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San Francisco Bay Region

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Certified Mail No. 70010320000236095923
Mr. William Toci
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NOTICE: **FINAL ORDER AND SELF-MONITORING PROGRAM FOR CITY OF BURLINGAME WASTEWATER TREATMENTPLANT, BURLINGAME, SAN MATEO COUNTY. (NPDES PERMIT REISSUANCE)**

Dear Mr. Toci:

The Regional Board adopted Order No. RB-2002-0027 at its regular monthly meeting on Wednesday, February 27, 2002. I have enclosed the adopted Order which reissues the NPDES permit for the City of Burlingame Wastewater Treatment Plant.

Should you have any questions or comments regarding this matter, please contact Ken Katen of my staff at (510) 622-2485 or email him at kk@rb2.swrcb.ca.gov.

Sincerely,

Lawrence P. Kolb
for

Loretta K. Barsamian
Executive Officer

Enclosure: Final Order and Fact Sheet
cc: Mailing List

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

ORDER NO. R2-2002-0027

NPDES PERMIT NO. CA0037788

WASTE DISCHARGE REQUIREMENTS FOR:

CITY OF BURLINGAME

BURLINGAME, SAN MATEO COUNTY

February 27, 2002

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

FINAL ORDER NO. R2-2002-0027

NPDES PERMIT NO. CA0037788

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

CITY OF BURLINGAME

WASTEWATER TREATMENT PLANT

BURLINGAME, SAN MATEO COUNTY

Findings

The California Regional Water Quality Control Board, San Francisco Bay Region, (the Board) finds that:

1. *Discharger and Permit Application.* The City of Burlingame (the Discharger), has applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

Facility Description

2. *Facility Location, Service Area, Population, and Capacity.* The discharger owns and operates the Burlingame Wastewater Treatment Plant (WWTP), located at 1103 Airport Boulevard, Burlingame, San Mateo County, California. The plant provides secondary level treatment of wastewater from domestic, commercial and industrial sources within the City of Burlingame. The discharger's service area has a present population of about 37,000. The plant has an average dry weather flow design capacity of 5.5 million gallons per day (MGD) and a peak wet weather secondary treatment capacity of 16 MGD. The discharger has a primary treatment capacity of 25 MGD and disinfection capacity of 20 MGD. During wet weather operations, the aeration basins and secondary clarifiers may be bypassed, with the final effluent being a blend of disinfected, primary-treated effluent and disinfected, secondary-treated effluent. Blending is done to avoid hydraulic overload of the activated sludge process and associated solids inventory washout. The plant presently discharges an average dry weather flow of 3.56 MGD, an annual average flow of 4.08 MGD, and maximum wet weather flow rate of 14.17 MGD (1999 data). A location map of the Discharger's facilities is included as Attachment A of this Order.

3. *Discharge Location – San Francisco Bay.* Treated, disinfected wastewater is discharged to the North Bayside System Unit (NBSU) force main. The members of NBSU are the Cities of Milbrae, South San Francisco, and San Bruno, and San Francisco International Airport. Treated, disinfected wastewater collected by NBSU is dechlorinated at the NBSU dechlorination plant, and the combined effluent is discharged to Lower San Francisco Bay via a submerged deepwater outfall at Latitude 37 degrees, 39 minutes, 55 seconds N and Longitude 122 degrees, 21 minutes, 41 seconds W. The

discharge achieves a receiving water to effluent initial dilution of at least 10:1 at all times, and is classified by the Board as a deepwater discharge.

4. Waste Discharge Requirements Order No. 95-208, as amended by Order 98-117, both adopted by the Board, previously governed these discharges.

5. The U.S. Environmental Protection Agency (U.S. EPA) and the Board have classified this discharge as a major discharge.

Treatment Process Description

6. *Treatment Process.* The discharger's treatment process consists: of bar screening, grit removal, primary clarification, biological secondary treatment via activated sludge, secondary clarification, and chlorination. Treated effluent is dechlorinated by NBSU as described in Finding 3, above.

7. *Solids Treatment, Handling and Disposal.* Solids removed from the wastewater stream are thickened, anaerobically digested, and then dewatered by a belt filter press. In 2000, the WWTP generated a total volume of 690.5 dry metric tons of Class B biosolids for land application. The Discharger currently contracts through its agent, USFilter, to have all the biosolids generated at the WWTP hauled and land applied by SynaGro West, Inc., its contract land applier. Under the terms of that contract, SynaGro is responsible for complying with the monitoring and reporting requirements of the 40 CFR 503 regulations for the biosolids, and files annual reports with U.S. EPA Region IX. (See Section D. Sludge Management Practices, below)

Stormwater Discharge Description

Treatment Plant Stormwater Discharges.

8. a. *Regulations.* Federal Regulations for stormwater discharges were promulgated by the U.S. EPA on November 19, 1990. The regulations [40 CFR Parts 122, 123, and 124] require specific categories of industrial activity (industrial stormwater) to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial stormwater discharges.

   b. *Coverage under Statewide Stormwater General Permit.* The State Water Resources Control Board (the State Board) adopted a statewide NPDES permit for stormwater discharges associated with industrial activities (NPDES General Permit CAS000001) on November 19, 1991, amended it on September 17, 1992, and reissued it on April 17, 1997. The WWTP is covered under NPDES General Permit CAS000001.

Regional Monitoring Program

9. On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement a Regional Monitoring Program for the San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region, under authority of section 13267 of California Water Code, to report on the water quality of the estuary. These permit holders, including the Discharger, responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute (formerly the Aquatic Habitat Institute). This effort is known as the San Francisco Bay Regional Monitoring Program for Trace Substances (the RMP). This Order specifies that the Discharger shall continue to participate in the RMP, which includes collection

of data on pollutants and toxicity in water, sediment and biota of the estuary. Annual reports from the RMP are referenced elsewhere in this Order.

