPDES permit is issued by USEPA, it will become effective 33 days following the date it is mailed to the Discharger, unless a request for review is filed. If a request for review is filed, only those permit conditions which are uncontested will go into effect pending deposition of the request for review. Requests for review must be filed within 33 days following the date the final permit is mailed and must meet the requirements of 40 CFR 124.19. All requests for review should be addressed to the Environmental Appeals Board (EAB) as follows. Requests sent through the U.S. Postal Service (except by Express Mail) must be addressed to the EAB's mailing address, which is:

U.S. Environmental Protection Agency
Clerk of the Board
Environmental Appeals Board (MC 1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

All filings delivered by hand or courier, including Federal Express, UPS, and U.S. Postal Express Mail, should be directed to the following address:

Environmental Appeals Board
U.S. Environmental Protection Agency
Colorado Building
1341 G Street, N.W., Suite 600
Washington, D.C. 20460

Those persons filing a request for review must have filed comments on the tentative decision and draft permit, or participated in the public hearing, except as provided in 40 CFR 124.19. Otherwise, any such request for review may be filed only to the extent of changes from the draft permit to the final permit decision.

H. Additional Information

Requests for additional information or questions regarding this order should be directed to Melissa Valdovinos of the Regional Water Board at (858) 467-2724 and Robyn Stuber of USEPA at (415) 972-3524.

Attachment G - Summary of Discharge Prohibitions contained in the Ocean Plan and Basin Plan

I. Ocean Plan Discharge Prohibitions

A. The Discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.

B. Waste shall not be discharged to designated Areas of Special Biological Significance except as provided in Chapter III.E. of the Ocean Plan.

C. Pipeline discharge of sludge to the ocean is prohibited by federal law; the discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean, is prohibited. The discharge of sludge digester supernatant directly to the ocean, or to a waste stream that discharges to the ocean without further treatment, is prohibited.

D. The by-passing of untreated wastes containing concentrations of pollutants in excess of those of Table A or Table B [of the Ocean Plan] is prohibited.

II. Basin Plan Discharge Prohibitions

A. The discharge of waste to waters of the State in a manner causing, or threating to cause a condition of pollution, contamination or nuisance as defined in Water Code Section 13050, is prohibited.

B. The discharge of waste to land, except as authorized by WDRs or the terms described in Water Code Section 13264 is prohibited.

C. The discharge of pollutants or dredged or fill material to waters of the United States except as authorized by an NPDES permit or a dredged or fill material permit (subject to the exemption described in Water Code Section 13376) is prohibited.

D. Discharges of recycled water to lakes or reservoirs used for municipal water supply or to inland surface water tributaries thereto are prohibited, unless this Regional Water Board issues a NPDES permit authorizing such a discharge; the proposed discharge has been approved by the State Department of Public Health and the operating agency of the impacted reservoir; and the discharger has an approved fail-safe long-term disposal alternative.

E. The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of the Regional Water Board. Consideration would include streamflow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if streamflow provided 100:1 dilution capability.

F. The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited, unless the discharge is authorized by the Regional Water Board.

G. The dumping, deposition, or discharge of waste directly into waters of the State, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited unless authorized by the Regional Water Board.

H. Any discharge to a storm water conveyance system that is not composed entirely of storm water is prohibited unless authorized by the Regional Water Board. [The federal regulations, 40 CFR 122.26(b)(13), define storm water as storm water runoff, snow melt runoff, and surface runoff and drainage. 40 CFR 122.26(b)(2) defines an illicit discharge as any discharge to a storm water conveyance system that is not composed entirely of storm water except discharges pursuant to a NPDES permit and discharges resulting from fire fighting activities.] [Section 122.26 amended at 56 FR 56553, November 5, 1991; 57 FR 11412, April 2, 1992].

I. The unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system is prohibited.

J. The discharge of industrial wastes to conventional septic tank/ subsurface disposal systems, except as authorized by the terms described in Water Code Section 13264, is prohibited.

K. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the State is prohibited.

L. The discharge of any radiological, chemical, or biological warfare agent into waters of the State is prohibited.

M. The discharge of waste into a natural or excavated site below historic water levels is prohibited unless the discharge is authorized by the Regional Water Board.

N. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities which cause deleterious bottom deposits, turbidity or discoloration in waters of the State or which unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.

O. The discharge of treated or untreated sewage from vessels to Mission Bay, Oceanside Harbor, Dana Point Harbor, or other small boat harbors is prohibited.

P. The discharge of untreated sewage from vessels to San Diego Bay is prohibited.

Q. The discharge of treated sewage from vessels to portions of San Diego Bay that are less than 30 feet deep at MLLW is prohibited.

R. The discharge of treated sewage from vessels, which do not have a properly functioning USCG-certified Type 1 or Type II marine sanitation device, to portions of San Diego Bay that are greater than 30 feet deep at MLLW, is prohibited.

Attachment H - Dilution Model Summary

Initial dilution for the Point Loma Ocean Outfall (PLOO) was assessed using an U.S. Environmental Protection Agency (USEPA) modeling application, Visual Plumes (UM3). UM3 is an acronym for the three-dimensional Updated Merge model for simulating single and multi-port submerged discharges. The USEPA Visual Plumes website is located at <http://www.epa.gov/ceampubl/swater/vplume/index.htm>.

The diffuser is a simple wye diffuser. The PLOO is 2,472 feet long and includes a wye (Y-shaped) diffuser with two 2,496 feet long diffuser legs. The diffuser has 416 discharge ports (208 on each leg).

A. Dilution

Initial dilution is defined in the Ocean Plan as follows:

"The process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

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

Initial dilution, as defined by the Ocean Plan, is interpreted to be when the effluent plume either surfaces or reaches its initial trapping level (level at which the density of the effluent equals that of the ambient background and the effluent no longer has upward momentum based solely on buoyancy).

Dilution is a function of various characteristics of the diffuser, effluent, and ambient background. Dilution of an effluent plume into a receiving water is dependent on the flow of effluent, the momentum of the effluent flow into the receiving water (highly dependent on the effluent flow, shape, size, and number of diffuser ports), the buoyancy of the effluent within the receiving water (highly dependent between the delta between effluent and the ambient background of salinity and temperature), the placement of diffuser ports (space between diffuser ports and directional settings of each port), and the available volume and boundaries of the receiving water.

To effectively model dilution, Visual Plumes breaks data entry into the modeling system into three main components:

1. Diffuser and Effluent Characteristics

2. An Ambient Profile

3. Special Settings

A summary of each of these components and the assumptions for each of these components while conducting the modeling effort is provided below.

B. Diffuser and Effluent Characteristics

Diffuser and effluent characteristics are necessary to determine the momentum of the effluent as it enters the receiving water, and the density of the effluent (which will affect it's buoyancy in the receiving water).

The input fields for the model are listed below with applicable explanations for the input into each field:

1. Port Diameter

In the Report of Waste Discharge (ROWD) the Discharger provided a summary of the diffuser set up, including the number of ports and their respective diameters. Visual Plumes data entry limitations include only allowing a single input for "Port Diameter". Thus, a single port diameter must be determined. This was done by taking an average port size (as cm^2) of all the ports as summarized below:

Port area for each leg

Number of Ports	Diameter (cm)	Radius (cm)	Area for port	Total Area per size
84	9.53	4.77	71.33	5991.76
70	10.8	5.40	91.61	6412.61
54	12.07	6.04	114.42	6178.71

Total # of Ports (per leg) = 208

Total Area per leg = 18583.09

Total Area of ports in wye = Total Area per leg X 2 = 37166.1724

Port area for single diffuser head just prior to wye

Number of Ports	Diameter (cm)	Radius (cm)	Area for port	Total Area
1	5.08	2.54	20.27	20.27

Total Area per Port = Total Area of ports in wye + Total Area (for single diffuser head just prior to wye) = 37186.44

Average area per port = Total Area per Port/(Total # of Ports (for each leg) X 2 + 1) = 89.18

Average radius per port = square root of (Area/3.14159)
Average radius per port = square root of (28.3856 cm)
Average radius per port = 5.328 cm
Average diameter per port = 10.6556 cm

A port diameter of 10.66 cm was entered.

2. Port Elevation

The port elevation (or height of the port from the sea bed) was not specified in the ROWD. Diffuser drawings were provided by the facility upon request. On October 27, 2008 the Discharger provided a report on dilution indicating that the elevation of the ports was 7 feet. Based on this information, a port elevation of 7 feet was entered.

3. Vertical Angle

The vertical angle is defined in the Visual Plumes manual (4th Edition) as the discharge angle relative to the horizontal with zero being horizontal, 90 being vertical upward, and -90 being vertically downward. The ROWD indicates that the ports are located on the diffuser facing opposing directions, 180 degrees away from each other. A data entry limitation of Visual Plumes is that only one vertical angle may be entered. The Visual Plumes manual suggests that a fairly simple and accurate approach to modeling such a situation is to treat the diffuser as if all ports are on one side with half the spacing. In the October 27, 2008 report the Discharger contends that modeling all the ports on one side and reducing the spacing in half over simplifies the modeling for the PLOO and results in the combined outfall plume from all outfall ports being squeezed into a significantly reduced volume. The Discharger further states that because the Ocean Plan requires initial dilution be assessed on the basis of zero ocean currents and the PLOO's high horizontal discharge velocities, no cross-merging of the plumes from either side of the diffuser will occur prior to initial dilution. Using UM3 modeling the Discharger demonstrates that the plume does not cross the diffuser centerline (which would indicate merging). A single vertical angle of 0 was used in the model.

Because the plumes from each side of the diffuser do not merge, a single representative side of the diffuser can be modeled and assumed for each individual plume on each side of the diffuser. To accurately calculate proper effluent velocity, the total flow through the diffuser must be reduced in half to accurately represent flow through a single side of the diffuser. An effluent flow of 120 MGD was used.

4. Horizontal Angle

The horizontal angle is defined in the Visual Plumes manual as the angle of the diffuser relative to the x-coordinate. Assuming that the default units (degrees) are used, zero is in the direction of the x-coordinate (flow towards the east) and 90 in the direction of the y-coordinate (flow towards the north). The ROWD indicates that the two legs of the wye diffuser extend approximately 150 degrees in separate directions (roughly one towards 255 degrees and one towards 75 degrees). A data entry limitation of Visual Plumes is that only one vertical angle may be entered. A middle direction was chosen, 180 degrees was entered into the data field. This field is important when considering currents and stream flow, both of which are not considered when modeling for ocean discharges to which the Ocean Plan is applicable. Thus, this data entry field was not expected to have an effect on the final initial dilution.

5. Number of Ports

Based on the number of ports specified in the ROWD (and summarized in the Port Diameter portion of this Attachment), 208 was entered into the data field to account for each side of the diffuser.

6. Port Spacing

The ROWD indicated that the ports were approximately 7.33 meters apart. This value did not include an additional discharge port located on the diffuser just upstream of the wye structure. Thus using the total distance of the length of the diffuser on which the ports are located, the port spacing was recalculated and determined to be 7.3 meters.

7. Acute Mix Zone/Chronic Mix Zone

This value is not relevant to the final initial dilution calculations.

8. Port Depth

The ROWD indicates that the length of diffuser on which diffuser ports are located, is between 93.3 meter to 95.5 meters deep under the ocean surface. An average between these two values was taken, and 94.35 meters was entered into the data field.

9. Effluent Flow

The maximum monthly average flow permitted for the Discharger is 240 million gallons per day (MGD). The Discharger currently discharges a monthly average flow significantly below this value which would result in a greater (and less conservative) dilution value. Because the Discharger will continue to be capable of discharging up to 240 MGD, and this is the most conservative value to use while calculating dilution, 240 MGD was considered to be the applicable discharge volume through the outfall. Due to the modeling limitations explained in Section

B.3 of this summary, half the flow was used to represent the appropriate effluent flow from each side of the diffuser.

10. Effluent Conductivity

Conductivity data was available from January 2002 through December 2007. Higher levels of salinity in the effluent result in a less buoyant effluent. The highest monthly average conductivity was used, 3.125 mmho/cm was entered into the data field.

11. Effluent Temperature

Temperature data was available from January 2002 through December 2007. The smaller the Δ between the effluent and receiving water, the less dilution is likely to occur. Receiving water temperatures are significantly lower than the effluent temperature at Discharge Point No. 001. Thus, a lower effluent temperature is likely to result in lower dilution. The lowest monthly average temperature of 21.1 °C was entered into the data field.

12. Effluent Concentration

This data field is for calculating "effective dilution" and does not have an effect on the final initial dilution calculated. However a value must be entered into this field for the model to run, so "20 ppm" was chosen.

C. Ambient Profile

An ambient profile is a conservative profile of the receiving water. This profile includes components of density (temperature and salinity), current (which is always set to zero when running models for the Ocean Plan), and a far-field diffusion coefficient. The ambient profile takes into consideration the natural stratification of the receiving waters, allowing for the entry of various data points at varying depths. The model is capable (and this feature was utilized during the modeling effort for Point Loma Ocean Outfall) of extrapolating data for the depths that were not entered based on the data that is entered.

Receiving water monitoring of temperature and salinity was established during the current permit term at the following monitoring locations which are representative of the receiving water at the point of discharge:

- F-29
- F-30
- F-31

Monitoring was conducted quarterly (January, April, July, October).

Part C.3.d of the Ocean Plan states:
"For the purpose of this Plan, minimum initial dilution is the lowest average initial dilution within any single month of the year."

Using data from 2003 through 2007, the most conservative monthly profile was determined to be January. In the October 27, 2008 report from the Discharger, the Discharger provided additional depth data for January 2003, 2004, 2005, 2006, and 2007. The following dilutions for January were calculated by the Discharger using Visual Plumes and all available data:

Year	Dilution
January 2003	228.3
January 2004	249.8
January 2005	244.1
January 2006	241.1
January 2007	225.5

Based on the Discharger's results, the ambient profile for January 2007 was the most conservative. The following ambient profile for January 2007 was used to calculate the final initial dilution by the Regional Water Board using Visual Plumes:

Depth (m)	Temperature (°C)	Density (sigma theta)
1	14.86	24.88
7	14.85	24.89
13	14.80	24.89
19	14.74	24.91
25	14.57	24.94
31	14.27	25.00
37	13.67	25.11
43	13.25	25.22
49	12.95	25.29
55	12.59	25.39
61	12.29	25.45
67	11.88	25.51
73	11.77	25.55
75	11.75	25.55
81	11.60	25.61
87	11.46	25.70
93	11.29	25.77
97	11.03	25.86

Data was extrapolated for depths at which no data was available.

1. Far-field Diffusion Coefficient

The Visual Plumes manual recommends the use of 0.0003 m0.67/s2. This value was used in the data field as a constant (not extrapolated as the ambient temperature and density were).

D. Special Settings

1. UM3 Tidal Pollutant Buildup Parameters

This field is used to calculate “effective dilution”, which was irrelevant to the PLOO modeling effort.

2. Diffuser Port Contraction Coefficient

The shape of the diffuser ports was not specified in the ROWD. Upon request the Discharger indicated that the diffuser ports are sharp-edged cylinders. Thus, a diffuser port contraction coefficient of 0.61 was used as recommended in the Visual Plumes manual.

3. Standard Light Adsorption Coefficient

The value of 0.16 is recommended in the Visual Plumes manual as a conservative value. This is not relevant to final initial dilution, and is for the Mancini bacteria model applications of the model.

4. Far-field Increment (m)

This value controls the number of lines output by the Brooks far-field algorithm. A small value produces more lines and graphic output than large values. A value between 100 to 1000 m is recommended by the Visual Plumes manual. This field has little effect on the final calculated initial dilution, a value of 100 m was used in the data field.

5. UM3 Aspiration Coefficient

This is the rate at which ambient fluid is entrained (diluted) into the plume. The default value of 0.1 is an average that is rarely changed. A larger value causes more rapid plume spreading and affects other characteristics, like plume rise. The default value of 0.1 was used in the data field.

6. Far-field Diffusivity Option

As recommended by the Visual Plumes manual, a 4/3 Power Diffusivity was chosen for this field because the discharge is occurring in open water.

E. Final Results

Four model runs were conducted using the data input specified above, one for each ambient profile (January, April, July, and October). This provided seasonal dilution values (expressed as trapping levels) when considering worst case scenarios (most conservative – high flow, high effluent salinity, low effluent temperature, etc.)

A summary of the modeling result is included below and has been copied directly from the Visual Plumes text output.

The local maximum height of rise for January 2007 was calculated to be 227.2:1 (as compared to 225.5 provided by the Discharger). The dilution provided in Order No. R9-2002-0025 is 204:1. The Discharger has recommended retaining the previously applied initial dilution value of 204:1 as more appropriate and representative of PLOO minimum month initial dilution. Because the Discharger has not requested additional dilution, a dilution of 204:1 is applied to the Discharger from PLOO without consideration of additional dilution.

Should the State determine, pursuant to 40 CFR 124.55, that a more stringent initial dilution value is appropriate to assure compliance with water quality standards, the final federal permit will be revised to reflect that initial dilution value.