Applicable Plans, Policies and Regulations

Basin Plan

10. The Board adopted a revised *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan) on June 21,1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Board on July 20, 1995 and the Office of Administrative Law on November 13, 1995. A summary of the regulatory provisions is contained in Title 23 of the California Code of Regulations, Section 3912. The Basin Plan identifies beneficial uses and water quality objectives for waters of the state in the Region, including surface waters and groundwaters. The Basin Plan also identifies discharge prohibitions intended to protect identified beneficial uses. This Order implements the plans, policies and provisions of the Basin Plan.

Beneficial Uses

11. Beneficial uses for the Lower San Francisco Bay receiving water, as identified in the Basin Plan (Table 2-4 on pg. 2-17), and based on known uses of the receiving waters in the vicinity of the discharge, are:

    - Industrial Service Supply
    - Navigation
    - Water Contact Recreation
    - Non-contact Water Recreation
    - Ocean Commercial and Sport Fishing
    - Wildlife Habitat
    - Preservation of Rare and Endangered Species
    - Fish Migration
    - Shellfish Harvesting
    - Estuarine Habitat

State Implementation Policy (SIP)

12. The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Plan or SIP) on March 2, 2000 and the Office of Administrative Law (OAL) approved the SIP on April 28, 2000. By letter dated May 1, 2001, the U.S. EPA approved "those portions of the Policy that are subject to EPA's water quality standard approval authority under section 303(c) of the CWA." The letter indicated that EPA would comment on NPDES permit-related provisions separately. The letter also indicated that the longer TMDL-related compliance schedule provisions continue to be under U.S. EPA review. EPA approved Sections 1.1; 1.4.2 (mixing zones and dilution credits); 2 (through 2.2.1) (compliance schedules, except as noted above); 5.2 (site-specific objectives); 5.3 (exceptions) and Appendices 1 and 3. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the Federal Clean Water Act. The SIP establishes implementation provisions for priority pollutant criteria promulgated by the U.S.

EPA through the National Toxics Rule (NTR) and California Toxics Rule (CTR), and for priority pollutant objectives established by the Regional Water Quality Control Boards (RWQCBs) in their water quality control plans (basin plans). The SIP also establishes monitoring requirements for 2,3,7,8-TCDD equivalents, chronic toxicity control provisions, and Pollutant Minimization Programs.

California Toxics Rule (CTR)

13. The U.S. EPA published the *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* on May 18, 2000 (Federal Register, Volume 65, Number 97, 18 May 2000). These standards are generally referred to as the California Toxics Rule (CTR). The CTR specifies water quality criteria for numerous pollutants, some of which are applicable to the Discharger's effluent discharges.

Other Regulatory Bases

14. Water quality objectives, criteria and effluent limitations in this permit are based on:

    - the SIP;
    - the plans, policies and water quality objectives and criteria of the Basin Plan;
    - the CTR;
    - Quality Criteria for Water [EPA 440/5-86-001, 1986] and subsequent amendments, (the U.S. EPA Gold Book);
    - applicable Federal Regulations [40 CFR Parts 122 and 131];
    - the National Toxics Rule (the NTR) as promulgated [Federal Register Volume 57, 22 December 1992, page 60848;
    - 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];
    - the U.S. EPA's December 10, 1998 National Recommended Water Quality Criteria compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364]; and
    - Best Professional Judgment (BPJ) as defined in the Basin Plan.

15. In addition to the documents listed above, other U.S. EPA guidance documents upon which BPJ was developed include in part:

    - U.S. EPA Region 9 *Guidance For NPDES Permit Issuance*, February 1994;
    - *Technical Support Document for Water Quality Based Toxics* Control (March 1991) (TSD);
    - *Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria*, October 1, 1993;
    - *Whole Effluent Toxicity (WET) Control Policy*, July 1994;
    - *National Policy Regarding Whole Effluent Toxicity Enforcement*, August 14, 1995;
    - *Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods*, April 10, 1996;
    - U.S. EPA Regions 9 & 10 *Guidance for Implementing Whole Effluent Toxicity Programs Final*, May 31, 1996;
    - *Draft Whole Effluent Toxicity (WET) Implementation Strategy*, February 19, 1997.

Bases for Effluent Limitations

General Basis

16. *Federal Water Pollution Control Act*. Effluent limitations and toxic effluent standards are established pursuant to sections 301 through 305, and 307 of the Federal Water Pollution Control Act, and amendments thereto, which are applicable to the discharges herein.

Applicable Water Quality Objectives

17. The water quality objectives (WQOs) applicable to the receiving water of this discharger are from the Basin Plan, the CTR, and the NTR.

    a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (IV), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide. The narrative toxicity objective states in part "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." (pg. 3-4). The bioaccumulation objective states in part "[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life." (pg. 3-2). Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

    b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).

    c. The NTR established numeric aquatic life criteria for selenium for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving water for this discharge.

18. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality based effluent limits (WQBELs) may be set based on U.S. EPA criteria, and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses. Discussion of the specific bases and rationale for effluent limits are given in the associated Fact Sheet for this Permit, which is incorporated as part of this Order.

Basin Plan Receiving Water Salinity Policy

19. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine

beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance (Basin Plan, pp. 4 – 13).

CTR Receiving Water Salinity Policy

20. The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance.

Receiving Water Salinity

21. The receiving waters for the subject discharge are the waters of Lower San Francisco Bay. Regional Board staff evaluated RMP salinity data from the three nearest receiving water stations, Alameda, Oyster Point and San Bruno Shoal, for the period February 1996 – August 1999. During that period, the receiving water's minimum salinity was 12 parts per thousand (ppt) its maximum salinity was 31.4 ppt, and its average salinity was 23.4 ppt. These data are all well above both the Basin Plan and CTR thresholds for salt water; therefore the limits in this Order are based on salt water criteria.

Technology Based Effluent Limits

22. Permit effluent limits for conventional pollutants are technology-based. Technology-based effluent limitations are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility. This Order's limits are the same as the previous permit's for the following constituents:

    - biochemical oxygen demand (BOD),
    - pH,
    - BOD percent removal,
    - coliform,
    - total suspended solids (TSS),
    - TSS percent removal,
    - settleable matter, and
    - total chlorine residual.

    Technology-based oil and grease limits have been added to this permit based on Basin Plan requirements.

Water Quality Based Effluent Limitations

23. Toxic substances are regulated by WQBELs derived from water quality criteria listed in the Basin Plan, the NTR, the CTR, the SIP, or U.S. EPA Gold Book, and/or BPJ. This Order's WQBELs are revised and updated from the previous permit's limits and their presence in this Order is based on the Reasonable Potential Analysis evaluation of the Discharger's data, as described the Reasonable Potential Analysis section, below. Numeric WQBELs are required for all constituents that have

reasonable potential to cause or contribute to an excursion above any State water quality standard (that have reasonable potential). Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that meeting the final limits is infeasible and provides justification for a compliance schedule, then interim limits will be established, with a compliance schedule for achieving the final limits. The attached Fact Sheet contains further details about specific WQBELs, and the Fact Sheet is incorporated as part of this Order.

Receiving Water Ambient Background Data used in Calculating WQBELs

24. Ambient background values are utilized in the Reasonable Potential Analysis (the RPA) and in the calculation of effluent limitations. For the RPA, ambient background concentrations are the observed maximum water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations, or, for criteria/objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. Regional Board staff determined that maximum observed concentrations of inorganic and organic constituents in Central San Francisco Bay are most representative of ambient background conditions within the Bay. The RMP stations at Yerba Buena Island and Richardson Bay located in the Central Bay have been sampled for most of the inorganic (CTR constituent numbers 1-15) and some of the organic toxic pollutants. WQBELs were calculated using RMP data from 1992 through 1998 for inorganics and 1993 through 1998 for organics. Regional Board staff used the RMP data set from 1992 through 1998 to determine the following total recoverable metals ambient background concentrations listed in Table 1, below. Not all the constituents listed in the CTR were analyzed by the RMP during this time. This data gap is addressed by the Board's August 6, 2001 letter formally requiring (pursuant to Section 13267 of the California Water Code) the Discharger to conduct ambient background monitoring for those constituents not currently sampled by the RMP and to provide this technical information to the Board (the Board's August 6, 2001 letter). Upon completion of the required ambient background monitoring, the Board shall use the gathered data to conduct the RPA and determine if a water-quality based effluent limitation is required.

Table 1. Total Recoverable Metals Ambient Background Concentrations

	Constituent, µg/L									
	Arsenic	**Cadmium**	**Chromium**	**Copper**	**Lead**	**Mercury**	**Nickel**	**Selenium**	**Silver**	**Zinc**
Arithmetic Mean	1.86	0.064	1.44	1.8	0.29	0.003	2.10	0.12	0.01	2.37
Maximum Observed	2.22	0.13	4.4	2.45	0.8	0.006	3.5	0.19	0.07	4.6

Constituents Identified in the 303(d) List

25. On May 12, 1999, the U.S. EPA approved a revised list of impaired water bodies prepared by the State (the 303(d) list). The list was prepared pursuant to provisions of Section 303(d) of the federal Clean Water Act requiring identification of specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Lower San Francisco Bay is listed as impaired by:

- chlordane,
- copper,
- DDT,
- diazinon,
- dieldrin,
- dioxin and furan compounds,
- mercury,
- nickel,
- total PCBs,
- PCBs (dioxin like),
- Selenium, and
- Exotic species.

Dilution and Assimilative Capacity

26. In response to the State Board's Order No. WQ 2001-06, staff has evaluated the assimilative capacity of the receiving water for 303(d) listed pollutants for which the Discharger has reasonable potential. The evaluation included a review of RMP data (local and Central Bay stations), effluent data, and WQOs. From this evaluation, staff has found that the assimilative capacity is highly variable due to the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representative nature of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water. Pursuant to Section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on pollutant-by-pollutant basis..." For bioaccumulative pollutants, based on best professional judgement, dilution credit is not included in calculating the final WQBELs. Furthermore, Section 2.1.1 of the SIP states that for bioaccumulative compounds on the 303(d) list, the Board should consider whether mass loading limits should be limited to current levels. The Board finds that mass loading limits are warranted for the bioaccumulative compounds on the 303(d) list for the receiving waters of this discharge. However, in calculating the final WQBELs for non-bioaccumulative constituents, it is assumed that there is assimilative capacity based on best professional judgment, and a 10:1 dilution is granted.

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)

27. The Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list in Lower San Francisco Bay no later than 2010, with the exception of dioxin and furan compounds. The Board defers development of the TMDL for dioxin and furan compounds to the U.S. EPA. Future review of the 303(d) list for Lower San Francisco Bay may result in revision of the schedules and/or provide schedules for other pollutants.