JANUARY 2007

UM3. 11/14/2008 12:14:13 PM
Case 1; ambient file C:\Plumes\January additional data.001.db; Diffuser table record 2: ----------------------------------

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-den	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.0	0.0	32.65	14.86	10.0	2.0	2.0	40.0	0.0003	24.22
1.0	0.0	0.0	32.66	14.86	10.0	2.0	2.0	40.0	0.0003	24.22
7.0	0.0	0.0	32.67	14.85	10.0	2.0	2.0	40.0	0.0003	24.23
13.0	0.0	0.0	32.67	14.8	10.0	2.0	2.0	40.0	0.0003	24.24
19.0	0.0	0.0	32.69	14.74	10.0	2.0	2.0	40.0	0.0003	24.28
25.0	0.0	0.0	32.73	14.57	10.0	2.0	2.0	40.0	0.0003	24.34
31.0	0.0	0.0	32.81	14.27	10.0	2.0	2.0	40.0	0.0003	24.46
37.0	0.0	0.0	32.95	13.67	10.0	2.0	2.0	40.0	0.0003	24.7
43.0	0.0	0.0	33.09	13.25	10.0	2.0	2.0	40.0	0.0003	24.89
49.0	0.0	0.0	33.18	12.95	10.0	2.0	2.0	40.0	0.0003	25.02
55.0	0.0	0.0	33.31	12.59	10.0	2.0	2.0	40.0	0.0003	25.19
61.0	0.0	0.0	33.39	12.29	10.0	2.0	2.0	40.0	0.0003	25.31
67.0	0.0	0.0	33.47	11.88	10.0	2.0	2.0	40.0	0.0003	25.45
73.0	0.0	0.0	33.52	11.77	10.0	2.0	2.0	40.0	0.0003	25.51
75.0	0.0	0.0	33.52	11.75	10.0	2.0	2.0	40.0	0.0003	25.51
81.0	0.0	0.0	33.6	11.6	10.0	2.0	2.0	40.0	0.0003	25.6
87.0	0.0	0.0	33.71	11.46	10.0	2.0	2.0	40.0	0.0003	25.71
93.0	0.0	0.0	33.8	11.29	10.0	2.0	2.0	40.0	0.0003	25.82
97.0	0.0	0.0	33.92	11.03	10.0	2.0	2.0	40.0	0.0003	25.95

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-con	Temp	Polutnt
(cm)	(ft)	(deg)	(deg)	()	(m)	(m)	(m)	(m)	(MGD)	(mmho/cm)	(C)	(ppm)

10.66	7.0	0.0	180.0	208.0	7.3	400.0	400.0	94.35	120.0	3.125	22.6	20.0

Simulation:
Froude number: 31.49; effleunt density (sigma-T) -0.827; effleunt velocity 4.643(m/s);

Step	Depth (m)	Amb-cur (m/s)	P-dia (cm)	Polutnt (ppm)	4/3Eddy (ppm)	Dilutn ()	x-posn (m)	y-posn (m)
0	94.35	0.0	8.326	20.0	20.0	1.0	0.0	0.0; stream limit reached;
20	94.35	0.0	12.2	3.626E+6	3.626E+6	1.473	-0.0977	0.0;
40	94.35	0.0	18.07	6.205E+6	6.205E+6	2.176	-0.244	0.0;
60	94.35	0.0	26.8	8.072E+6	8.072E+6	3.221	-0.461	0.0;
80	94.34	0.0	39.77	9.350E+6	9.350E+6	4.774	-0.784	0.0;
100	94.32	0.0	59.0	1.001E+7	1.001E+7	7.082	-1.264	0.0;
120	94.25	0.0	87.3	1.017E+7	1.017E+7	10.51	-1.974	0.0;
140	94.02	0.0	127.5	1.018E+7	1.018E+7	15.59	-2.996	0.0;
160	93.58	0.0	167.4	1.013E+7	1.013E+7	21.24	-4.044	0.0;
180	92.91	0.0	203.4	1.012E+7	1.012E+7	27.53	-5.037	0.0;
200	91.81	0.0	243.0	1.014E+7	1.014E+7	36.27	-6.113	0.0;
220	89.8	0.0	299.3	1.019E+7	1.019E+7	51.64	-7.415	0.0;
240	86.73	0.0	379.1	1.019E+7	1.019E+7	76.73	-8.754	0.0;
260	82.64	0.0	492.1	1.012E+7	1.012E+7	114.0	-10.03	0.0;
280	77.09	0.0	680.2	-9.058E+14	-9.058E+14	169.4	-11.41	0.0;
281	76.76	0.0	693.5	4.435E+15	4.435E+15	172.8	-11.49	0.0; trap level;
284	75.73	0.0	737.6	-7.016E+17	-7.016E+17	183.4	-11.73	0.0; merging;
300	69.22	0.0	1402.1	-1.040E+33	-1.040E+33	225.1	-13.6	0.0;
301	69.1	0.0	1445.7	3.961E+33	3.961E+33	225.5	-13.65	0.0; begin overlap;
320	68.05	0.0	2153.4	-3.741E+37	-3.741E+37	227.1	-14.17	0.0;
340	67.73	0.0	2782.0	-1.321E+24	-1.321E+24	227.1	-14.44	0.0;
360	67.59	0.0	3293.5	5.591E+6	5.591E+6	227.2	-14.6	0.0;
380	67.53	0.0	3670.1	1.000E+7	1.000E+7	227.2	-14.73	0.0;
400	67.5	0.0	3898.7	1.000E+7	1.000E+7	227.2	-14.83	0.0;
418	67.49	0.0	3971.5	1.000E+7	1.000E+7	227.2	-14.92	0.0; local maximum rise or fall;

```
 420    67.49     0.0   3971.8 1.000E+7 1.000E+7    227.2   -14.93     0.0;
 440    67.51     0.0   3888.3 1.000E+7 1.000E+7    227.2   -15.02     0.0;
 460    67.54     0.0   3653.7 1.000E+7 1.000E+7    227.2   -15.13     0.0;
 480    67.62     0.0   3279.6 1.000E+7 1.000E+7    227.2   -15.26     0.0;
 500    67.78     0.0   2784.2 1.000E+7 1.000E+7    227.2   -15.43     0.0;
 520    68.14     0.0   2192.9 1.000E+7 1.000E+7    227.3    -15.7     0.0;
 540    69.32     0.0   1553.6 1.001E+7 1.001E+7    228.8   -16.25     0.0;
 545    70.04     0.0   1407.3 1.007E+7 1.007E+7    231.3    -16.5     0.0; end overlap;
 560    78.67     0.0   1207.8-9.409E+20-9.409E+20    273.4   -18.55     0.0; trap level;
 567    82.43     0.0   1785.2 3.555E+28 3.555E+28    291.9   -19.45     0.0; begin overlap;
 580    83.22     0.0   2673.0-5.295E+31-5.295E+31    292.9   -19.75     0.0;
 600    83.55     0.0   3850.3-1.317E+16-1.317E+16    292.9   -19.93     0.0;
 605    83.58     0.0   4118.3-8.117E+12-8.117E+12    292.9   -19.96     0.0; bottom hit;
 620    83.66     0.0   4851.8 3.657E+6 3.657E+6    293.0   -20.03     0.0;
 640    83.71     0.0   5647.2 1.000E+7 1.000E+7    293.0    -20.1     0.0;
 660    83.73     0.0   6209.4 1.000E+7 1.000E+7    293.0   -20.15     0.0;
 680    83.74     0.0   6519.6 1.000E+7 1.000E+7    293.0    -20.2     0.0;
 692    83.74     0.0   6580.5 1.000E+7 1.000E+7    293.0   -20.23     0.0; local maximum rise or fall;
4/3 Power Law.  Farfield dispersion based on wastefield width of     582.63 m
   conc  dilutn   width distnce    time
  (ppm)            (m)      (m)     (hrs) (kg/kg)   (s-1)   (m/s)(m0.67/s2)
 1.00E+7   294.3   583.8   100.0  0.0111    10.0     2.0     2.0 3.00E-4
 1.00E+7   294.0   585.3   200.0   0.025    10.0     2.0     2.0 3.00E-4
 1.00E+7   293.9   586.8   300.0  0.0389    10.0     2.0     2.0 3.00E-4
 1.00E+7   293.8   588.4   400.0  0.0527    10.0     2.0     2.0 3.00E-4
count: 4
 ;
12:14:16 PM. amb fills: 2
```

B. Kelley

WWESCO

WORLDWIDE ENGINEERING SERVICES COMPANY

3451 TRUMBULL STREET
SAN DIEGO CA USA 92106
TEL 1 619 223-5782
FAX 1619 223-8939

SUPPORTING DOCUMENT 6

Facsmile Cover Sheet

Date: 12-5-2008 Time: ____________

To: JOHN ROBERTUS - EXEC. OFFICER

Company: SAN DIEGO REGIONAL WTR. BOARD

Fax Number: 858-571-6972

From: JIM GILHOOLY (PRES.)

at WWESCO

SUBJECT ________ PT. LOMA WATER/SEWAGE PLANT

Number of copies being transmitted:
(including this sheet) ________

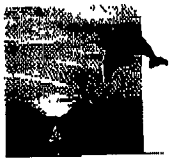
REF. 3RD. WAIVER ON SUBJECT FACILITY.

Our Fax number is 1 619 223-8939
" Tel " 1-619-223-9768

Comments or special instructions:

SEE ENCLOSURES

Doc Scanned On: 12/8/08
M. Carvajal Time: 4:15



Mr. James Gilhooly
3451 Trumbull St
San Diego, CA 92106

James Gilhooly
3451 Trumbull Street
San Diego, CA 92106

Subject: The Saga of San Diego's Third Waiver Request to the Environmental Agencies

A dichotomy exists between the City of San Diego and the Environmental Protection Agencies. (E.P.A.) On the one hand the City continually expounds to the Agencies the Water/ Sewage Plant's community values, neighborhood policies and overall, "Green Operation", to promote and sell the operations of the Plant. While on the other hand the City continues to seek waiver after waiver in order to run the Plant below Federal Standards on water pollution.

Additionally coat tailing on this waiver request, a new Methane Gas Processing and Transportation System is planned for 2009. This Methane Gas Project will utilize Monster Air Polluting Gas Tank Trucks to transfer this volatile Gas to satellite locations on poorly maintained roads that are not classified for heavy construction traffic. This will cause residents in Point Loma, Cabrillo Recreation Center and other densely populated areas around the City of San Diego, Safety concerns, additional Noise and Air Pollution, as well as the ongoing Water Pollution discharging into the Ocean.

The irony of all this is that once again, residents and future generations will suffer the pollution's effects of short sighted decisions by the City and also pick up the tab;

Since:

1) The City of San Diego will be subject to excessive E.P.A. fines and heavy litigation expenses if the waiver request is granted.

2) The Methane Gas Project is being subsidized by the following Grants:
  a) California Self Generation Program.
  b) Federal Renewal Energy Tax Credits.
  c) U.S. Department of Defense Climate Change Program.

3) The City/Developer Contract price is around $684.00 per day for 1,100,000 cubic ft. of Methane Gas. Based on market value of gas, this sounds like another City welfare program gift to the developer.

Sincerely,

James Gilhooly

James Gilhooly

Suggestions:

The City of Los Angeles Municipal Water/Sewage Plant historically discharged polluted water/sludge through an Ocean out fall into Santa Monica Bay. By construction of a full Secondary Treatment it was possible not only to cease the Ocean discharge but to produce sufficient electrical power from Anaerobic Digester Gas, (Methane) to operate the treatment facilities.

The City of San Diego might benefit from checking the Los Angeles system and eliminate the waiver hassle every five years, not to mention the excessive fines.

GENERAL COMMENT

WAIVER GRANTED ON "VINTAGE" - "BONUS" DATA AND INFORMATION SUBMITTED BY THE CITY OF SAN DIEGO FROM QUESTIONABLE SOURCES PAID LARGE FEES TO SUPPORT WAIVER APPLICATION

NO INDEPENDENT VERIFICATION OF DATA.

CUMULATIVE POPULATION GROWTH IN CITY AND SOME OTHER 15 AGENCIES NOT CONSIDERED OVER SOME 13 YEARS SINCE INITIAL WAIVER.

E.P.A. DID NOT ADDRESS VIOLATIONS OR FINES

E.P.A. DID NOT ADDRESS WHAT CORRECTIVE ACTIONS CITY HAD TO TAKE OVER NEXT FIVE(5) YEARS TO MEET FEDERAL STANDARDS.

THE ENTIRE PROCESS LACK CREDIBILITY

Jim Gilhooly

REGISTERED PROFESSIONAL ENGINEER
JAMES GILHOOLY
No. 2770
Exp.
QUALITY
STATE OF CALIFORNIA

THE HYPERION ENERGY RECOVERY SYSTEM: INNOVATIVE TECHNOLOGY FOR MUNICIPAL SLUDGE MANAGEMENT AND POWER GENERATION

INTRODUCTION

The City of Los Angeles has historically discharged sludge produced at the Hyperion Treatment Plant (HTP) through an ocean outfall into Santa Monica Bay. Through construction of the Hyperion Energy Recovery System (HERS), it will be possible for the City to not only cease the ocean discharge of sludge, but also to produce more than sufficient electrical power to operate the treatment facilities.

The Hyperion Energy Recovery System concept was developed as part of the 201 Sludge Management Facilities Plan for the Los Angeles/Orange County Metropolitan Area, also know as the LAOMA Project.

In March of 1980, the City of Los Angeles, State of California and the US EPA entered into a Consent Decree to implement the LAOMA Project recommendations and terminate ocean discharge of sludge from HTP.

After completion of the HERS Facilities Plan in early 1981, design of the HERS Project commenced immediately, using the combined forces of the City and its consultant, the Joint Venture of James M. Montgomery, Consulting Engineers, Inc. and the Ralph M. Parsons Company. The design was completed in December 1982. Construction started in 1983 and it is near completion. Presently, the HERS facilities are in various stages of commissioning.

EXISTING TREATMENT FACILITIES

The City of Los Angeles provides sewerage services to approximately 3.5 million persons living in a 1554 sq km (600 square mile) service area. On the average, 1,589,700 m^3/d (420 mgd) of wastewater from this service area is treated at the HTP, located on a 58 hectare (144 acre) site adjacent to the Pacific Ocean. All influent flows to the HTP receive primary treatment. Presently, secondary treatment is provided only to 378,500 m^3/d (100 mgd) of flow. (As a result of a recent US EPA decision, the City is making provisions for full secondary treatment.)

All wastewater receives a minimum of primary treatment prior to being discharged to Santa Monica Bay through a 8 km (five-mile outfall at 61 m (200 ft) of depth.

Sludges from primary and secondary treatment operations are anaerobically digested. The sludge is screened, mixed with secondary effluent at a ratio of 3 liter effluent/liter sludge, and discharged through an 11.3 km (7 mile) long outfall to the head of a submarine canyon at a depth of 100 m (300 feet).

Methane produced from anaerobic digestion is used in internal combustion engines on the plant site which generate electricity and drive aeration blowers for the activated sludge system.

HERS PROCESS DESIGN CONCEPT

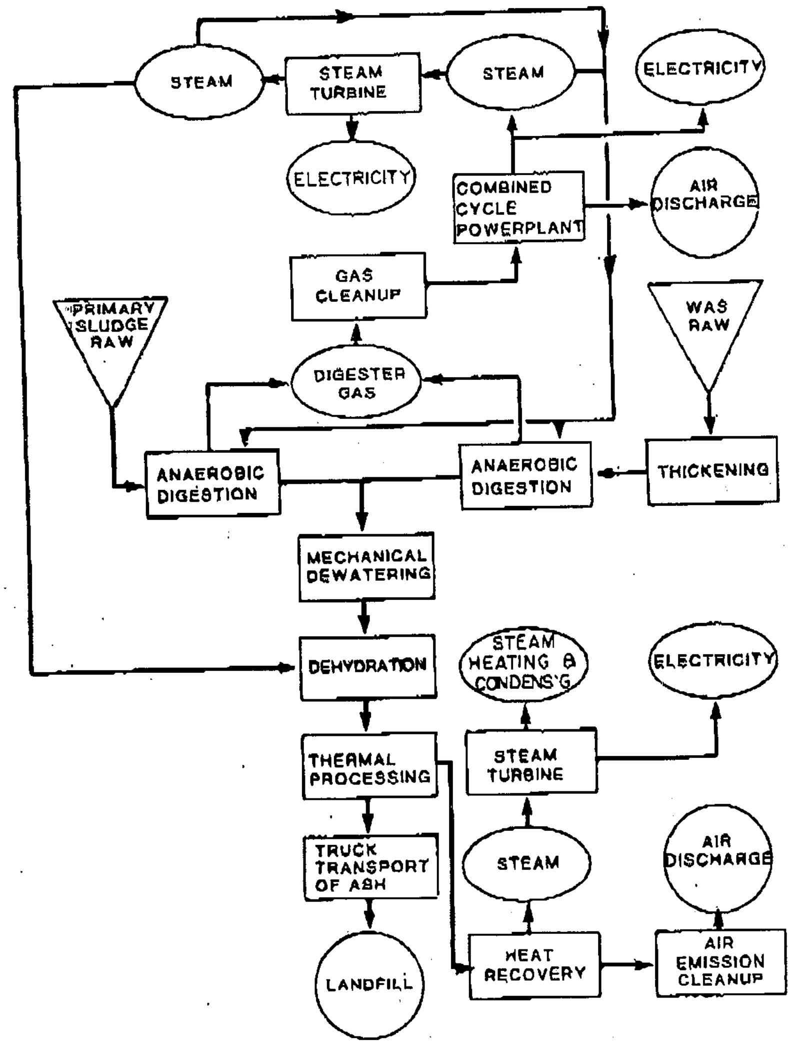
The HERS Project employs innovative process design concepts and state-of-the-art technology to maximize energy recovery, while meeting stringent environmental constraints, in the disposal of sludge. Its design is based on a solids loading of 367 dry t/d (406 dtpd) of raw primary and waste activated sludge. Through the project this quantity is reduced to less than 109 t/d (120 tpd) of ash while generating 25 megawatts (MW) of power, and producing sufficient steam to meet process requirements.