28. The TMDLs will establish waste load allocations (WLAs) and load allocations (LAs) for point sources and non-point sources, respectively, and will result in achieving the water quality standards for the waterbody. The final effluent limitations for this discharge will be based on WLAs that are derived from the TMDLs.

29. The following summarizes the Board's strategy to collect water quality data and to develop TMDLs:

    a. Data collection – The Board will request dischargers collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or water quality objectives. This collective effort may include development of sample concentration techniques for approval by the U.S. EPA. The Board will

require dischargers to characterize the pollutant loads from their facilities into the water-quality limited waterbodies. The results will be used in the development of TMDLs, and may be used to update/revise the 303(d) list and/or change the water quality objectives for the impaired waterbodies including Lower San Francisco Bay.

b. Funding mechanism – The Board has received, and anticipates continued receipt of, resources from federal and state agencies for the development of TMDLs. To ensure timely development of TMDLs, the Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

Interim Limits and Compliance Schedules

30. Pursuant to Section 2.1.1 of the SIP,

> " the compliance schedule provisions for the development and adoption of a TMDL only apply when: ...(b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQOB should consider the discharge's contribution to current loadings and the Discharger's ability to participate in TMDL development."

The discharger has agreed to assist the Board in TMDL development through active participation and contribution to the Bay Area Clean Water Agencies (BACWA). The Board adopted Resolution No. 01-103, on September 19, 2001, which authorizes the Executive Officer of the Board to enter into a Memorandum of Understanding with BACWA, and other parties to accelerate the development of Water Quality Attainment Strategies including TMDLs for the San Francisco Bay-Delta and its tributaries.

31. Until final WQBELs or WLAs are adopted, state and federal anti-backsliding and antidegradation policies and the SIP, require that the Board include interim effluent limitations. The interim effluent limitations will be the lower of the following:

a. current performance; or

b. the previous permit's limits

In addition to interim concentration limits this Order establishes interim performance-based mass limitations to maintain the current mass loadings of 303(d)-listed bioaccumulative pollutants (e.g., mercury) by the discharge. These interim performance-based mass limits are based on recent discharge data. Where pollutants have existing high detection limits and quantified concentration data are inadequate, interim mass limits are not established because meaningful performance-based mass limits cannot be calculated for pollutants with insufficient quantified concentration data. However, the Discharger may investigate alternative analytical procedures that would result in lower detection limits, either by participating in new or ongoing RMP special studies, or through equivalent studies conducted jointly with other Dischargers.

32. If an existing discharger cannot immediately comply with a new and more stringent effluent limitation, the SIP and the Basin Plan authorize a compliance schedule in the permit. Compliance schedules would be based on Section 2.2 of the SIP for limits derived from CTR criteria, or based on the Basin Plan for limits derived from the Basin Plan WQOs. To qualify for a compliance schedule, both the SIP and the Basin Plan require that the Discharger demonstrate that it is infeasible to

achieve immediate compliance with the new limit. The SIP and Basin Plan require that the following information be submitted to the Board to support a finding of infeasibility:

- Documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
- Documentation of source control and/or pollution minimization efforts currently under way or completed;
- A proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
- A demonstration that the proposed schedule is as short as practicable

33. During the compliance schedules, interim limits are included based on current treatment facility performance or on the previous permit's limits, whichever is more stringent, to maintain existing water quality. The Board may take appropriate enforcement actions if interim limits and requirements are not met.

34. On January 18, 2002, the Discharger submitted a final feasibility study (the January 18, 2002 Feasibility Study) to demonstrate that it is infeasible to immediately comply with certain of the WQBELs calculated according to Section 1.4 of the SIP. The Board concurs that it is infeasible for the discharger to immediately comply with the WQBELs for copper, mercury, alpha-BHC and dieldrin. Therefore, this Order establishes compliance schedules for these pollutants. For limits based on CTR or NTR criteria (I.e., copper, alpha BHC and dieldrin) this Order establishes a five-year compliance schedule as allowed by the CTR and SIP. For limits based on the Basin Plan numeric objectives (i.e., mercury), this Order establishes a compliance schedule until March 31, 2010. The bases for the limits contained in this Permit are delineated in Table E of the attached Fact Sheet. The Basin Plan provides for a 10-year compliance schedule for implementation of measures to comply with new standards as of the effective date of those standards. This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric water quality objectives specified in the Basin Plan, resulting in more stringent limits than in the previous permit. Due to the adoption of the SIP, the Board has newly interpreted these objectives. As a result of applying the SIP methodologies, the effluent limitations for some pollutants are more stringent than the prior permit's. Accordingly, a compliance schedule is appropriate here for the new limits for these pollutants.

    Since the compliance schedules for CTR criteria and Basin Plan numeric water quality objectives both exceed the length of the permit which is 4 years and 11 months, these calculated final limits are intended as points of reference for the feasibility demonstration and are only included in the findings by reference to the fact sheet. Additionally, the actual final WQBELs for these pollutants will very likely be based on either the Site Specific Objective (SSO) or TMDLs/WLAs as described in other findings specific to each of the pollutants.

Antibacksliding and Antidegradation

35. The interim limits in this permit comply with anti-degradation and anti-backsliding requirements because they hold the Discharger to current facility performance, and because the final limits comply with anti-degradation and anti-backsliding requirements.

Specific Basis

Reasonable Potential Analysis

36. Title 40 CFR Part 122.44(d) (1) (i) requires permits to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." Using the method prescribed in Section 1.3 of the SIP, Regional Board staff have analyzed the effluent data to determine if the discharges, which are the subject of this Permit and Order, have a reasonable potential to cause or contribute to an excursion above a State water quality standard (have reasonable potential). This is the RPA referenced in Finding 23, above. For all parameters that have reasonable potential, numeric WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQOs from the U.S. EPA Gold Book, the NTR, and the CTR.

Reasonable Potential Methodology.

37. The RPA involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data.

    a. The RPA is carried out using the steps outlined in Section 1.3 of the SIP. The RPA for all constituents is based on zero dilution, pursuant to section 1.3 of the SIP.

    b. There are three triggers in determining reasonable potential:

        i. The first trigger is activated if the maximum effluent concentration (MEC) is greater than the lowest applicable WQO (i.e. MEC>WQO), which has been adjusted for pH, and translator data, if appropriate. If the MEC is greater than the adjusted WQO, then there is reasonable potential for that constituent to cause or contribute to an excursion above the WQO, and a WQBEL is required.

        ii. The second trigger is activated if:

            1) the observed maximum ambient background concentration (B) is greater than the adjusted WQO (i.e. B>WQO), and

                a) the MEC is less than the adjusted WQO (i.e. MEC<WQO), or

                b) the pollutant was not detected in any of the effluent samples and all of the detection levels are greater than or equal to the adjusted WQO.

            If B is greater than the adjusted WQO, then a WQBEL is required.

        iii. The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even if both MEC and B are less than the WQO. A limit is only required under certain circumstances to protect beneficial uses.

Summary of RPA Data and Results

38. The RPA was based on monthly effluent monitoring data from January 1998 through July 2001 for metals, mercury, and cyanide; and more limited monitoring data from 1997 through 2000 for organic toxic pollutants. Based on the RPA methodology in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above water quality objectives:

    - copper,
    - mercury,
    - nickel,
    - cyanide,
    - silver,
    - zinc,
    - alpha-BHC,
    - 4,4-DDE and
    - dieldrin.

    Based on the RPA, numeric WQBELs are required for these constituents.

RPA Determinations.

39. The maximum effluent concentrations (MEC), governing WQOs, bases for the WQOs, background concentrations used and reasonable potential conclusions from the RPA are listed in the following table for all constituents found to have reasonable potential. The RPA results for most of the constituents in the CTR (Nos. 17-126 except 103,109 and 111) were indeterminate because of the lack of background data, WQOs, or effluent data. Further details on the RPA are contained in the attached Fact Sheet.

Table 2. Summary of Reasonable Potential Analysis results. Complete results in Table B in Fact Sheet.

Constituent[1]		WQO (µg/L)	Basis[2]	MEC, µg/L	Maximum Ambient Background Concentration, µg/L	Reasonable Potential
CTR #	Name					
2	Arsenic	36	BP	4.0	2.22	No
4	Cadmium	9.3	BP	0.07	0.13	No
5b	Chromium VI	50	BP	4.7	4.4	No
6	Copper*	3.7	CTR	17	2.45	Yes*
7	Lead	5.6	BP	4	2.38	No
8	Mercury*	0.025	BP	0.554	0.0064	Yes*
9	Nickel*	7.1	BP	8.7	5.9	Yes*
10	Selenium	5.0	NTR	1.2	0.19	No
11	Silver	2.3	BP	4	0.07	Yes
13	Zinc	58	BP	60	13.3	Yes
14	Cyanide	1	NTR	20.5	N/A	Yes
16	TCDD*TEQ	0.000000014	CTR	NA	NA	[3]
103	Alpha-BHC	0.013	CTR	0.04	NA	Yes
111	Dieldrin*	0.00014	CTR	0.075	0.000264	Yes
109	4,4-DDE*	0.00059	CTR	All non-detect	0.00069	Yes
	All others (CTR #'s 17 –126 except above)	Various or NA	CTR	Non-detect, less than WQO, or no WQO	Less than WQO or Not Available	No or [3]

Footnotes for Table 2:

1. * indicates constituents on 303(d) list; Dioxin applies to Toxicity Equivalent (TEQ) of 2,3,7,8-TCDD.
2. BP = Basin Plan; CTR = California Toxics Rule
3. Undetermined due to lack of background data, lack of objective, and/or lack of effluent data (See Fact Sheet Table B for full RPA results).

Interim Limits with Compliance Schedules.

40. The Discharger has demonstrated in its January 18, 2002 *Updated Feasibility Study and Request for Compliance Schedule for City of Burlingame, NPDES Permit No. CA0037788* (the January 18, 2002 Feasiblity Study) that it is infeasible to meet the final WQBELs calculated according to Section 1.4 of the SIP for copper, mercury, alpha-BHC and dieldrin, thereby complying with the infeasibility requirements in Section 2.1 of the SIP. This Order establishes compliance schedules for these pollutants that extend beyond one year. The SIP, and 40 CFR Part 122.47, require that the Board shall establish interim numeric limitations and interim requirements to control these pollutants. This Order establishes interim limits for these pollutants based on the previous permit limit or plant performance, whichever is more stringent, as described in in the findings for specific pollutants, below. Specific bases for these interim limits are described in the following findings for each pollutant. This Order also establishes interim requirements in a provision for development and/or

improvement of a Pollution Prevention Program to reduce pollutant loadings to the treatment plant, and for submittal of annual reports on this Program.

41. Pursuant to the SIP (Section 2.2.2, Interim Requirements for Providing Data), where available data are insufficient to calculate a final effluent limit (e.g., cyanide), a data collection period of May 18, 2003 is established. This Order contains a provision requiring the Discharger to conduct studies for collecting ambient background data and for determining site-specific objectives. The discharger is required to participate in an ongoing group effort to implement the studies and submit reports to the Board by 2003. The Board intends to include, in a subsequent permit revision, a final limit based on the study required as an enforceable limit. However, if the Discharger requests and demonstrates that it is infeasible to comply with the revised final limit, the permit revision will establish a maximum five-year compliance schedule.