The HERS process schematic diagram is shown on Figure 1. Waste activated sludge is thickened and combined with primary sludge prior to anaerobic digestion. Approximately 240 dry t/d (265 dtpd) of digested sludge will be centrifugally dewatered and then processed to a sludge derived fuel powder (SDF) employing the Carver-Greenfield multi-effect evaporation process (C-G Process). SDF will be thermally processed in fluidized bed combustors for energy recovery and volume reduction. Recovered energy in the form of a high quality steam, will be used in a steam turbine generator for power generation.

Intermediate solids storage facilities are provided at four points at the process train: 1 day storage in the digester; 2.2 days storage of centrifuge wet cake; 2 days of SDF storage; and 3 days of ash storage. These facilities will assist in equalizing process loading and provide additional backup in the event of a temporary process shutdown.

Digester gas will be scrubbed for H_2S removal and used as fuel in a gas turbine, combined-cycle power generation system. Heat recovery steam generators will produce high and low pressure steam for process requirements and to generate additional power.

Air pollution control systems will be provided to ensure compliance with the South Coast Air Quality Management District (SCAQMD) requirements. Processes employed include particulate removal by multi-clone and fabric filters (bag house), NO_x control through temperature



SCHEMATIC DIAGRAM OF THE HERS PROJECT
FIGURE 1

controlled combustion, and SO_x removal by wet chemical scrubbing, and water injection and catalytic converters on gas turbine generators.

CARVER-GREENFIELD PROCESS DESCRIPTION

The C-G process was developed specifically for dehydration of solids suspensions. There are over 70 installations around the world, handling primarily industrial slurries and sludges. Its application to municipal sludges, however, is relatively recent. The process is proprietary to Dehydro-Tech Corporation, East Andover, NJ.

The C-G process employs multiple-effect evaporation to dry the sludge. The general principle on which the process is based is that vapor recovered from one effect is used as the heating medium for the next effect. To fluidize the sludge solids, the C-G process utilizes a carrier oil, thus eliminating transport problems associated with handling of low moisture contact sludge. The carrier oil also prevents scaling, inhibits corrosion, and enhances heat recovery. In earlier designs the C-G process used heavy oils, such as tallow or fuel oil. Complete recovery and reuse of the carrier oil was not a major concern. In some plants, up to 20% loss of the carrier oil in the final product was not uncommon. In recent years however, use of a "light oil", similar to a diesel fuel, with almost complete recovery and recycle, is replacing the heavy oil technology. Carrier oil is selected on the basis of its boiling point range, its consistency, and availability. Oils with a boiling point range of 182°C to 215°C (360°F to 420°F) are considered suitable. Design of the HERS C-G process is based on AMSCO 140 solvent oil, a product of the Union Oil Co.

The HERS C-G process includes the following major processes:

- Fluidization
- Evaporation
- Deoiling

FLUIDIZATION

The dewatered sludge cake from the centrifuges, having a solids content of approximately 20%, is fed into a large fluidizing tank (providing a 20 minute residence time) where it is mixed with and suspended in the carrier oil on a weight ratio of 6:1 oil to fresh solids. A portion of the slurry of dry solids and recovered oil from the C-G process, is also recycled to the fluidizing tank to increase the solids content to about 33% to prevent operational problems including a "gummy phase" in the evaporation system.

EVAPORATION

Water evaporation is accomplished in a four-effect system operated in a counter current flow mode. Sludge is fed into the first stage (fourth effect) and steam to initiate the evaporation is fed into the four stage (first effect). The heat exchangers are of a shell-and-tube type and are operated in a forced-flow recirculation mode. Stages 1 through 3 operate under vacuum while pressure in the fourth stage approaches atmospheric condition. To maintain vacuum in the system, the first stage is connected to a vapor condensing vacuum pump system. Each stage is designed to evaporate approximately 25% or 4990 kg/hr (11,000 lb/hr) of incoming water. The process steam, 1138 kN/m^2 (165 psia) saturated, is supplied from the HERS cogeneration facility.

DEOILING

The water-free oil-solids slurry from the evaporation system is divided into two streams. One stream is recycled back to the fluidizing tank, and the other stream is subjected to a deoiling process to separate oils from the solids. This is accomplished in two stages, the first of which is centrifuging where approximately 85% of the oil is removed from the slurry. In the second step called hydroextraction, the centrifuge cake is heated under a vacuum. Two hydroextractors in series are used, both are jacketed, indirect steam dryers with interior heated screws to move and agitate the drying solids. The hydroextractors remove the remaining oil from the solids. The dry product, which contains less than 2% water and about 0.15% carrier oil, is then cooled to under 93°C (200°F), weighed, and pneumatically transported to storage silos. The oil recovered from the hydroextractors is recycled back to the evaporation system. The centrate from the centrifuge is fed to an oil distillation system for further treatment.

SLUDGE COMBUSTION FACILITY

A fluidized bed reactor will be used for gasification of dry sludge fuel produced in the C-G, drying process. Gas produced in the fluidized bed will be burned using overbed air addition and a staged combustion afterburner. The fluidized bed reactor is designed to gasify dried sludge solids in powder form, as well as sludge oil. The powder will be injected into the fluidized sand bed with transport air. Multiple points for inbed feeding of powdered fuel are provided to assure a uniform distribution of fuel and air. Sludge oil will be introduced directly into the bed through a system of small diameter pipes located along the periphery of the reactor.

The sand bed is fluidized by a separate stream of fluidizing air. Feed air and fluidizing air together form the primary "in bed" air for combustion and are designed to supply 28 to 45 percent of theoretical stoichiometric air requirements for combustion. The system can vary air addition to improve operation flexibility and control bed temperature. Use of overbed air to partially combust the gas prior to the afterburner has been demonstrated to reduce NO_x

emissions compared to use of the afterburner alone. A system to supply an additional 20 to 30 percent of stoichiometric requirements to the fluidized bed reactor is included in the design. As a result overall air supply in the freeboard can be increased to 80 percent of the stoichiometric requirement.

Gas from the fluidized bed reactor freeboard will be ducted to a two stage afterburner. The afterburner is composed of two separate sections: a first section where combustion air is added in a staged manner, and a second section following final air addition which provides for burnout of CO and hydrocarbons. Combustion air addition is staged along the length of the first afterburner section. The balance of the stoichiometric air requirement is introduced at the entry point to the first afterburner, bringing the total air supply to a near 100 percent stoichiometric condition. The air addition section of the afterburner is designed for a gas residence time of 2.5 seconds. Final air addition to the second afterburner will increase the stoichiometry to 135 percent and will maintain an exhaust O_2 content between 4.5 and 6.5 percent to assure low concentrations of both NO_x and CO.

Flue gas leaving the fluidized bed reactor and the afterburner will have heat extracted in a boiler using an economizer, the boiler proper, and superheater sections. Each boiler unit will produce 22,680 kg/hr superheated steam at 43.6 kg/sq m pressure and 400°C temperature. Following the boiler, flue gas flows to a baghouse for emission control purposes. A portion of the flue gas leaving the baghouse at 204°C temperature will be recirculated through the fluidized bed reactor and through the afterburner to maintain a temperature of 954°C in the fluidized bed reactor and afterburner to minimize NO_x production.

COMBINED CYCLE COGENERATION FACILITY

The combined cycle cogeneration system takes steam from the fluidized bed combustion process and digester gas from the HTP anaerobic digesters and produces electrical energy and process steam. The system consists of a condensing steam turbine and four gas turbines.

The steam turbine will take steam from the waste heat boilers in the Sludge Combustion Facility and produce approximately 11 MW of power. Steam will be expanded in this condensing unit with three stages of automatic extraction for deaeration and feedwater heating.

The gas turbines will produce a nominal 12.8 MW of power through the combustion of approximately 2500 m^3/hr of digester gas. The system is designed for three units to be operational with the fourth available for a standby as well as for handling peak loads. About 75% of the fuel energy supplied to the gas turbines exits with the high temperature exhaust. Heat is recovered through individual heat recovery steam generators on each unit. Steam is generated at two pressure levels. High pressure steam is expanded in a back pressure steam turbine producing about 2.4 MW of electrical power. The resultant low pressure steam satisfies all process demands for digester heating and Carver-Greenfield drying operations.

AIR POLLUTION CONTROL SYSTEMS

In the design of the HERS project, it has been necessary to conform with the regulations of the South Coast Air Quality Management District for air emissions. Through the use of advanced air pollution control concepts and emissions "off sets" gained through the retirement of the existing IC engines and digester gas flaring system, it has been possible to develop a process which will comply with applicable regulations.

EMISSIONS CONTROL FOR SLUDGE COMBUSTION

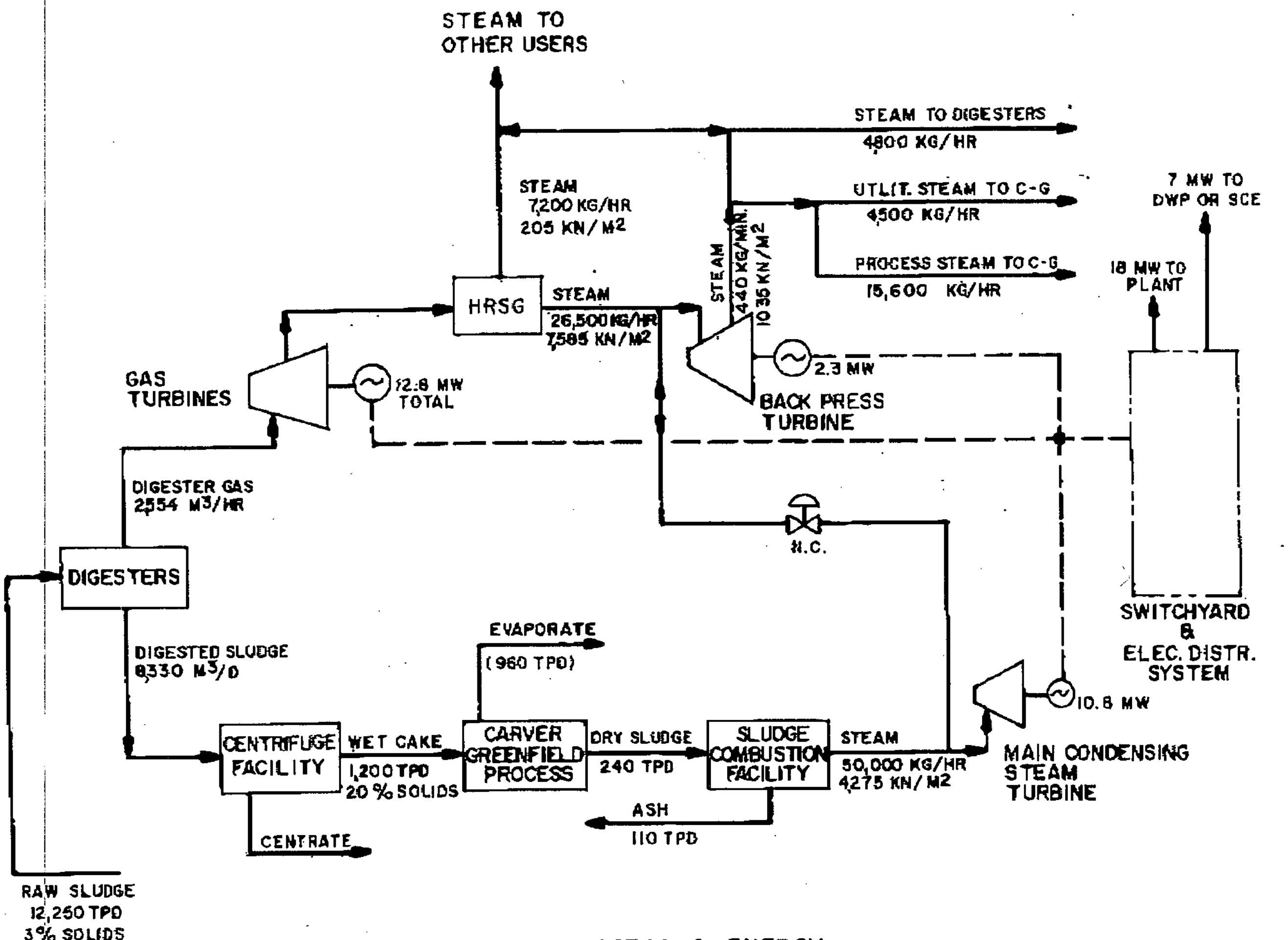
NO_x control will be achieved through control of combustion at a temperature of 954°C. In addition, each combustor-boiler train will be followed by a separate air pollution control train which will include a unit of multi-clone, a baghouse filtering unit, and a SO_2 scrubber.

Solid particles will be collected and removed from the fluidized bed reactor, the afterburner and the boiler. Gases leaving the boiler pass through a dry multi-clone to remove a further quantity of solid particulates.

The gases leaving the cyclone collector are delivered to a fabric filter baghouse to filter out the leftover solid particulates. A jet pulse method of bag cleaning will be used and will incorporate provisions to allow uninterrupted flow of the combustion gases with off-line cleaning of one set of bags at a time by the jet pulse method.

A two-stage, wet scrubbing system will be used for control of acid gases and condensible particulates. The system will use sodium hydroxide as the scrubbing liquor and is located downstream of the baghouse. The caustic system was selected because it does not require solids handling equipment such as slakers and slurry mixers; avoids the maintenance and plugging problems of calcium scrubbers; had proven reliability at high efficiencies; and does not produce a sludge requiring dewatering and landfilling. A waste liquor containing soluble salts will be formed which can be discharged to the treatment plant for disposal. Utilization of plant effluent and its alkalinity is provided to minimize caustic utilization.

Provisions have been made for future installation of a limestone bed for sulfur emission control and a thermal DENOX system utilizing ammonia injection if necessary.



HERS PROCESS & ENERGY FLOW SCHEMATIC
FIGURE 2

Emission Control for Combined Cycle Cogeneration

Principal emission control systems employed in the Combined Cycle Cogeneration Facilities are H_2S removal for SO_x control, catalytic converters, and water injection to minimize NO_x production. Removal of the H_2S is desirable to limit the quantity of SO_x formed during gas combustion in the turbine generators, reduce the corrosive effects of the gas on rotating elements, and protect equipment from damage due to presence of entrained solids and liquid in the digester gas. The scrubbing system consists of a venturi absorber and a contactor/absorber column. In the venturi, the gas stream is wetted with a scrubbing solution containing a metallic reagent at the proper pH to convert the gaseous H_2S into its aqueous phase where it ionizes and the sulfur ions oxidize producing elemental sulfur. The entrained liquid is removed from the cleaned gas in the contactor/absorber column. This spent scrubber liquor is then treated in oxidizer tanks to regenerate the metallic reagent for recirculation and to remove additional contaminants.

Water injection is the method currently employed by most manufacturers of large utility-type gas turbines for NO_x control because of its simplicity and reliability. Water is injected into the combustion can to mix with the reacting gases. Because the fluid is inert, it dilutes the reacting gases and reduces the combustion temperature, thereby reducing NO_x production.

HERS ENERGY BALANCE

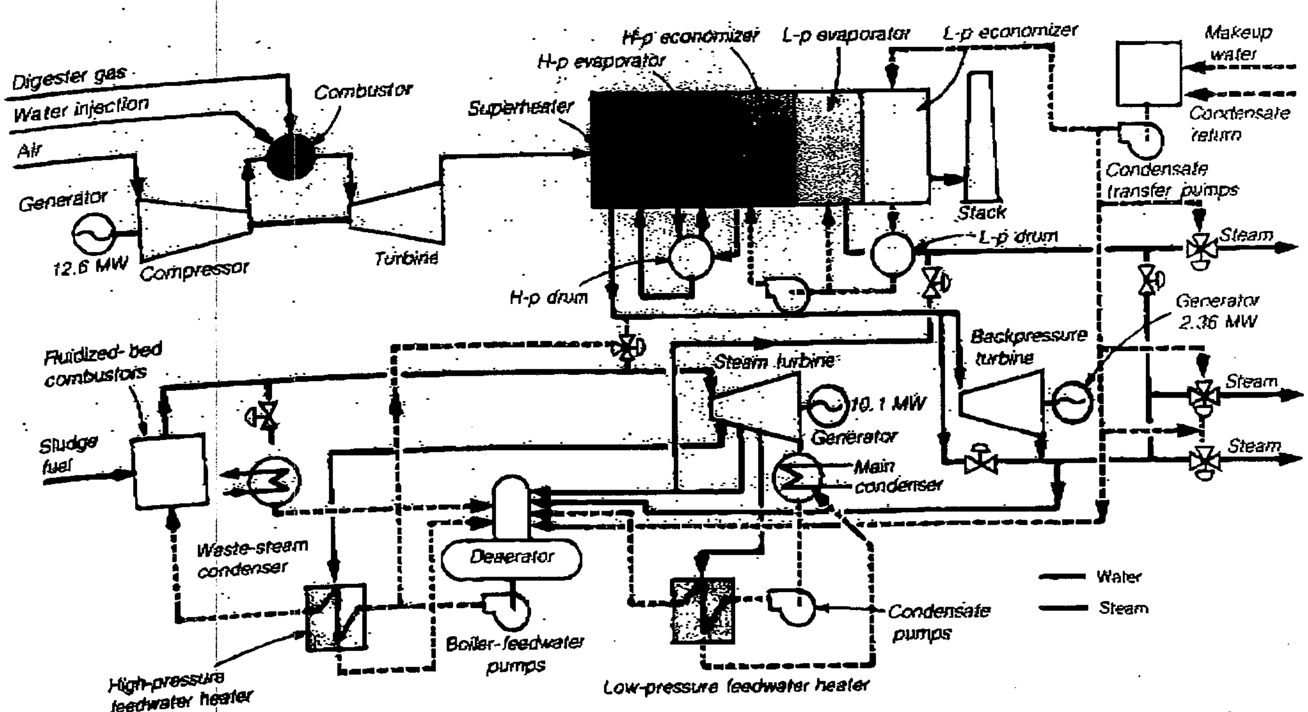
A simplified energy balance for the HERS project elements is presented in Figure 2. Energy production of approximately 25 MW is accomplished through use of gas, steam, and back pressure turbines. Major steam uses are for digester heating and the Carver-Greenfield process. The Hyperion Treatment Plant is anticipated to require an average of 15 MW of electrical power including the HERS project needs. It is estimated that an average surplus of 10 MW of electrical power will be generated. The surplus is principally due to the extreme efficient nature of the engineered power cycle and the Carver-Greenfield process providing a high quality fuel with minimum energy input.

SUMMARY

The City of Los Angeles has adopted the Hyperion Energy Recovery System as the method for removing sludge from the ocean. In addition to this objective, the HERS project will result in the production of approximately 10 MW of net energy from the Hyperion Treatment Plant, while meeting stringent air quality standards. The utilization of dewatering, dehydration, combustion, and cogeneration technologies employed as part of the HERS project represents a unique state-of-the-art sludge management concept.

FLOW SCHEME

MUNICIPAL SLUDGE FACILITY POWER PRODUCTION 25 M.W



Sludge is anaerobically digested—as it is today—and the fuel gas drives a combined-cycle plant. Gas-turbine power is 12.6 MW design, while the steam turbine produces 2.4 MW. Steam at 165 psig exhausting from the back-pressure turbine will feed the last stage of the multiple-effect C-G evaporators. Lower-pressure steam heats the digesters.

Digested sludge is then centrifuged and dried in the C-G process. The pulverized, dried product enters the fluidized-bed gasifier unit designed for staged combustion with two afterburners. This combustion technique was evaluated to produce the lowest NO_x emissions, and could most economically meet the stringent requirements of the region. The drawback is that there is no chance to operate the fluidized bed with an absorbent like limestone. Therefore, any sulfur has to be removed in a separate flue-gas-desulfurization step downstream.

Flue gas from the gasifier—at a maximum temperature of 1750F from the second afterburner—travels to a flue-gas-to-air heat exchanger, then to a heat-recovery steam generator (HRSG) consisting of superheater, evaporator, and economizer sections. Design calls for straight-flow, nonbaffled, A-type boilers with bare tubes. Feedwater preheated to 320F will be converted to superheater steam at 750F/620 psig that drives a separate condensing turbine.

The digester gas/combined cycle will serve as the baseload electric-power supply to the plant.

MENTION: OTHER COUNCIL DISTRICTS; NOTE SATELITE LOCATIONS

[redacted]

Signs Posted on Major Streets Limit Trucks to Under 5 Tons...

Then <u>WHY</u> is the <u>City going to allow 38 ton trucks to drive explosive gas down these or other streets</u>?

Sign located on Talbot St. in Point Loma

WHY *again* is Point Loma the GUINEA PIG for the City in another insider deal at the expense of our <u>SAFETY</u> and <u>QUALITY OF LIFE</u>?

THE PROBLEM IS TWO-FOLD:

- There will be huge Tube Trucks <u>transporting highly explosive gas through our residential neighborhoods.</u>
- <u>NO</u> other City in the USA uses these trucks to move this dangerous gas.
- <u>NO</u> Environmental Impact Report, Methane Management Plan and Traffic Analysis have been done on this project!
- The Tube Trucks being used are Not made in this country.

SECONDLY:

- This is a corporate welfare "<u>SWEETHEART DEAL</u>".
- The City will <u>only make only pennies on the dollar</u>, but will be faced with major future liabilities if something goes wrong.
- <u>There are safe and feasible ways</u> of using this gas resource, without putting the community at risk, while gaining a better deal for the city and taxpayers of San Diego.

THE PROJECT:

<u>POINT LOMA WATER TREATMENT PLANT</u> *is planning to expand its methane gas operation externally outside of the existing plant and transport compressed volatile methane gas in "<u>Monster" Tanker Trucks</u> down Gatchell Road.*

PAST:

- The Tidepools Recreation Areas
- Cabrillo National Monument and
- Fort Rosecrans Military Cemetery
- The Military Base
- Point Loma Nazarene University

THRU:

Densely populated residential neighborhoods and business districts all the way to satellite locations in La Jolla and Qualcomm.

ADDITIONALLY THERE ARE:

22 Schools and 20 Churches on the adjacent to proposed truck routes.

THE RECENT METHANE GAS EXPLOSION (5/19/08) at the Hilton Hotel, Gas Lamp Quarter, S.D. is a good example of the <u>RISK that the City of San Diego is placnig on the Pt. Loma Community</u>

Voice your opinion at the Peninsula Community Planning Board meeting on Thursday, at the Point Loma Library, 3701 Voltaire. Meeting starts at 6:30 pm.

For mor information contact: **Jim Gilhooly 619 223-9768**

@ PCPB MEETING

12/05/2008 04:50 16192238939 PAGE 11

B. Kelley

WORLDWIDE ENGINEERING SERVICES COMPANY

WWESCO

3451 TRUMBULL STREET
SAN DIEGO CA USA 92106
TEL 1 619 223-9768
FAX 1 619 223-8939

JAMES GILHOOLY
No. 27..
Exp.
QUALITY
STATE OF CALIFORNIA

Facsmile Cover Sheet

Date: 12-5-2008 Time:

To: JOHN ROBERTUS - EXEC. OFFICER

Company: SAN DIEGO REGIONAL WTR. BOARD

Fax Number: 858-571-6972

From: JIM GILHOOLY. (PRES.)

at WWESCO

SUBJECT: PT. LOMA WATER/SEWAGE PLANT

Number of copies being transmitted:
(including this sheet) 10

REF. 3RD. WAIVER ON SUBJECT FACILITY.

Our Fax number is 1 619 223-8939

" TEL " 1-619-223-9768

Comments or special instructions:

SEE ENCLOSURES

Doc Scanned On: 12/22/08
M. Carvajal Time: 9:01

12/20/2008 ON 12-5-2008 I FORWARDED TO YOUR ATTENTION A PARCEL OF DATA/INFORMATION ON REF. WAIVER AND CITY'S PROPOSAL TO TRANSPORT PIPELINE GAS FROM FACILITY TO SATELLITE LOCATIONS (MCHANE)
(LA JOLLA - QUALCOMM - SAN DIEGO ZOO)

X YOUR RESPONSE HAS BEEN DEAFENING! Jim Gilhooly

ATTENTION: OTHER COUNCIL DISTRICTS; NOTE SATELLITE LOCATIONS →

Signs Posted on Major Streets Limit Trucks to Under 5 Tons...

Sign located on Talbot St. in Point Loma

Then WHY is the City going to allow 38 ton trucks to drive explosive gas down these or other streets?

THE PROJECT:

POINT LOMA WATER TREATMENT PLANT *is planning to expand its methane gas operation externally outside of the existing plant and transport compressed volatile methane gas in "Monster" Tanker Trucks down Gatchell Road.*

PAST:

- The Tidepools Recreation Areas
- Cabrillo National Monument and
- Fort Rosecrans Military Cemetery
- The Military Base
- Point Loma Nazarene University

THRU:

Densely populated residential neighborhoods and business districts all the way to satellite locations in La Jolla and Qualcomm ← S.D. ZOO

ADDITIONALLY THERE ARE:

22 Schools and 20 Churches on the adjacent to proposed truck routes.

WHY *again* is Point Loma the GUINEA PIG for the City in another insider deal at the expense of our SAFETY and QUALITY OF LIFE?

THE PROBLEM IS TWO-FOLD:

- There will be huge Tube Trucks transporting highly explosive gas through our residential neighborhoods.
- NO other City in the USA uses these trucks to move this dangerous gas.
- NO Environmental Impact Report, Methane Management Plan and Traffic Analysis have been done on this project!
- The Tube Trucks being used are Not made in this country.

SECONDLY:

- This is a corporate welfare "SWEETHEART DEAL".
- The City will only make only pennies on the dollar, but will be faced with major future liabilities if something goes wrong.
- There are safe and feasible ways of using this gas resource, without putting the community at risk, while gaining a better deal for the city and taxpayers of San Diego.

THE RECENT METHANE GAS EXPLOSION (5/19/08) at the Hilton Hotel, Gas Lamp Quarter, S.D. is a good example of the RISK that the City of San Diego is placnig on the Pt. Loma Community

Voice your opinion at the Peninsula Community Planning Board meeting on Thursday, at the Point Loma Library, 3701 Voltaire. Meeting starts at 6:30 pm.

For mor information contact: **Jim Gilhooly 619 223-9768**

* CITY DID NOT SHOW @ PCPB MEETING

Melissa V

METRO WASTEWATER JPA

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

2008 DEC 24 P 1:03

December 22, 2008

Ms. Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, California 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall

Dear Ms. Stuber:

The Metro Wastewater Commission and JPA (together "Metro JPA") are pleased to provide comments on the 301(h) tentative decision and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant.

The Point Loma Plant is a major component of the Metropolitan Sewerage System operated by the City of San Diego, with the participation of fifteen other municipalities and agencies. Nearly one third of the total flow to the system originates from these participating agencies. The Metro JPA, the coalition of municipalities and special districts sharing in the use of the City of San Diego's regional wastewater facilities, has a unique interest in decisions that affect the operation of the Metro system. Additionally, with coastal communities as participating agencies, we are also concerned that the public health and environment of our local waters are protected.

The Metro JPA would like to express its complete support for and concurrence with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for San Diego's Point Loma Wastewater Treatment Plant. The Metro JPA has been actively involved in the previous secondary waiver process, and the elected officials of all member agencies are educated in this subject. We feel strongly that the combination of chemically assisted primary treatment, the deep ocean outfall (located 320 feet deep and 4.5 miles from the shoreline) and the City of San Diego's exemplary record of compliance with the State Ocean Plan during the last 15 years have proven to be protective of the public health and environment in the local area. As well, comprehensive ocean monitoring over the past 15 years, along with scientific analysis, have not indicated any harmful impacts to the ocean environment. The Metro JPA supports the U.S. Environmental Protection Agency's Tentative Decision because the decision continues to protect the environment while being fiscally prudent with public resources.

Therefore, the Metro JPA urges the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary actions to make this decision final at the earliest possible date.

Sincerely,

Ernest Ewin
Interim Chair

cc: Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Melissa V.

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

2008 DEC 24 P 1:01

CITY OF CHULA VISTA

OFFICE OF THE MAYOR

December 22, 2008

Ms. Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, California 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall

Dear Ms. Stuber:

I am pleased to provide comments on the 301(h) tentative decision and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant.

The Point Loma Plant is a major component of the Metropolitan Sewerage System operated by the City of San Diego, with the participation of 15 other agencies and municipalities, including Chula Vista. Nearly one third of the total flow to the system originates from these participating agencies. As Mayor of Chula Vista, San Diego County's second largest city, I support and concur with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for San Diego's Point Loma Wastewater Treatment Plant. This will continue to protect the environment while being fiscally prudent with taxpayer dollars.

Chula Vista has been actively involved in the previous secondary waiver process. As a member of the Metro JPA, I have personally followed this issue closely. The combination of chemically assisted primary treatment, a deep ocean outfall (located 320 feet deep and 4.5 miles from the shoreline) and the City of San Diego's exemplary record of compliance with the State Ocean Plan during the last 15 years are protective of the public health and environment in the local area. Scientific analysis and comprehensive ocean monitoring over the past 15 years have not indicated any harmful impacts to the ocean environment.

I support the U.S. Environmental Protection Agency's Tentative Decision and urge the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary actions to make this decision final at the earliest possible date.

Respectfully,

Cheryl Cox

Cheryl Cox
Mayor

Cc: Melissa Valdovinos, San Diego Regional Water Quality Control Board

Doc Scanned On: 12/24/08
M. Carvajal Time: 2:26

276 Fourth Avenue • Chula Vista • California 91910 • (619) 691-5044 • Fax (619) 476-5379

Melissa V.

CITY OF POWAY

December 23, 2008

2008 DEC 24 P 1:07
SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall.

Dear Ms. Stuber:

The City of Poway is pleased to provide comments on the 301(h) tentative decision and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant.

The Point Loma Plant is a major component of the Metropolitan Sewerage System operated by the City of San Diego, with participation by fifteen other municipalities and agencies. As a participating agency, the City of Poway has an interest in decisions that effect the operation of the Metro System. As a member of the greater San Diego area community, we are also concerned that the public health and environment of the local area is protected, and have ourselves invested millions of dollars in sewer collection system improvements to prevent spills into the environment. Additionally, the City of Poway purchases 180 million gallons of recycled water used for landscape irrigation from the Metropolitan Sewerage System every year, significantly reducing the impact on potable water supplies in the region.

The City of Poway would like to express its complete support and concurrence with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for San Diego's Point Loma Wastewater Treatment Plant. Secondary treatment would have provided negligible benefit to the region at a burdensome cost to all participating agencies including the City of Poway. We feel strongly that the combination of chemically assisted primary treatment, deep ocean outfall and comprehensive ocean monitoring has proven to be protective of the public health and environment in the local area. The tentative decision for approval of the variance is appropriate and correct.

Doc Scanned On: 12/24/08
M. Carvajal Time: 2:26

City Hall Located at 13325 Civic Center Drive
Mailing Address: P.O. Box 789, Poway, California 92074-0789 • (858) 668-4400

Accordingly, the City of Poway urges the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary actions to make this decision final at the earliest possible date.

Sincerely,

Betty Rexford
Councilmember

cc: Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Melissa V.

CITY OF CORONADO

OFFICE OF THE MAYOR
1825 STRAND WAY
CORONADO, CA 92118

CASEY TANAKA
MAYOR
(619) 522-7322

December 24, 2008

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD
2008 JAN -2 P 1:53

Ms. Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, California 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall

Dear Ms. Stuber:

The City of Coronado would like to express its complete support for and concurrence with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for San Diego's Point Loma Wastewater Treatment Plant.

The Point Loma Plant is a major component of the Metropolitan Sewerage System operated by the City of San Diego, with the participation of fifteen other municipalities and agencies. Nearly one third of the total flow to the system originates from these participating agencies. As a participating agency, the City of Coronado has a unique interest in decisions that affect the operation of the Metro system. Additionally, as a coastal city with approximately 9.75 miles of ocean coastline between the Point Loma outfall and the South Bay outfall, we are also concerned that the public health and environment of our local waters are protected.

The City of Coronado was actively involved in the previous secondary waiver process, and our elected officials are educated in this subject. We feel strongly that the combination of chemically-assisted primary treatment, the deep ocean outfall (located 320 feet deep and 4.5 miles from the shoreline), and the City of San Diego's exemplary record of compliance with the State Ocean Plan during the last 15 years have proven to be protective of the public health and environment in the local area. Comprehensive ocean monitoring over the past 15 years, along with scientific analysis, has not indicated any harmful impacts to the ocean environment. The City of Coronado supports the U.S. Environmental Protection Agency's Tentative Decision because the decision continues to protect the environment while being fiscally prudent with public resources.

Doc Scanned On: 1/2/09
M. Carvajal Time: 2:42

US EPA, Region IX
CRU: 9 000000275:MVALD
December 24, 2008
Page Two

Therefore, the City of Coronado urges the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary action to make this decision final at the earliest possible date.