RPA Results for Impairing Pollutants.

Specific Pollutants

Phenols.

42. This Order implements the policy and regulations of the CTR and SIP in regard to phenolic compounds. The previous permit contained an effluent limit for total phenols of 500 ug/l, based on a technology based effluent limit established in the Basin Plan. The CTR specifies criteria for individual phenolic compounds that are a subset of total phenols. The previous total phenols limit may be more restrictive for several phenolic compounds (e.g., phenol, and 2,4-dimethylphenol) than the water quality-based limits calculated from the SIP, owing to their high CTR criteria. However, for most of the phenolic compounds in the CTR, the water quality based limits would be more restrictive. Retaining limits for both total and individual phenolics would potentially limit and count the same pollutant twice. Therefore, this Order follows the requirements of the CTR and SIP in lieu of the Basin Plan technology-based limit because 1) the water quality considerations of the CTR and SIP are generally more restrictive, and 2) the low historic concentrations of total phenols in the discharge. None of the individual phenol compounds included in CTR have been found in the effluent at levels above their water quality criteria (a few phenols have not been analyzed for to date). There are currently no background data to conduct an RPA for specific phenolic compounds. This Order requires the Discharger to participate in the RMP to collect additional phenol data. The permit can be re-opened to establish limits if new data show that there is reasonable potential and phenol limits are necessary.

Dioxins and Furans

43. Numeric Water Quality Objective. The CTR establishes a numeric human health WQO of 0.000000014 µg/L (equivalent to 0.014 picograms per liter - pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms. The preamble of the CTR states that California should use toxicity equivalents (TEQs) to assess the reasonable potential for dioxin-like compounds to cause or contribute to a violation of a narrative criterion. The preamble further states the U.S. EPA's intent to use the World Health Organization's 1998 Toxicity Equivalence Factor scheme (the WHO TEFs) in the future and encourages California to use the WHO TEFs in State programs. Staff used the WHO TEFs as the TEQs to translate the narrative WQOs to numeric WQOs for the other 16 congeners and to carry out an RPA for them using the RPA procedures described above. Finally, the CTR preamble states the U.S. EPA's intent to adopt revised guidance for water quality criteria subsequent to their health reassessment for dioxin-like compounds.

44. a The SIP applies to all toxic pollutants, including dioxins and furans. The SIP requires a limit for 2,3,7,8-TCDD if a limit is necessary, and requires monitoring for a minimum of 3 years by all major NPDES Dischargers for the other sixteen dioxin and furan compounds.

    b. The Basin Plan contains a narrative WQO for bio-accumulative substances:

    "Many pollutants can accumulate on particulates, in sediments, or bio-accumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

    This narrative WQO applies to dioxin and furan compounds, based in part on scientific consensus that these compounds associate with particulates, accumulate in sediments, and bio-accumulate in the fatty tissue of fish and other organisms.

    c. The U.S. EPA's 303(d) listing determined that the narrative objective for bio-accumulative pollutants was not met because of the levels of dioxins and furans in the fish tissue. No Discharge data is available to show if there are dioxins and furans present in the discharge at levels above the WQ Criterion.

    d. The discharger has not monitored for dioxins and furans. Therefore, no effluent data exist to conduct an RPA or calculate interim limits. Pursuant to the SIP, the Discharger will be required to monitor for dioxins and furans. Once there is enough information, Regional Board staff will conduct an RPA to determine if limits are required.

Polynuclear Aromatic Hydrocarbons

45. The RPA was conducted on individual PAHs, as required by the SIP and CTR, and not on total PAHs. The CTR specifies criteria for individual PAHs that are a subset of total PAHs. The Basin Plan's total PAHs limit may be more restrictive for several PAHs than the water quality based limits calculated from the SIP, owing to their high CTR criteria. However, for most of the PAH compounds in the CTR, the water quality based limits would be more restrictive. Retaining limits for both total and individual PAHs would potentially limit and count the same pollutant twice. Therefore, this Order follows the requirements of the CTR and SIP in lieu of the Basin Plan limit because 1) the water quality considerations of the CTR and SIP are generally more restrictive, and 2) the low historic concentrations of PAHs in the discharge. During the period January 1997 to December 1999, total PAHs were detected in the Discharger's effluent at 0.28 µg/L, 5.0 µg/L, 0.25 µg/L, and 0.20 µg/L in March 1997, July 1997, January 1998 and May 1998, respectively. These analytical results were for total PAHs and not for individual PAHs. Therefore, reasonable potential for individual PAHs cannot be determined at this time. The Board's August 6, 2001 letter requires the Discharger to characterize the effluent for individual PAH constituents with improved detection limits. Upon completion of the required effluent monitoring, the Board shall use the gathered data to complete the RPA for all individual PAH constituents listed in the CTR and determine if WQBELs are required.

4,4-DDE

46. The pollutant 4,4-DDE was not detected in the effluent, but all of the detection limits are higher than lowest the WQO (Section 1.3 of the SIP). Although Regional Board staff could not determine an MEC for 4,4-DDE, it has been detected in the ambient background at concentrations above the lowest WQO, demonstrating reasonable potential by trigger 2, above, and numeric WQBELs are required for 4,4-DDE.