Sincerely,

Casey Tanaka
Mayor

cc: Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Melissa V.

CITY OF
LA MESA
JEWEL of the HILLS

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD
2009 JAN -2 P 1:53

January 2, 2009

Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall

Dear Ms. Stuber:

Mayor Art Madrid and Councilmember Ernest Ewin support the U.S. Environmental Protection Agency's tentative decision to approve the 301(h) variance from federal treatment standards and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant.

The Point Loma Plant, which is operated by the City of San Diego, is a major component of the Metropolitan Sewerage System. The plant serves approximately two million people and businesses within the metropolitan service area including fifteen other municipalities and agencies. The participating agencies generate nearly one third of the total flow discharged through Point Loma. As a participating agency, the City of La Mesa has an interest in decisions that affect the operation of the Metro System. We are also concerned that the public health and environment of our local waters are protected.

We would like to express our complete support and concurrence with the tentative decision. The record clearly shows that the public health and ocean environment are protected through the combination of chemically assisted, advanced primary treatment, an outfall pipe that discharges 320 feet deep and 4.5 miles offshore, and a comprehensive ocean monitoring program. The tentative decision for approval of the variance is appropriate and correct.

Accordingly, we urge the United States Environmental Protection Agency and Regional Water Quality Control Board to take the necessary actions to make this decision final at the earliest possible date.

Sincerely,

Art Madrid
Mayor

Ernest Ewin
Councilmember

Doc Scanned On: 1/2/09
M. Carvajal Time: 2:42

cc: Melissa Valdovinos, San Diego Regional Water Quality Control Board

8130 ALLISON AVENUE • LA MESA, CA 91941 • TEL: 619.667.1105 FAX: 619.462.7528

...Dedicated to Community Service
2554 SWEETWATER SPRINGS BOULEVARD, SPRING VALLEY, CALIFORNIA 91978-2004
TELEPHONE: 670-2222, AREA CODE 619 www.otaywater.gov

January 5, 2009

Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall

Dear Ms. Stuber:

The Otay Water District is pleased to provide comments on the 301(h) tentative decision and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant (Point Loma Plant).

The Point Loma Plant is a major component of the Metropolitan Sewerage System that is operated by the City of San Diego, with participation by fifteen other municipalities and agencies. Nearly one-third of the total flow to the system originates from these participating agencies. As a participating agency, the Otay Water District has a unique interest in decisions that effect the operation of the Metro System. Additionally, as a member of the greater San Diego area community, we are also concerned that the public health and environment of the local area are protected.

The Otay Water District would like to express its complete support and concurrence with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for the Point Loma Plant. We feel strongly that the combination of chemically assisted primary treatment, deep ocean outfall, and comprehensive ocean monitoring has proven to be protective of the public health and environment in the local area. The tentative decision for approval of the variance is appropriate and correct.

The Otay Water District would also like to express how important it considers the adoption of a comprehensive program for the maximum use of recycled water would be for the San Diego Region and the Metropolitan Sewerage System as this type of program could effectively reduce the amount of wastewater to be treated at the Point Loma Plant and discharged to the Pacific Ocean.

Accordingly, the Otay Water District urges the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary actions to make this decision final at the earliest possible date.

Sincerely,
OTAY WATER DISTRICT

Mark Watton
General Manager

MW:jf

cc: Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Phone: (858) -569-6005
Fax: (858)-569-0968
Email: creiff@sierraclubsandiego.org
www.sierraclubsandiego.org

San Diego Chapter
Serving the Environment in San Diego and Imperial Counties
8304 Clairemont Mesa Boulevard, #101
San Diego, California 92104

January 6, 2009

Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court
San Diego, California
Attn: Melissa Valdovinos

Subject: Tentative NPDES Permit No. CA0107409, City of San Diego E.W. Blom Metropolitan Wastewater Treatment Plant

Dear Dr. Wright, Chair and Members of the Board:

The Sierra Club San Diego Chapter has reviewed the subject Tentative NPDES permit and the U.S. Environmental Protection Agency Region IX Tentative Decision Document for the City of San Diego E.W. Blom Metropolitan Wastewater Treatment Plant[1]. We respectfully submit the following comments.

1. The permit should include more details on the modification to add disinfection using chlorine (sodium hypochlorite). The RWQCB approved the amendment[2] to the current permit to install a prototype chlorination system and conduct tests. Ocean monitoring of the bacteria indicators should be presented and schedule for implementing the final design.

2. On September 2, 2008 the SWRCB adopted the "No Drugs Down the Drain" [3] campaign. The purpose is to minimize the discharge of pharmaceutical compounds into receiving waters through education on alternative methods of disposal. On November 12 the San Diego RWQCB by consent adopted to support this campaign[4]. We highly recommend that the City participate in this campaign. It is also critical to minimize these compounds from entering the waste stream in order to protect the quality of the City reclaimed water supply. The EPA Tentative Decision Document Summary of Findings paragraph 9[5] states:

> The applicant will continue to develop and implement both its existing and comprehensive nonindustrial source control program, in effect since 1985, and existing comprehensive public education program to minimize the amount of toxic pollutants that enter the treatment system from nonindustrial sources. [CWA section 301(h)(7); 40CFR 125.66]

[1] United States Environmental Protection Agency Region IX, Tentative Decision of the City of San Diego's E.W Blum Point Loma Metropolitan Wastewater Treatment Plant Application for a Modified NPDES Permit Under Sections 301(h) and (j)(5) of the Clean Water Act
[2] Addendum No. 2 to Order No. R9-2002-0025, NPDES Permit No. CA0107409 for City of San Diego Point Loma Wastewater Treatment Plant
[3] SWRCB http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2008/rs2008_0062.pdf
[4] SDRWQCB
http://www.waterboards.ca.gov/sandiego/board_info/agendas/2008/nov_12/item5/pharmaceutical%20resolution.pdf
[5] Ibid, page 9

3. The EPA Tentative Decision Document[6] under the Toxics discussion discusses the sensitivity of the analytical methods used to evaluate effluent compliance after initial dilution. EPA notes that the MDLs used for aldrin, PCBs and TCDD equivalents need to be lowered in order to achieve 40 CFR 136 Levels. The fact that contaminant concentrations in the effluent are expressed in weight /volume of the sample while the contaminant concentrations in the sediment are in weight/weight of the sediment sample further complicates the analysis issues.
4. Our review of the 2007 Annual Receiving Waters Monitoring Report[7] for the Point Loma Ocean Outfall indicates an error in Table 4.4. It states that the units for tDDT, HCB, and PCB data are in parts per trillion (ppt). Table 4.4 has values for these chemicals that are below the MDLs shown in Appendix B.1. For example, the MDL for PCB is 700 ppt while there are values in Table 4.4 are as low as 10 ppt. It appears the units should be in parts per billion.
5. The City's Annual Receiving Waters Monitoring Reports [8] for 2007, 2006 and 2005 in Chapter 3, Figure 3.3 graphically depicts the quarterly total coliform distributions for seawater samples collected at depths ≥ 60 meters. The coliform distribution provides an indicator of the wastewater plume from the outfall. Note the significant variations from year to year in the distributions indicating variable oceanographic conditions; for example currents that determine the fate and transport of the plume. The sediment samples on the other hand are taken twice a year with much lower resolution. Efforts should continue to improve the fate and transport predictions for the contaminants from the ocean outfall. Reports such as the Scripps Institute of Oceanography on the divergence and upwelling around Pt. Loma[9] provide valuable information on the oceanographic conditions around the outfall. Remote sensors (Spray gliders) using the Scripps Institute of Oceanography have been used to describe the plume at the Santa Ana and Orange County Sanitation District's ocean outfall.[10]

Thank you for this opportunity to submit comments.

Sincerely,

Ed Kimura

Edward Kimura
Sierra Club
San Diego Chapter

---

[6] Ibid, page 37
[7] City of San Diego Ocean Monitoring Reports http://www.sandiego.gov/mwwd/environment/reports.shtml
[8] Ibid, see Archives for 2006 and 2005 reports
[9] Roughan, M et al , Observations of divergence and upwelling around Pt. Loma, California 2005, Journal of Geophysical Research, 110, Article C 04011, doi:10.1029/2004JC002662. Available at http://repositories.cdlib.org/cgi/viewcontent.cgi?article=2656&context=postprints
[10] Todd, Robert E, Daniel L. Rudnick, Russ Davis, Observations of an effluent plume from an ocean outfall using Spray gliders, Scripps Institution of Oceanography, UCSD, 1st International Meeting of Students in Physical Oceanography June 2007 http://ieng9.ucsd.edu/~rtodd/todd_IMSPO.pdf

State of California
Regional Water Quality Control Board
San Diego Region

REVISED
EXECUTIVE OFFICER SUMMARY REPORT
January 21, 2009

ITEM: 6

SUBJECT: PUBLIC HEARING: NPDES Permit Reissuance: City of San Diego Point Loma Ocean Outfall Discharge to Pacific Ocean. Discussion of Tentative NPDES Permit No. CA0107409 and waste discharge requirements for the City of San Diego E. W. Blom Point Loma Metropolitan Wastewater Treatment Plant discharge to the Pacific Ocean through the Point Loma Ocean Outfall, based on a variance from federal secondary treatment standards at Title 40 of the Code of Federal Regulations Part 133 (40 CFR 30), as provided for improved discharges under Clean Water Act section 301(h) and 40 CFR 125, Subpart G. The USEPA and the Regional Board will jointly conduct this public hearing to receive comments related to the tentative NPDES permit. The Regional Board will not adopt the NPDES permit at this hearing, but will formally act on the permit at a ~~subsequent~~ **later** Board meeting. The public comment period for this item will remain open until 5:00 p.m. on January 28, 2009 and all written comments submitted by the deadline will be considered by the Board before taking action on the tentative permit. (Tentative Order No. R9-2009-0001) *(Melissa Valdovinos)*

PURPOSE: The United States Environmental Protection Agency (USEPA) and the Regional Board will jointly conduct this public hearing to receive comments related to the tentative NPDES permit/order, including the tentative decision document (TDD) regarding the City's application for a variance from secondary treatment requirements of the Clean Water Act, pursuant to section 301(h) and (j)(5). The Regional Board will not adopt the NPDES permit/order at this hearing, but will formally act on the permit at a ~~subsequent~~ **later** Board meeting.

PUBLIC NOTICE: USEPA and the Regional Board published a Joint Notice of Proposed Actions in the San Diego Union Tribune newspaper on December 5, 2008, which announced this January 21, 2009 meeting and gave instructions on submitting comments on the tentative NPDES permit/order and TDD. The public comment period will remain open until January 28, 2009.

The tentative NPDES permit/order and TDD were sent out on December 5, 2008 to the City of San Diego Metropolitan

Wastewater Department (the City) and to all known interested parties and agencies. Copies were also made available for public review at the Regional Board web site and office on December 5, 2008.

DISCUSSION:

The City is currently discharging advanced primary treated wastewater to the Pacific Ocean via the Point Loma Ocean Outfall pursuant to Order No. R9-2002-0025, as amended, and NPDES Permit No. CA0107409, as modified. The effluent limitations are based, in part, on a variance from secondary treatment standards contained in the Clean Water Act as granted by USEPA pursuant to sections 301(h) and (j)(5). The variance results in biochemical oxygen demand (BOD) and total suspended solids (TSS) limitations that are less stringent than federal secondary requirements (based on Ocean Pollution Reduction Act [OPRA] requirements). Also in accordance with OPRA, a reduction of TSS mass emissions is required. In the draft permit/order, a limitation of 15,000 metric tons per year must be achieved on the permit effective date through December 31, 2013, and a limitation of 13,598 metric tons per year must be achieved by January 1, 2014.

The wastewater treatment system consists of mechanical bar screens, aerated grit removal, chemical addition, sedimentation, and partial chlorination. The Point Loma Ocean Outfall (PLOO) discharges the wastewater effluent approximately 4.5 miles offshore. Although this is beyond the limit of State-regulated ocean waters, potential plume migration within this limit warrants joint regulation of the effluent, from USEPA as well as the State.

Order No. R9-2002-0025 expired on June 15, 2008 but has been administratively extended. The City submitted an application for a renewed permit and 301(h) variance on December 14, 2007, and supplemental information requested by the Regional Board, on June 6, 2008. In a letter to the City of San Diego, dated November 13, 2008, the Regional Board deemed the application complete. The tentative permit/order establishes discharge requirements based on modified secondary treatment requirements in accordance with federal Clean Water Act sections 301(h) and (j)(5).

The need for water quality-based effluent limitations for toxic pollutants listed under Table B of the Ocean Plan was determined using the reasonable potential analysis (RPA) procedures of the Ocean Plan, which were added in 2005. The RPA procedures use a statistical approach to determine if the discharge has the potential to cause an exceedance of the water quality objectives for the Pacific Ocean for the toxic pollutants listed under Table B of the Ocean Plan, based on historical effluent data and the dilution factor for the PLOO. The RPA results for this discharge indicated that the effluent only has reasonable potential to cause exceedances of water quality objectives for chronic toxicity, chlordane, and heptachlor; therefore, water quality-based effluent limitations are included in the tentative order for these parameters. Performance goals, rather than effluent limitations, are included in the tentative order for all other toxic pollutant parameters of Table B of the Ocean Plan. Performance goals are not enforceable effluent discharge specifications or standards for the regulation of the discharge; however, inclusion of performance goals supports State and federal antidegradation policies and provides all interested parties with information regarding the expected levels of pollutants in the discharge that should not be exceeded to maintain the water quality objectives established in the Ocean Plan.

Comments on Tentative Order No. R9-2009-0001 have been received from eight parties as of January 7, 2009. One party expressed opposition to the operations of the plant. Six parties support and concur with the TDD and tentative NPDES permit/order. One party provided comments on disinfection technique, minimization of pharmaceuticals, laboratory analysis/reporting, and bacterial fate and transport. Additional comments received and any will be provided in the supplemental agenda packet. Written responses to comments will be prepared after the close of the comment period on January 28, 2009. Comments on the TDD will be addresses by USEPA.

SIGNIFICANT CHANGES:

The following areas in the tentative permit/order differ from the current permit/order:

1. Standard language for certain Findings, Standard Provisions, and the permit format recommended by the State Board are implemented.

2. A RPA was conducted for water quality-based limitations using data supplied by the City. Effluent limitations were included for the constituents with reasonable potential to exceed water quality objectives; chronic toxicity, chlordane, and heptachlor. Constituents that do not have reasonable potential or had inconclusive RPA results are assigned performance goals in the

tentative order. These constituents are also assigned monitoring requirements, but the results will be used for informational purposes only, not compliance determination.

3. Section VII – Compliance Determination has been added to explain how compliance with the requirements of the tentative order will be determined.

4. The 2005 California Ocean Plan's definition of the zone where bacterial objectives apply includes areas used for water contact sports, as determined by the Regional Board (i.e., waters designated as REC-1 for contact water recreation). The current permit applies these bacterial objectives to a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline. USEPA maintains that based on the Water Quality Control Plan for the San Diego Basin 9 (Basin Plan) definitions for REC-1 beneficial use and for Ocean Waters, REC-1 beneficial use must be protected throughout State of California territorial marine waters in the San Diego Region, which extend surface to bottom, out to three nautical miles from the shoreline. These bacterial objectives, which now include enterococcus, in addition to total and fecal coliforms, are applied throughout State of California territorial marine waters in the draft permit/order.

COMPLIANCE:

The City has generally complied with the requirements of the current NPDES permit/order; noncompliance consists of the following:

1. The City violated the daily maximum effluent limitation of 205 chronic toxicity units (TUc) for chronic toxicity on May 4, 2003 at >667 TUc.

2. The City violated the daily maximum effluent limitation of 3 mg/L. for settleable solids on June 8, 2004 at 7.5 mg/l and on August 21, 2004 at 3.5 mg/L.

3. The City violated the 7-day average effluent limitation of 1.5 mg/L for settleable solids on June 12, 2004 at 1.8 mg/L and on June 14, 2004 at 1.7 mg/L.

4. The City violated the 30-day average effluent limitation of 4.7 mg/L for chlordane in July and August 2004 at 34.8 mg/L.

5. The City violated the 30-day average effluent limitation of 10 mg/L for heptachlor in July and August 2004 at 11 mg/L.

6. The City violated the 30-day average effluent limitation of 10 mg/L for heptachlor in July and August 2004 at 11 mg/L.

These violations resulted in an Administrative Civil Liability of $42,000 on September 14, 2005 (Order No. R9-2005-0229).

KEY ISSUES:

1. The tentative permit/order establishes discharge requirements based on modified secondary treatment requirements in accordance with federal Clean Water Act sections 301(h) and (j)(5), which results in less stringent BOD and TSS limitations. This has been the case for the past two permit terms as well.

2. Bacterial objectives for enterococcus, total coliform, and fecal coliform, are applied beyond the shoreline area, throughout State of California territorial marine waters.

LEGAL CONCERNS: None

SUPPORTING DOCS:

1. Site Map
2. Joint Notice of Proposed Actions
3. USEPA Tentative Decision Document
4. Transmittal Letter for Draft NPDES Permit No. CA0107409 and Tentative Order No. R9-2009-0001
5. Draft NPDES Permit No. CA0107409 and Tentative Order No. R9-2009-0001
6. Comments on Draft NPDES Permit No. CA0107409 and Tentative Order No. R9-2009-0001, as of January 7, 2009 (from James Gilhooly, Metro Joint Powers Authority, City of Chula Vista, City of Poway, City of Coronado, City of La Mesa, Otay Water District, and Sierra Club)
7. **Additional Comments Letters from Padre Dam Municipal Water District (12/19/08), City of San Diego Metropolitan Wastewater Department (1/7/09), City of Imperial Beach (Received 1/9/09), National City (1/5/09), and City of El Cajon (1/5/09).**
8. **Section 301(j)(5) of the Clean Water Act, also know as the Ocean Pollution Reduction Act**

RECOMMENDATION: Not applicable; the Regional Board will not be acting on the NPDES permit at this meeting.

Melissa V.

PADRE DAM
Municipal Water District

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

2009 JAN 14 P 1:34

Item No. 6
Sup. Doc. 7

December 19, 2008

Ms. Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall.

Dear Ms. Stuber:

Padre Dam Municipal Water District is pleased to provide comments on the 301(h) tentative decision and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant.

The Point Loma Plant is a major component of the Metropolitan Sewerage System that is operated by the City of San Diego, with participation by fifteen other municipalities and agencies. Nearly one third of the total flow to the system originates from these participating agencies. As a participating agency, the Padre Dam Municipal Water District has a unique interest in decisions that effect the operation of the Metro System. Additionally, as a member of the greater San Diego area community, we are also concerned that the public health and environment of the local area is protected.

The Padre Dam Municipal Water District would like to express its complete support and concurrence with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for San Diego's Point Loma Wastewater Treatment Plant. We feel strongly that the combination of chemically assisted primary treatment, deep ocean outfall and comprehensive ocean monitoring has proven to be protective of the public health and environment in the local area. The tentative decision for approval of the variance is appropriate and correct.

Doc Scanned On: 1/14/09
M. Carvajal Time: 2:11

9300 Fanita Parkway
Santee, CA 92071
T 619 448 3111
F 619 449 9469
www.padredam.org
PO Box 719003
Santee, CA 92072-9003

Accordingly, the Padre Dam Municipal Water District urges the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary actions to make this decision final at the earliest possible date.

Sincerely,

Doug Wilson
General Manager

cc: Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

THE CITY OF SAN DIEGO

HAND DELIVERED

January 7, 2009

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD
2009 JAN -7 P 3: 46

Ms. Melissa Valdovinos
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, California 92123-4340

Re: Comments on Tentative Order R9-2009-0001 (NPDES CA0107409)
Point Loma Wastewater Treatment Plant
CRU: 9 000000275: MVALD

Dear Ms. Valdovinos:

Thank you for the opportunity to present comments on Tentative Order No. R9-2009-0001 (NPDES CA0107409). Tentative Order No. R9-2009-0001 would renew NPDES requirements and modified secondary treatment standards for the discharge of treated wastewater from the Point Loma Wastewater Treatment Plant (PLWTP) to the Point Loma Ocean Outfall (PLOO). Modified secondary treatment standards for the PLWTP discharge would be renewed per requirements established in Section 301(h) of the Clean Water Act.

While requirements proposed within Tentative Order No. R9-2009-0001 are largely similar to those established in Order No. R9-2002-0025, Tentative Order R9-2009-0001 establishes a number of new reporting, monitoring, and compliance provisions. To facilitate EPA and Regional Board review of the City's comments on Tentative Order No. R9-2009-0001, our comments are divided into two groups: (1) comments on issues the City considers to be of critical importance, and (2) other comments or suggestions.

KEY ISSUES OF IMPORTANCE

The City has identified five critical proposed requirements within Tentative Order No. R9-2009-0001 that require revision. Revisions are required within the Tentative Order to:

- denote that the 240 mgd flow limit applies to average dry weather conditions,
- address the need for a feasibility assessment of continuous chlorine monitoring,
- denote the proper testing method for dioxins,
- modify requirement for receiving water ammonia monitoring and address the feasibility of PLOO plume tracking, and
- establish laboratory report submittal dates that are achievable.

Required revisions within these five areas are addressed in the following sections.

DIVERSITY BRINGS US ALL TOGETHER

Metropolitan Wastewater Department
9192 Topaz Way • San Diego, CA 92123
Tel (858) 292-6300 Fax (858) 292-6310

Daily Flow Limit: The flow limitation established in Requirement III.B (page 12 of Order No. R9-2009-0001) should be revised to note that the 240 mgd flow limit applies under average dry weather conditions. Requirements III.B should state:

III.B. Discharge through the PLOO from the facility in excess of an average daily dry weather flow of 240 mgd is prohibited.

Discharge Prohibition III.B of Tentative Order No. R9-2009-0001 carries forward a misstated flow limit set forth in Order No. R9-2002-0025 which inadvertently omitted the words "dry weather" from the 240 mgd PLOO flow requirement. Prohibition A.25 of the original 1995 Point Loma 301(h) NPDES permit (Order No. 95-105) established PLOO flow limits as:

25. Discharge through the PLOO from any treatment facility at a 30-day average dry weather flowrate in excess of the design capacity of that treatment facility is prohibited. For purposes of this permit, the design capacity of that treatment facility identified in the findings of this permit, unless the Regional Board Executive Officer (hereinafter Executive Officer) approves a revised design capacity in accordance with this permit.

The Regional Board has previously designated design flows for the PLWTP and PLOO at 240 mgd (dry weather) and 432 mgd (peak day). Metro System master facilities plans are based on these maximum design flows. Order No. R9-2009-0001 should limit flows through the PLOO and PLWTP to 240 mgd (dry weather) and 432 mgd (peak day).

Continuous Chlorine Monitoring: Provision VI.C.6.a of Tentative Order No. R9-2009-0001 would require the City to begin continuous effluent monitoring of chlorine residual within 180 days of the effective date of the permit. This requirement is also specified within Footnote 15 to Table E-3 (page E-14 of the Monitoring and Reporting Program).

The City has contacted vendors of equipment for continuous monitoring of chlorine residual and the vendors have informed the City that continuous monitoring of the PLOO discharge for total chlorine residual may not be currently feasible or implementable. While continuous chlorine monitoring is feasible with drinking water or filtered recycled water (which contain near-zero concentrations of total suspended solids), the City to date has not been able to locate any chlorine detection sensors that will reliably operate within the TSS range of the PLOO effluent (which during 2008 averaged a TSS concentration of 35 mg/l). Additional analysis is required to assess chlorine residual analysis equipment and address the feasibility of such continuous chlorine monitoring. To protect the ocean environment and to address the feasibility of continuous chlorine monitoring, the City recommends that Provision VI.C.6.a of Order No. R9-2009-0001 be revised to the following:

VI.C.6 Other Special Provisions

a. The Discharger shall prepare a study that assesses the feasibility and reliability of implementing continuous effluent monitoring for total chlorine residual. If a feasible and reliable method for continuous chlorine residual monitoring is identified, the study shall present an implementation plan for pilot testing and implementing the continuous chlorine monitoring method. The feasibility study and implementation plan shall be submitted to the Executive Director within 365 days of the effective date of this Order. Until or unless such continuous chlorine monitoring is implemented, to ensure compliance with WQBELs for total chlorine

> *residual, the Discharger shall collect four grab samples per day that are representative of the daily effluent discharge and analyze the grab samples for total chlorine residual. These samples shall be collected at equal time intervals throughout on-site ELAP-accredited laboratory working hours.*

Dioxin Test Method: Footnote 10 to Table E-3 (page E-13 of the Monitoring and Reporting Program) proposes that EPA Method 1613 be required for analysis of dioxin. In adopting Addendum No. 1 to Order No. R9-2002-0025, the Regional Board and EPA agreed to the City's use of EPA Method 8280 (GC-ECD/MS detection) for analyzing dioxin. As part of this approval, the City demonstrated that performance of Method 8280 meets or exceeds the performance of Method 1613 in effluent, and Method 8280 eliminates effluent-related interferences that may cause Method 1613 to register "false positives" for the presence of dioxin isomers.

The City requests that Footnote 10 to Table E-3 be revised to allow use of Method 8280 for the analysis of dioxin, as is currently approved within Addendum No. 1 to Order No. R9-2002-0025.

Receiving Water Ammonia Monitoring: Table E-5 (page E-21 of the Monitoring and Reporting Program) requires that a depth profile of receiving water samples be collected and analyzed for ammonia. This requirement is also addressed on page F-47 of the Fact Sheet. Five receiving water depth-profiles of ammonia are required per month at all kelp bed stations, and quarterly receiving water depth profiles of ammonia are required at all other offshore stations.

It is the City's understanding that receiving water ammonia monitoring is proposed as a surrogate means of tracking the PLOO wastewater plume once PLWTP chlorination is fully functional and receiving water bacteriological monitoring is no longer an effective parameter for tracking the plume. Further study is required to determine (1) if such ammonia monitoring will be the most effective plume tracking method, (2) how such receiving water monitoring should be conducted, and (3) where and how often such receiving water monitoring for ammonia should occur.

It is not possible to comply with the ammonia receiving water monitoring requirement as written, as no probes are presently available for the CTD units to measure this parameter in situ. As a result, receiving water ammonia monitoring would require collecting and analyzing a large number of seawater grab samples at discrete depths. If such grab samples are to be required, sampling protocols (including establishing sample depths) will need to be established.

It should be noted that the City is preparing to initiate a special study designed to (1) determine behavior of the Point Loma outfall wastewater plume at times when the most common circulation patterns are likely to occur, and (2) develop models of regional circulation and plume mixing to determine behavior and dispersal of the plume through time. Work to support this study is scheduled to be performed from April 2009 through September 2010. The results of this study should prove relevant to determining appropriate long-term plume monitoring requirements. To address the above ammonia monitoring issues and to assess plume tracking options, the City requests that Special Provision VI.C.6.b be added that requires the following:

VI.C.6 Other Special Provisions

b. *The Discharger shall prepare a feasibility study that assesses behavior of the PLOO wastewater plume and means of tracking the plume. The feasibility study*

> *shall present a recommended plan for plume tracking which includes identifying recommended modifications in receiving water sampling parameters, locations, and/or sampling protocols. The feasibility study shall be submitted to the Executive Director within 2 years of the effective date of this Order.*

Until the feasibility study has been completed, the City recommends that ammonia receiving water monitoring provisions of Table E-5 (page E-21) be modified pending further discussion and agreement between the Regional Board, USEPA, and the Discharger.

Report Submittal Schedule: Table E-9 (page E-30 of the Monitoring and Reporting Program) proposes that self monitoring reports be submitted within 30 days of the end of specific reporting periods. Such a submittal schedule is simply not physically feasible for a number of the required analyses, particularly analyses that involve offshore monitoring, benthic monitoring, and analysis/evaluation of collected data.

Monitoring and reporting schedules and requirements set forth in the current NPDES permit (Order No. R9-2002-0025) present a clear description of the content of required reports and establish due dates that are feasible. The City recommends that Table E-9 of Order No. R9-2009-0001 be modified as follows in accordance with the current permit reporting schedule:

Table E-9. Monitoring Periods and Reporting Schedule

REPORTS	Report Period	Report Due
MONTHLY REPORTS Influent and Effluent Solids Removal/Disposal Tijuana Cross-Border Emergency Connection (when flowing) Sludge Analysis Receiving Waters Monitoring Toxicity Testing	Monthly	By the 1st day of the month following the monitoring period. *(e.g., March 1 for January's monitoring)*
QUARTERLY	January-March April-June July-September October-December	June 1 September 1 December 1 March 1
SEMIANNUAL	January- June July- December	August 1 March 1
ANNUAL REPORTS Pretreatment Report (Provision A.3.d.) Sludge Analysis QA Report Flow Measurement Receiving Waters Monitoring Region 9 Kelp Beds Report	January-December	 April 1 April 1 April 1 July 1 July 1 October 1

OTHER COMMENTS

In addition to the above-noted five significant concerns, the City offers the following additional comments and suggestions on Tentative Order No. R9-2009-0001 and the associated Monitoring and Reporting Program (Attachment E).

Dioxin Isomers (Page 19): Footnote 9 to Table 10 (page 19 of the Tentative Order) reproduces a list of TCDD isomers and toxicity equivalents that is taken from the California Ocean Plan. This list is repeated on page A-6 and in Footnote 10 to Table E-2 (page E-10 of the Monitoring and Reporting Program). The California Ocean Plan nomenclature for TCDD isomers is ambiguous, and clarity is required to define TCDD isomers where multiple substitutions are possible (e.g. 2,3,7,8 with "hexa" and "hepta" isomers). To eliminate this ambiguity, the City recommends that Footnote 9 to Table 10 of Order No. R9-2009-0001 (and repeated lists) clarify that the intent of the Order and the California Ocean Plan is to set forth the following list of TCDD isomers and toxicity equivalence factors:

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1
1,2,3,7,8-penta CDD	0.5
1,2,3,4,7,8 -hexa CDD	0.1
1,2,3,6,7,8-hexa CDD	0.1
1,2,3,7,8,9-hexa CDD	0.1
1,2,3,4,6,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8-tetra CDF	0.1
1,2,3,7,8-penta CDF	0.05
2,3,4,7,8-penta CDF	0.5
1,2,3,4,7,8-hexa CDF	0.1
1,2,3,6,7,8-hexa CDF	0.1
1,2,3,7,8,9-hexa CDF	0.1
2,3,4,6,7,8-hexa CDF	0.1
1,2,3,4,6,7,8-hepta CDF	0.01
1,2,3,4,7,8,9-hepta CDF	0.01
octa CDF	0.001

Antidegradation (Page 34): Special Provision VI.C.2.e (pages 34 and 35 of the Tentative Order) requires the City to submit a Tier II antidegradation study to assess whether mass emissions of phenol result in a "significant" water quality effect. The City will submit the antidegradation study as required under Special Provision VI.C.2.e of the Tentative Order, but the City feels that our NPDES application has already demonstrated compliance with the Tier II "significance" requirement.

As shown in these submitted documents, phenol concentrations at the Zone of Initial Dilution (ZID) boundary are projected to be significantly less than half of the California Ocean Plan receiving water limits. Maximum projected ZID boundary concentrations are presented in Section B.7 of the Large Applicant Questionnaire (Volume III). As presented in Table III.B-22 of the Large Applicant Questionnaire (Volume III, page III.B-31), the maximum observed PLOO total phenol concentration during 2002-2006 was 25.6 μg/l. At an initial dilution of 204:1, this maximum observed 25.6 μg/l total phenol concentration results in a computed total phenol concentration at the ZID boundary of 0.12 μg/l. The 0.12 μg/l total phenol concentration is a tiny fraction of the Ocean Plan daily maximum receiving water standards of 120 μg/l for phenolic compounds and 4 μg/l for chlorinated phenolics. As presented in Table III.B.21 (page III.B.30 of the Large Applicant Questionnaire), the 90th percentile PLWTP phenol concentration during 2002-2006 was 16 μg/l. At an initial dilution of 204:1, this 90th percentile concentration corresponds to a receiving water concentration at the ZID boundary of 0.077 μg/l. This 0.077 μg/l value is a small fraction of the 6-month median Ocean Plan receiving water standards of 30 μg/l for phenolic compounds and 1 μg/l for chlorinated phenolics.

Even if future PLWTP effluent concentrations of phenol were to increase commensurate with projected PLOO flow increases, the phenol concentrations at the boundary of the ZID will remain well below half of the Ocean Plan receiving water limits. As shown in Tables III.B-21 and III.B-22 of the Large Applicant Questionnaire (Volume III) and within the Antidegradation Analysis (Volume II), this continued compliance is projected even if 100 percent of the total phenolics in the PLOO discharge were to be converted to chlorinated phenolics.

Biosolids Monitoring for Ammonia (Page 38): Special Provision VI.C.5.B.III.a (page 38 of the Tentative Order) would require the City to monitor biosolids for ammonia. This requirement appears to be a typographical error and should be removed. No need for such an analysis exists, and no approved analytical method exists for analyzing ammonia-nitrogen in biosolids.

Dilution Ranges for Bacteriological Analyses (Page 51): Compliance Determination VII.I.2.e.ii (page 51 of the Tentative Order) requires that dilutions for bacteriological analyses be performed so that the range of values extends from 2 to 16,000 CFU (colony forming units/100ml). The City's laboratory has historically achieved the following ranges in bacteriological analyses:

2 to 16,000/100ml CFU for total coliforms
2 to 12,000/100ml CFU for fecal coliforms
2 to 12,000/100ml CFU for enterococci

The City requests that Compliance Determination VII.I.2.e.ii be revised to reflect these historical ranges. These historically achieved ranges are based on standard dilution volumes of 0.5, 5.0, 50 milliliters and the acceptable plate count range specified in *Standard Methods for the Analysis of Water and Wastewater* (Standard Methods).