47. The current 303(d) list includes Lower San Francisco Bay as impaired for DDT; 4,4-DDE is chemically linked to the presence of DDT. The Board intends to develop TMDLs that will reduce loading of 4,4-DDE to Lower San Francisco Bay. The WQBELs specified in this Order may be changed to reflect the WLAs from these TMDLs. To assist the Board in developing the TMDLs, the Discharger may participate in coordinated efforts (e.g., through BACWA and the RMP) to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for 4,4-DDE, and to present the preferred method(s) for approval by U.S. EPA. If analytical methodologies improve and the detection levels decrease such that discharge concentrations of 4,4-DDE are detected above the limits in this Order, the Board will re-evaluate the feasibility of the Discharger complying with the limits and will determine if a compliance schedule and interim performance-based-limits are needed.

48. Since 4,4-DDE is bioaccumulative and on the 303(d) list due to fish tissue concentrations, there is no assimilative capacity, and no dilution credit was allowed in the final limit calculations.

Dieldrin.

49. The WWTP effluent was sampled once for dieldrin, and it was detected in the effluent at 0.075 µg/L, which is above the relevant WQO of 0.00014 µg/L. Therefore, Trigger 1, above, is activated and reasonable potential is confirmed. The Discharger's January 18, 2002 Feasibility Study demonstrated that it is infeasible to immediately comply with the WQBELs of 0.00026 µg/L daily maximum and 0.00014 µg/L monthly average. Therefore, an interim limit is required. Since an IPBL cannot be computed from one data point, and the previous permit did not contain a limit for dieldrin, the interim limit is set at the MEC, 0.075 µg/L. This interim limit is consistent with other interim limits set in similar cases for other NBSU dischargers.

50. The current 303(d) list includes Lower San Francisco Bay as impaired by dieldrin. The Board intends to develop a dieldrin TMDL leading to overall reduction of dieldrin loading into Lower San Francisco Bay. The WQBEL specified in this Order may be changed to reflect the TMDL's WLAs. To assist the Board in developing the TMDL, the Discharger may participate in coordinated efforts (e.g., through BACWA and the RMP) to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for dieldrin, and to present the preferred method for approval by U.S. EPA.

Alpha-BHC

51. The WWTP effluent was sampled once for alpha-BHC, and it was detected in the effluent at 0.04 µg/L. Therefore, trigger 1, above is activated, and reasonable potential is confirmed. The City's January 18, 2002 Feasibility Study demonstrated that it is infeasible for the City to immediately comply with the calculated WQBELs of 0.013 µg/L and 0.026 µg/L average monthly and daily maximum, respectively. Therefore, an interim limit is required. Since an IPBL cannot be computed from one data point, and the previous permit did not contain a limit for alpha-BHC, the interim limit is set at the MEC, 0.04 µg/L. This interim limit is consistent with other interim limits set in similar cases for other NBSU dischargers.

Other organics.

52. The discharger has generally performed organics sampling twice a year over the past few years under their pretreatment program. This sampling effort has covered most of the organic constituents listed in the CTR. This data set was used to perform the RPA for other organics. The full RPA is presented as an attachment in the Fact Sheet. For most of the priority pollutants, reasonable potential cannot be

determined because ambient background concentrations are not available, and/or effluent concentrations are all nondetected with the lowest detection limit being higher than the WQO. The Discharger will continue to monitor for these constituents in the effluent and the receiving water using analytical methods that provide the best feasible detection limits. When sufficient data are available, RPAs will be completed for them to determine whether to add final effluent limitations to the permit for them or to continue monitoring them.

Permit Reopener

53. The Order includes a reopener provision to allow numeric effluent limitations to be added or deleted in the future for any constituent that exhibits or does not exhibit, respectively, reasonable potential. The Board will make this determination based on monitoring results.

Development of Specific Effluent Limitations

Copper

54. CTR Copper Water Quality Criteria. The current 303(d) list includes copper as an impairing pollutant for Lower San Francisco Bay. The saltwater criteria for copper in the adopted CTR are 3.1 µg/L for chronic protection and 4.8 µg/L for acute protection. Included in the CTR are translator values (0.83) to convert the dissolved criteria to total criteria. The discharger may perform a translator study to determine a more site-specific translator. The SIP, Section 1.4.1, and the U.S. EPA's June 1996 guidance *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion*, describe this process and provide guidance on how to establish a site-specific translator.

55. Water Effects Ratios. The CTR provides a mechanism to adjust criteria by deriving site-specific objectives (SSOs) using water-effect ratios (WERs). A WER accounts for differences between a metal's toxicity in laboratory dilution water and its toxicity in water at the site. The U.S. EPA includes WERs to ensure that the metals criteria are appropriate for the chemical conditions under which they are applied, and its February 22, 1994 *Interim Guidance on Determination and Use of Water Effects Ratios for Metals* superseded all prior U.S. EPA guidance on this subject. If the Discharger decides to pursue SSOs, they shall be developed in accordance with procedures contained in Section 5.2 of the SIP.

56. Effluent Limitation for Copper: The January 18, 2002 Feasibility Study demonstrated that it is infeasible for the Discharger to immediately comply with the calculated WQBELs of 13 µg/L monthly average and 23 µg/L daily maximum. The SIP requires that interim numeric effluent limits for the pollutant be based on either current treatment facility performance, or on the previous permit's limitation, whichever is more stringent. The previous permit contained an effluent limitation of 37 µg/L for copper, and statistical analysis of recent effluent data indicate the IPBL would be 27 µg/L. Therefore, this Order establishes an interim performance-based copper limit of 27 µg/L, which is the more stringent of the two. The Discharger is cooperating with other Dischargers from north of the Dumbarton Bridge to conduct impairment assessment studies aimed at collecting additional copper data in Lower San Francisco Bay. The Board has considered these studies in its 303(d) listing decision in 2001, and will consider them when assessing any SSO proposed for copper. Future copper WQBELs would be developed consistent with SIP procedures in Section 5.2 if the impairment studies support adoption of an SSO. On November 28, 2001, the Board considered a staff report on Proposed Revisions to Section 303(d) List and Priorities for Development of Total Maximum Daily Loads (TMDLs) for the San Francisco Bay Region and authorized the Executive

Officer to transmit proposed revisions to the State Board. Copper is proposed to be de-listed from all segments of the San Francisco Estuary north of the Dumbarton Bridge including Lower San Francisco Bay but excluding the tidal portion of the mouth of Petaluma River.