Per Standard Methods, the acceptable range per plate counts for the Membrane Filtration (MF) method are different for total coliforms than for fecal coliforms and enterococci. Plate counts of 20 to 80 CFU are acceptable for total coliforms. Plate counts of 20 to 60 are acceptable for fecal coliforms and enterococci. Applying the highest dilution and highest acceptable plate counts will provide the following highest reportable results:

Dilution	Maximum Acceptable Plate Count	Factor	Reportable Count (CFU/100ml)
0.5	80	200	16,000 (80x200)
0.5	60	200	12,000 (60x200)

Because the MF technique has a method limitation of 60 CFU for a countable plate for fecal coliforms and enterococci, it is not possible for a decimal dilution series to produce an upper limit of 16,000 CFU/100ml. To cover the 16,000 CFU/100ml range for fecal coliforms and enterococci, it would be necessary to use a decimal dilution that would yield a result above the 16,000 CFU/100ml. The drawback to this is that more error is introduced when the dilution series is expanded by using higher dilutions.

The Ocean Plan requirement for a range of 2 to 16,000 CFU/100ml is likely an inadvertent holdover from the old MTF (Multiple Tube Fermentation) method based on MPN (Most Probable Number) table used for estimating total and fecal coliform densities. Under the old MTF method (per Standard Methods), a 5-5-5 combination serial dilution yields a range of less than 2 to greater than 1,600 MPN/100ml using base dilutions of 10ml, 1.0ml and 0.1ml. By using a higher dilution series, countable plates will yield bacterial densities to 16,000 MPN/100 ml using the base range integers of the MPN table (see Table 9221:IV, Standard Methods, 21st Ed).

Increasing the required fecal coliform and enterococci ranges to 16,000 CFU/100ml provides no practical or regulatory benefit compared to the existing range of 12,000 CFU/100ml, in that:

- Historical receiving water counts are typically low, except when influenced by coastal runoff.
- Action level benchmarks defined in the Ocean Plan are >400 CFU/100 ml for fecal coliforms and >104 CFU/100 ml for enterococci. The benchmarks are more than two orders of magnitude below the currently achieved 12,000 CFU/100 ml range.
- Any seawater sample with a total coliform concentration ≥1000 CFU/100 ml and a fecal:total (F:T) ratio ≥0.1 is considered representative of contaminated waters. Samples that meet these criteria are used as indicators of the PLOO waste field or other sources of bacterial contamination.
- Samples with total coliform densities of 10,000 CFU/100 ml or more were immediately re-sampled. This total coliform resampling limit is more conservative than the currently achieved range of 12,000 CFU/100 ml for fecal coliforms and enterococci.

Semiannual SIU Compliance Report (Page 46): Special Provision VI.C.5.c.vi (page 46) requires semiannual SIU noncompliance status reports to be submitted by March 1 and September 1 of each year. Due to data availability limitations, the City requests that due dates for the semiannual SIU noncompliance reports be revised to April 1 and September 1.

PCBs (Page A-5): Tentative Order No. R9-2009-0001 (page A-5) restates the California Ocean Plan definition for PCBs which refers to Aroclors. It should be noted that the City's current required monitoring for sediment and fish tissues determines PCBs as congeners, whereas

Aroclors are measured for influent and effluent samples. It would be preferable to the City to make all required determinations for PCBs as congeners.

Attachment B (page B-1): If desired, the City can provide the Regional Board with a better quality bathymetric map of the PLOO area.

Location of "F" Stations (Page E-4): Table E-1 (page E-4 of the Monitoring and Reporting Program) provides a list of the various monitoring station locations. In 2003, the Regional Board approved modifications to the coordinates for the 36 new offshore "F" stations in order to align the stations along the 18m, 60m, 80m and 98m depth contours. The coordinates for the F stations presented in Table E-1 are the original nominal station locations listed in Addendum 1 to Order NO. R9-2002-0025 and do not reflect the revised station locations. If desired, the City can forward an electronic file to the Regional Board that identifies the exact locations of the currently-approved "F" stations.

Emergency Connection Sampling (Page E-7): Table E-2 (page E-7 of the Monitoring and Reporting Program) requires that flows discharged to the Metro System from the Tijuana emergency connection be monitored on a daily basis for: BOD, total dissolved solids, total suspended solids, volatile suspended solids, oil and grease, floatable particulates, settleable solids, turbidity, and pH. The City requests that Table E-2 be modified to require weekly monitoring of these constituents only at times when flow is present.

Chromium III Monitoring (Page E-8/Page E-10): Footnote 2 to Table E-2 (page E-8 of the Monitoring and Reporting Program) allows total chromium monitoring to be used for purposes of assessing compliance with Chromium VI. Footnote 2 should also be applied to Chromium III within Table E-2 on E-8. Similarly, Footnote 2 should be applied to Chromium III within Table E-3 on page E-10.

Chronic Toxicity Screening (Page E-14): Chronic Toxicity Testing Requirement V.A.1 (page E-14) requires annual screening to determine the most sensitive species, and requires continued sampling of the most sensitive species. Further, re-screening is required at different times each calendar year. As currently written, Chronic Toxicity Testing Requirement V.A.1 would periodically entail re-screening events during consecutive semi-annual cycles. Such consecutive re-screening would not provide an opportunity to make use of the 'selected' most sensitive species from the prior screening. The City recommends retaining the chronic toxicity screening approach set forth in Order No. R9-2002-0025 where biennial screening occurs and three screening tests are performed if the first screening test indicates that a different species is most sensitive.

Split Samples for Bacteriological Contaminants (Page E-14): Footnote 15 to Table E-3 (page E-14 of the Monitoring and Reporting Program) requires split samples for total chlorine residual and bacteriological parameters. As noted above, this requirement should be modified to reflect the fact that continuous chlorine residual monitoring may not be feasible. Until continuous sampling can be demonstrated to be feasible and reliable, the City proposes to collect four samples per day for analysis of total chlorine residual. The requirement for splitting samples for concurrent analysis of effluent bacteriological concentrations is unnecessary for assessing compliance, and should be deleted.

It should be noted that, as part of its pilot project chlorination program, the City is collecting split samples for chlorine residual and bacteriological parameters for research purposes in assessing the effectiveness of pilot chlorination facilities and operations. No need exists for incorporating this research-related temporary split sample monitoring into the NPDES permit as a permanent requirement. The Tentative Order already provides for substantial receiving water bacteriological analyses for purposes of assessing Ocean Plan compliance - requiring four effluent samples per day for each bacteriological parameter is unnecessary and is not useful for assessing compliance.

Chronic Toxicity Testing pH Drift (Page E-17): Chronic Toxicity Testing Requirement V.A.3.j sets forth testing requirements for assessing chronic toxicity effects due to pH drift. It is unlikely that ammonia and pH drift will affect chronic toxicity testing at a 204:1 initial dilution. Such ammonia and pH drift, however, may affect acute toxicity testing (Section V.B). The City recommends that the ammonia and pH drift requirements set forth in Chronic Toxicity Testing Requirement V.A.3.j be deleted, but that similar ammonia and pH drift requirements be added to Acute Toxicity Testing Requirement V.B.3.j (page E-20).

Chronic Toxicity Testing (Page E-17): Chronic Toxicity Testing Requirement V.A.4 (page E-17) requires reporting TUc using both NOEC and LC_{25}. Elsewhere in the tentative permit, TUc compliance is determined on the basis of NOEC only. Reporting two TUc values may cause inconsistent interpretation of compliance with effluent limitation. To avoid the potential for misinterpretation, the City recommends that TUc be reported as [100/NOEC] and that LC_{25} be reported in its original form.

Acute Toxicity Screening (Page E-18): Acute Toxicity Testing Requirement V.B.1 (page E-18) requires annual screening to determine the most sensitive species, and requires continued sampling of the most sensitive species. Further, re-screening is required at different times each calendar year. As currently written, Acute Toxicity Testing Requirement V.B.1 would periodically entail re-screening events during consecutive semi-annual cycles. Such consecutive re-screening would not provide an opportunity to make use of the 'selected' most sensitive species from the prior screening. The City recommends retaining the biennial acute toxicity screening approach set forth in Order No. R9-2002-0025. The City also recommends using results from three screening events if the first screening test indicates that a different species is most sensitive.

Offshore Sediment Monitoring (Page E-25): Offshore sediment monitoring provisions are set forth in Core Monitoring Requirement VIII.A.3 (page E-25 of the Monitoring and Reporting Program). In the first paragraph on page E-25 the requirement states that organisms should be fixed in 15% formalin and then transferred to 70%. The City suggests the following modification as the most appropriate procedure.

> *The benthic organisms retained on the sieve shall be fixed in 10 percent buffered formalin and transferred to at least 70 percent ethanol within two to seven days for storage*"

Also, in the second paragraph on page E-25 it states that: "The following parameters shall be summarized by station." It is more appropriate to calculate these parameters by sample (grab) and then summarize them by station. The City recommends that this sentence be revised to read:

The following parameters shall be calculated for each grab sample and summarized by station as appropriate.

Following the above paragraph on page E-25, eight benthic community parameters are listed, including average number of species (species richness) per 0.1 m^2, total number of species per station, total numerical abundance, infaunal trophic index (ITI), benthic response index (BRI), Swartz' 75% dominance index, Shannon-Weiner's diversity index (H'), and Pileou's evenness. The City recommends deleting the ITI requirement, as the ITI is no longer considered a valuable index for community assessment. This change would be consistent with a similar modification to the recently issued Monitoring and Reporting Program for the South Bay Water Reclamation Plant (SBWRP: Order No. R9-2006-0067, NPDES No. CA0109045).

The City requests that this list of benthic community parameters be clarified as follows:

a. *number of species per 0.1 m^2 (species richness)*
b. *total (cumulative) number of species per station*
c. *total numerical abundance*
d. *benthic response index (BRI)*
e. *Swartz's 75% dominance index*
f. *Shannon's diversity index (H')*
g. *Pielou's evenness index (J')*

Fish Tissue Monitoring (Page E-26): Receiving Water Requirement VIII.A.4 (page E-26 of the Monitoring and Reporting Program) sets forth requirements for trawls and tissue analysis. The City recommends that the requirements regarding chemical analyses of fish tissues (page E-26) be revised to clarify several potential ambiguities, The City recommends the following three paragraphs be substituted for the 3-paragraph tissue analysis section presented on page E-26:

Chemical analyses of fish tissues shall be performed annually on target species collected at or near the trawl and rig fishing stations. The various stations are classified into zones for the purpose of collecting sufficient numbers of fish for tissue analyses. Trawl Zone 1 represents the near-field zone, defined as the area within a 1-km radius of stations SD-010 and/or SD-012; Trawl Zone 2 is considered the northern far-field zone, defined as the area within a 1-km radius of stations SD-013 and/or SD-014; Trawl Zone 3 represents the LA-5 disposal site zone, and is defined as the area centered within a 1-km radius of station SD-008; Trawl Zone 4 is considered the southern far-field zone, and is defined as the area centered within a 1-km radius of station SD-007. Rig Fishing Zone 1 is the near-field area centered within a 1-km radius of station RF-001; Rig Fishing Zone 2 is considered the far-field area centered within a 1-km radius of station RF-002. There are no depth requirements for these six zones with regards to the collection of fishes for tissue analysis.

Liver tissues shall be analyzed annually (i.e., during October) from fishes collected in each of the above four trawl zones. No more than a maximum of five 10-minute (bottom time) trawls shall be required per zone in order to acquire sufficient numbers of fish for composite samples; these trawls may occur anywhere within a defined zone. Three replicate composite samples shall be prepared from each trawl zone, with each composite consisting of tissues from at least three individual fish of the same species. These liver tissue samples shall be analyzed for the presence and concentrations of lipids, PCBs (congeners), chlorinated *pesticides, and the following three metals: mercury, arsenic and selenium. The species of fish targeted for tissue analysis from the trawl zones shall be primarily flatfish, including, but not limited to, the Pacific sanddab (Citharichthys sordidus) and longfin sanddab (Citharichthys xanthostigma). If sufficient numbers of these primary species are not present in a particular zone (i.e., cannot be collected during five trawls), secondary target species such as other flatfish or rockfish captured in these trawls may be used as necessary.*

Muscle tissues shall be analyzed annually (i.e., during October) from fishes collected in each of the above two rig fishing zones in order to monitor the uptake of pollutants in species and tissues that are consumed by humans. These species shall be representative of those caught by recreational and/or commercial fishery activities in the region. All fish shall be collected by hook and line or by setting baited lines or traps within the two rig fishing zones described above. The species targeted for analysis in these zones shall be primarily rockfish, which may include, but are not limited to, the vermilion rockfish (Sebastes miniatus) and the copper rockfish (Sebastes caurinus). If sufficient numbers of these primary species are not present or cannot be caught in a particular zone, secondary target species such as other rockfish or scorpionfish may be collected and analyzed as necessary. Three replicate composite samples of the target species shall be obtained from each zone, with each composite consisting of a minimum of three individual fish. Muscle tissues shall be removed from the composite samples and analyzed for the presence and concentrations of lipids, PCBs (congeners), chlorinated pesticides, and the following nine metals: arsenic, cadmium, chromium, copper, lead, mercury, selenium, tin and zinc.

Strategic Process Studies (Page E-27): Because of the adaptive nature of special projects, or the need or opportunity to begin new projects mid-year, modifications to the proposed project approval procedures may be necessary from time to time in order to conduct the most efficient and scientifically sound studies. To accommodate such needs, the City recommends that the following sentence be added to VIII.B Strategic Process Studies:

Modifications to the above schedule in order to address the adaptive nature of strategic process studies may be approved if agreed upon by the Executive Officer, USEPA and the Discharger.

SMR Submittals (Page E-30): Reporting Requirement IX.B.1 (page E-30 of the Monitoring and Reporting Program) requires Self Monitoring Reports (SMRs) to be submitted in hard copy. The City recommends that this requirement be modified to allow the City to submit the SMRs in "pdf" electronic format if so directed by the Executive Officer.

DMR Submittal Forms (Page E-33): Reporting Requirement IX.C.3 (page E-33 of the Monitoring and Reporting Program) requires Discharger Monitoring Reports (DMRs) to be submitted on "forms that follow the exact same format as USEPA Form 3320-1".

Discharger monitoring result forms currently required by the State Board are similar to but do not follow the "exact same format" as Form 3320-1. The City recommends that Reporting Requirement IX.C.3 be reworded to require DMR formats acceptable to the State Board and Regional Board.

Applicability of OPRA (Page F-19): The City continues to comply with the provisions of the 1994 Ocean Pollution Reduction Act (OPRA). For the record, however, the City disagrees with the assertion that the requirements of the 1994 Ocean Pollution Reduction Act (OPRA) apply to the renewal of Order No. R9-2002-0025. The City recognizes and appreciates that the tentative decision is issued without prejudice to the City to contest the applicability of OPRA in any future NPDES permit, as indicated in the memorandum dated December 2, 2008 by Wayne Nastri, issuing the tentative decision.

Minor Corrections/Typographical Errors: A list of minor corrections and typographical errors is presented on the following pages.

Thank you for the opportunity to present comments on Tentative Order No. R9-2009-0001. In order to facilitate your review these comments are being provided early in the allocated comment period. If, upon further review the City feels it necessary, additional comments may be provided before the end of the comment period.

Please contact Alan Langworthy of my staff at (619) 758-2300 regarding any questions. Staff is available to meet with you to discuss these comments if necessary.

Sincerely,

J.M. Barrett
Director of Public Utilities

cc: Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

Alan Langworthy
Deputy MWWD Director

ADDITIONAL MINOR CORRECTIONS AND TYPOS:

1. Limitations & Discharge Requirements, Page 6, line 17: In the second line under 'Facility Description' change "advance" to "advanced" (i.e., add a "d").
2. References to Department of Health Services, Page 23, 24, A-5: The agency formerly known as the California Department of Health Services (DHS) is now titled the Department of Public Health (DPH).
3. Limitations & Discharge Requirements, Page 49, line 11: insert the word "the" between "at" and "location."
4. Limitations & Discharge Requirements, Page 51, line 31: change "or" to "of" at the end of the line.
5. Attachment A – Definitions, Page A-1 (AWEL): The first word of the definition should be "The" (not "he").
6. Attachment C – Wastewater Flow Schematic, Page C-1: Hydrogen peroxide addition should be prior to the fine screens at the facility.
7. Attachment E – MRP, Page E-4, Table E-1: Under the "Monitoring Location Description" for location EMG-001 (3rd column, 3rd row) change "Boarder" to "Border" (i.e., delete the "a).
8. Attachment E - MRP, Page E-8, Table E-2: The table should read: Total Dissolved Solids (TDS).
9. Attachment E – MRP, Page E-18, line 32: Correct the spelling of the species name from "variegates" to "varigatus" (i.e., species = *Cyprinodon varigatus*).
10. Attachment E – MRP, Page E-22, line 9: Change "evaluate" to "evaluated" (i.e., add a "d").
11. Attachment E – MRP, Page E-22, line 18: Insert the word "to" between "designed" and "help."
12. Attachment E – MRP, Page E-25, line 20: Change "Pielou" to "Pielou's" (i.e., Pielou's Evenness). [Note: change included in previous comment on revising this section]
13. Attachment E – MRP, Page E-25, line 29: Change "an area" to "two areas.
14. Attachment E – MRP, Page E25 (a. Community Trawls): To clarify that the "community structure analysis" concerns only fish and not invertebrates, insert the words "For fish," at the beginning of the second sentence so that it reads: *For fish, community structure analysis shall consist of determining...*
15. Attachment E – MRP, Page E-25 (Section VIII.A.3, Offshore Sediment Monitoring): Delete the words "to use" so that last sentence of the first paragraph on page E-25 reads: *This enumeration and identification of organisms continues the historical database developed by the Discharger.*
16. Attachment E – MRP, Page E-26: Correct the spelling of the species name from "caurinum" to "caurinus" (i.e., species = *Sebastes caurinus*). [Note: change included in revised paragraphs for this section]
17. Attachment E – MRP, Page E-27, line 19: Change "studis" to "studies" (i.e., add an "e").

18. Attachment E – MRP, Page E-28, line 15: Change the last word "year" to "years."
19. Attachment E – MRP, Page E-28, line 17: Insert "and procedures" after the word "schedule."
20. Attachment E – MRP, Page E-28, line 18: Change the word "year's" to the word "project's".
21. Attachment F – Fact Sheet, Page F-7 (Section II.A.5): Pump Station No. 1 adds ferrous chloride for odor control.
22. Attachment F – Fact Sheet, Page F-7 (Section II.A.6): Pump Station No. 2 adds hydrogen peroxide to regenerate the iron salts.
23. Attachment F – Fact Sheet, Page F-7 (Section II.A.7): PLWTP adds hydrogen peroxide to regenerate the iron salts upstream of the facility to enhance settling and assist in stabilization and odor control.
24. Attachment F – Fact Sheet, Page F-8 (Section II.A.7): In paragraph 2 on page F-8 the hydrogen peroxide should be upstream of the facility.
25. Attachment F – Fact Sheet, Page F-36 (Section IV.E, Table F-16): The performance goal for acute toxicity is incorrectly listed as "61.5 TUa" in Table F-16. Replace with the correct performance goal of 6.42 TUa.
26. Attachment F – Fact Sheet, Page F-47 (Section VI.D.1.b): To reflect the fact that not all requirements are carried over, insert the word "General" at the beginning of this sentence (i.e., *General microbiological monitoring requirements have been carried over from the previous Order.*).
27. Attachment F – Fact Sheet, Page F-47 (Section VI.D.1.b): The Microbiological paragraph (VI.D.1.b) should be modified to note that offshore stations are monitored quarterly for enterococci, but not for fecal coliform and total coliform.
28. Attachment F – Fact Sheet, Pages F-47 to F-48 (Section VI.D.1.c): To reflect the fact that not all requirements are carried over, insert the word "General" at the beginning of this sentence (i.e., *General sediment monitoring requirements have been carried over from the previous Order.*).
29. Attachment F – Fact Sheet, Pages F-48 (Section VI.D.1.d): To reflect the fact that not all requirements are carried over from the previous permit, insert the word "General" at the beginning of this sentence (i.e., *General fish and invertebrate monitoring requirements have been carried over from the previous Order.*)
30. Attachment F – Fact Sheet, Pages F-48 (Section VI.D.1.d): Revise the first paragraph summarizing the requirements for community trawls (fishes and invertebrates) and fish tissue sampling to make it consistent with similar sections in Attachment E.

City of Imperial Beach, California

www.cityofib.com

OFFICE OF THE MAYOR

Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall.

Dear Ms. Stuber:

The City of Imperial Beach is pleased to provide comments on the 301(h) tentative decision and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant.

The Point Loma Plant is a major component of the Metropolitan Sewerage System that is operated by the City of San Diego, with participation by fifteen other municipalities and agencies. Nearly one third of the total flow to the system originates from these participating agencies. As a participating agency, the City of Imperial Beach has a unique interest in decisions that affect the operation of the Metro System. Additionally, as a member of the greater San Diego area community, we are also concerned that the public health and environment of the local area is protected.

The City of Imperial Beach would like to express its complete support and concurrence with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for San Diego's Point Loma Wastewater Treatment Plant. We feel strongly that the combination of chemically assisted primary treatment, deep ocean outfall and Comprehensive Ocean monitoring has proven to be protective of the public health and environment in the local area. The tentative decision for approval of the variance is appropriate and correct.

Accordingly, the City of Imperial Beach urges the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary actions to make this decision final at the earliest possible date.

Sincerely,

James C. Janney
Mayor
City of Imperial Beach

cc: City Council
Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Doc Scanned On: 1/12/09
M. Carvajal Time: 10:18

2009 JAN -9 P 1:17

SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

825 Imperial Beach Blvd., Imperial Beach, CA 91932 Tel: (619) 423-8303 fax: (619) 628-1395

CALIFORNIA
NATIONAL CITY
1887
INCORPORATED

January 5, 2009

Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall.

Dear Ms. Stuber:

The City of National City is pleased to provide comments on the 301(h) tentative decision and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant.

The Point Loma Plant is a major component of the Metropolitan Sewerage System that is operated by the City of San Diego, with participation by fifteen other municipalities and agencies. Nearly one third of the total flow to the system originates from these participating agencies. As a participating agency, the City of National City has a unique interest in decisions that effect the operation of the Metro System. Additionally, as a member of the greater San Diego area community, we are also concerned that the public health and environment of the local area is protected.

The City of National City would like to express its complete support and concurrence with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for San Diego's Point Loma Wastewater Treatment Plant. We feel strongly that the combination of chemically assisted primary treatment, deep ocean outfall and comprehensive ocean monitoring has proven to be protective of the public health and environment in the local area. The tentative decision for approval of the variance is appropriate and correct.

Accordingly, the City of National City urges the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary actions to make this decision final at the earliest possible date.

Sincerely,

Chris Zapata,
City Manager

cc: Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

CITY OF EL CAJON

CITY MANAGER

January 5, 2009

Robyn Stuber
U.S. Environmental Protection Agency, Region IX
NPDES Permits Office (WTR-5)
75 Hawthorne Street
San Francisco, CA 94105

SUBJECT: CRU: 9 000000275: MVALD

Draft NPDES Permit No. CA107409 and Tentative Order No. R9-2009-0001 for the City of San Diego E.W. Blom Point Loma Metropolitan Wastewater Treatment Plant Discharge to the Pacific Ocean through the Point Loma Ocean Outfall.

Dear Ms. Stuber:

The City of El Cajon is pleased to provide comments on the 301(h) tentative decision and draft NPDES permit for the City of San Diego's E.W. Blom Point Loma Wastewater Treatment Plant.

The Point Loma Plant is a major component of the Metropolitan Sewerage System that is operated by the City of San Diego, with participation by fifteen other municipalities and agencies. Nearly one third of the total flow to the system originates from these participating agencies. As a participating agency, the City of El Cajon has a unique interest in decisions that effect the operation of the Metro System. Additionally, as a member of the greater San Diego area community, we are also concerned that the public health and environment of the local area is protected.

The City of El Cajon would like to express its complete support and concurrence with the tentative decision to approve a 301(h) variance from the federal secondary treatment standards for San Diego's Point Loma Wastewater Treatment Plant. We feel strongly that the combination of chemically assisted primary treatment, deep ocean outfall and comprehensive ocean monitoring has proven to be protective of the public health and environment in the local area. The tentative decision for approval of the variance is appropriate and correct.

Accordingly, the City of El Cajon urges the Regional Water Quality Control Board and United States Environmental Protection Agency to take the necessary actions to make this decision final at the earliest possible date.

Sincerely,

Kathi Henry
Kathi Henry
City Manager

cc: Melissa Valdovinos
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Doc Scanned On: 1/8/09
M. Carvajal Time: 4:38

2009 JAN -8 P 4: 02

SAN DIEGO REGIONAL
WATER QUALITY
CONTROL BOARD

condition any stay granted under this paragraph on requiring the filing of a bond or other appropriate security to assure timely compliance with the requirements from which a modification is sought.

(3) COMPLIANCE REQUIREMENTS UNDER SUBSECTION (G)

(A) EFFECT OF FILING—An application for a modification under subsection (g) of this section and a petition for listing of a pollutant as a pollutant for which modifications are authorized under such subsection shall not stay the requirement that the person seeking such modification or listing comply with effluent limitations under this chapter for all pollutants not the subject of such application or petition.

(B) EFFECT OF DISAPPROVAL—Disapproval of an application for a modification under subsection (g) of this section shall not stay the requirement that the person seeking such modification comply with all applicable effluent limitations under this chapter.

(4) DEADLINE FOR SUBSECTION (G) DECISION—An application for a modification with respect to a pollutant filed under subsection (g) of this section must be approved or disapproved not later than 365 days after the date of such filing; except that in any case in which a petition for listing such pollutant as a pollutant for which modifications are authorized under such subsection is approved, such application must be approved or disapproved not later than 365 days after the date of approval of such petition.

(5) EXTENSION OF APPLICATION DEADLINE

(A) IN GENERAL—In the 180-day period beginning on October 31, 1994, the city of San Diego, California, may apply for a modification pursuant to subsection (h) of this section of the requirements of subsection (b)(1)(B) of this section with respect to biological oxygen demand and total suspended solids in the effluent discharged into marine waters.

(B) APPLICATION—An application under this paragraph shall include a commitment by the applicant to implement a waste water reclamation program that, at a minimum, will—

(i) achieve a system capacity of 45,000,000 gallons of reclaimed waste water per day by January 1, 2010; and

(ii) result in a reduction in the quantity of suspended solids discharged by the applicant into the marine environment during the period of the modification.

(C) ADDITIONAL CONDITIONS—The Administrator may not grant a modification pursuant to an application submitted under this paragraph unless the Administrator determines that such modification will result in removal of not less than 58 percent of the biological oxygen demand (on an annual average) and not less than 80 percent of total suspended solids (on a monthly average) in the discharge to which the application applies.

(D) PRELIMINARY DECISION DEADLINE—The Administrator shall announce a preliminary decision on an application submitted under this paragraph not later than 1 year after the date the application is submitted.

(k) INNOVATIVE TECHNOLOGY—In the case of any facility subject to a permit under section 1342 of this title which proposes to comply with the requirements of subsection (b)(2)(A) or (b)(2)(E) of this section by replacing existing production capacity with an innovative production process which will result in an effluent reduction significantly greater than that required by the limitation otherwise applicable to such facility and moves toward the national goal of eliminating the discharge of all pollutants, or with the installation of an innovative control technique that has a substantial likelihood for enabling the facility to comply with the applicable effluent limitation by achieving a significantly greater effluent reduction than that required by the applicable effluent limitation and moves toward the national goal of eliminating the discharge of all pollutants, or by achieving the required reduction with an innovative system that has the potential for significantly lower costs than the systems which have been determined by the Administrator to be economically achievable, the Administrator (or the State with an approved program under section 1342 of this title, in consultation with the Administrator) may establish a date for compliance under subsection (b)(2)(A) or (b)(2)(E) of this section no later than two years after the date for compliance with such effluent limitation which would otherwise be applicable under such subsection, if it is also determined that such innovative system has the potential for industrywide application.

(*l*) TOXIC POLLUTANTS—Other than as provided in subsection (n) of this section, the Administrator may not modify any requirement of this section as it applies to any specific pollutant which is on the toxic pollutant list under section 1317(a)(1) of this title.

(m) MODIFICATION OF EFFLUENT LIMITATION REQUIREMENTS FOR POINT SOURCES— (1) The Administrator, with the concurrence of the State, may issue a permit under section 1342 of this title which modifies the requirements of subsections (b)(1)(A) and (b)(2)(E) of this section, and of section 1343 of this title, with respect to effluent limitations to the extent such limitations relate to biochemical oxygen demand and pH from discharges by an industrial discharger in such State into deep waters of the territorial seas, if the applicant demonstrates and the Administrator finds that—

(A) the facility for which modification is sought is covered at the time of the enactment of this subsection by National Pollutant Discharge Elimination System permit number CA0005894 or CA0005282;

(B) the energy and environmental costs of meeting such requirements of subsections (b)(1)(A) and (b)(2)(E) of this section and section 1343 of this title exceed by an unreasonable amount the benefits to be obtained, including the objectives of this chapter;

(C) the applicant has established a system for monitoring the impact of such discharges on a representative sample of aquatic biota;

(D) such modified requirements will not result in any additional requirements on any other point or nonpoint condition any stay granted under this paragraph on requiring the filing of a bond or other appropriate security to assure timely compliance with the requirements from which a modification is sought.

(3) COMPLIANCE REQUIREMENTS UNDER SUBSECTION (G)

(A) EFFECT OF FILING—An application for a modification under subsection (g) of this section and a petition for listing of a pollutant as a pollutant for which modifications are authorized under such subsection shall not stay the requirement that the person seeking such modification or listing comply with effluent limitations under this chapter for all pollutants not the subject of such application or petition.

(B) EFFECT OF DISAPPROVAL—Disapproval of an application for a modification under subsection (g) of this section shall not stay the requirement that the person seeking such modification comply with all applicable effluent limitations under this chapter.

(4) DEADLINE FOR SUBSECTION (G) DECISION—An application for a modification with respect to a pollutant filed under subsection (g) of this section must be approved or disapproved not later than 365 days after the date of such filing; except that in any case in which a petition for listing such pollutant as a pollutant for which modifications are authorized under such subsection is approved, such application must be approved or disapproved not later than 365 days after the date of approval of such petition.

(5) EXTENSION OF APPLICATION DEADLINE

(A) IN GENERAL—In the 180-day period beginning on October 31, 1994, the city of San Diego, California, may apply for a modification pursuant to subsection (h) of this section of the requirements of subsection (b)(1)(B) of this section with respect to biological oxygen demand and total suspended solids in the effluent discharged into marine waters.

(B) APPLICATION—An application under this paragraph shall include a commitment by the applicant to implement a waste water reclamation program that, at a minimum, will—

(i) achieve a system capacity of 45,000,000 gallons of reclaimed waste water per day by January 1, 2010; and

(ii) result in a reduction in the quantity of suspended solids discharged by the applicant into the marine environment during the period of the modification.

(C) ADDITIONAL CONDITIONS—The Administrator may not grant a modification pursuant to an application submitted under this paragraph unless the Administrator determines that such modification will result in removal of not less than 58 percent of the biological oxygen demand (on an annual average) and not less than 80 percent of total suspended solids (on a monthly average) in the discharge to which the application applies.

(D) PRELIMINARY DECISION DEADLINE—The Administrator shall announce a preliminary decision on an application submitted under this paragraph not later than 1 year after the date the application is submitted.

(k) INNOVATIVE TECHNOLOGY—In the case of any facility subject to a permit under section 1342 of this title which proposes to comply with the requirements of subsection (b)(2)(A) or (b)(2)(E) of this section by replacing existing production capacity with an innovative production process which will result in an effluent reduction significantly greater than that required by the limitation otherwise applicable to such facility and moves toward the national goal of eliminating the discharge of all pollutants, or with the installation of an innovative control technique that has a substantial likelihood for enabling the facility to comply with the applicable effluent limitation by achieving a significantly greater effluent reduction than that required by the applicable effluent limitation and moves toward the national goal of eliminating the discharge of all pollutants, or by achieving the required reduction with an innovative system that has the potential for significantly lower costs than the systems which have been determined by the Administrator to be economically achievable, the Administrator (or the State with an approved program under section 1342 of this title, in consultation with the Administrator) may establish a date for compliance under subsection (b)(2)(A) or (b)(2)(E) of this section no later than two years after the date for compliance with such effluent limitation which would otherwise be applicable under such subsection, if it is also determined that such innovative system has the potential for industrywide application.

(*l*) TOXIC POLLUTANTS—Other than as provided in subsection (n) of this section, the Administrator may not modify any requirement of this section as it applies to any specific pollutant which is on the toxic pollutant list under section 1317(a)(1) of this title.

(m) MODIFICATION OF EFFLUENT LIMITATION REQUIREMENTS FOR POINT SOURCES— (1) The Administrator, with the concurrence of the State, may issue a permit under section 1342 of this title which modifies the requirements of subsections (b)(1)(A) and (b)(2)(E) of this section, and of section 1343 of this title, with respect to effluent limitations to the extent such limitations relate to biochemical oxygen demand and pH from discharges by an industrial discharger in such State into deep waters of the territorial seas, if the applicant demonstrates and the Administrator finds that—

(A) the facility for which modification is sought is covered at the time of the enactment of this subsection by National Pollutant Discharge Elimination System permit number CA0005894 or CA0005282;

(B) the energy and environmental costs of meeting such requirements of subsections (b)(1)(A) and (b)(2)(E) of this section and section 1343 of this title exceed by an unreasonable amount the benefits to be obtained, including the objectives of this chapter;

(C) the applicant has established a system for monitoring the impact of such discharges on a representative sample of aquatic biota;

(D) such modified requirements will not result in any additional requirements on any other point or nonpoint