57. Effluent concentrations during the period 1998 - 2000 ranged from 0.1 µg/L to 17.0 µg/L, and the WWTP would have complied with the IPBL of 27 µg/L at all sampling events.

Mercury

Mercury Water Quality Objectives.

58. Both the Basin Plan and CTR include objectives that govern mercury in the receiving water. The Basin Plan specifies objectives for the protection of aquatic life of 0.025 µg/L as a 4-day average and 2.1 µg/L as a 1-hour average. The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.

Mercury TMDL.

59. The current 303(d) list includes Lower San Francisco Bay as impaired by mercury, due to exceedences in fish tissue levels. Methyl-mercury is a persistent bioaccumulative pollutant. The Board intends to develop a TMDL that will reduce mercury mass loadings in Lower San Francisco Bay. The final mercury WQBEL will be derived from the Discharger's WLA contained in the TMDL, and the permit will be revised to include the final WQBEL as an enforceable limitation.

Mercury Control Strategy.

60. The Board and other stakeholders will coperatively develop mercury source control strategies as part of TMDL development. Municipal discharge point sources may not be the most significant mercury loadings to Lower San Francisco Bay. Therefore, the currently preferred strategy is applying interim mass loading limits to point-source discharges while focusing mass reduction efforts on other, more significant and controllable sources. While the TMDL is being developed, the Discharger will comply with performance-based mercury mass emission limits to cooperate in maintaining ambient receiving water conditions. Therefore, this Order includes interim concentration and mass loading effluent limitations for mercury, as described in Findings 61 and 62, below. The Discharger is required to develop source control measures and cooperatively participate in special studies as described in Finding 64 below.

Concentration-Based Mercury Effluent Limitation.

61. This Order establishes an interim monthly average limit for mercury concentrations based on staff's analysis of the performance of over 25 municipal secondary and advanced-secondary treatment plants in the Bay Area. This analysis is described in the June 11, 2001 Regional Board staff report titled "Staff Report, Statistical Analysis of Pooled Data from Region-Wide Ultra-clean Mercury Sampling" (the staff report). The objective of the analysis was to develop interim performance-based limits (IPBLs) that characterized facility performance regionwide using only ultra-clean data. Compliance with the IPBLs will ensure no further degradation of the receiving water quality due to the discharge. The staff report's conclusions demonstrate that the statistically-based mercury IPBLs are 0.087 µg/L for a secondary plant, and 0.023 µg/L for an advanced secondary plant. The Discharger operates a secondary-level treatment plant, therefore its mercury IPBL is 0.087 µg/L. Based on the June 30, 2000 Regional Board staff report titled "Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to U.S. EPA,", municipal

sources are a very small contributor of the mercury load to the Bay. Because of this, it is unlikely that the TMDL will require reduction efforts beyond the source controls required by this permit (see Finding 64, below).

Mass-Based Mercury Effluent Limitation.

62. This Order establishes an interim mercury mass-based effluent limitation of 0.135 kilograms per month (Effluent Limitations - Section B.7.a). This mass-based effluent limitation is calculated using the statistical formulas described in the attached Fact Sheet. This mass-based effluent limitation will maintain current mercury loadings to Lower San Francisco Bay until the mercury TMDL is adopted, and is consistent with state and federal antidegradation and antibacksliding requirements. The WQBELs will be revised to be consistent with the WLA assigned in the mercury TMDL.

Treatment Plant Performance and Compliance Attainability.

63. The most recent effluent monitoring data for mercury from January 1998 through July 2001 show concentrations ranging from 0.004 to 0.554µg/L. The effluent discharged to Lower San Francisco Bay has been in consistent compliance with the previous permit limits of 1 µg/L and 0.21 µg/L. Ultra-clean sampling and analytical techniques were more consistently employed by the Discharger beginning in February 2000, and effluent mercury concentrations from that period range between 0.004 µg/L and 0.017 µg/L. These results indicate that the WWTP would be able to comply with the interim concentration-based mercury limit of 0.087 µg/L.

Mercury Source Control

64. This order establishes an interim mass-based limit for mercury and requires the Discharger to continue its existing pollution prevention and pretreatment programs to maximize practicable control over influent mercury sources. The Discharger has committed to continue, and to actively pursue opportunities to augment, its mercury source control and pollution prevention activities as a prerequisite to being granted a compliance schedule and interim mass-based limit. The Discharger should continue cooperating with other municipal Dischargers in broader efforts to maximize mercury source control and pollution prevention efforts, assess alternatives for reducing mercury loading to receiving waters, and protect their beneficial uses. This Order contains a reporting schedule for the mercury source control program.

Nickel

Nickel Water Quality Objective.

65. The Basin Plan contains numeric WQOs for total nickel of 7.1 µg/L and 140 µg/L for chronic and acute toxicity, respectively. No translator value is needed.

Effluent Limitations for Nickel.

66. The final WQBELs for nickel were calculated pursuant to procedures in the SIP, and are calculated as 64 µg/L and 32.7 µg/L daily maximum and monthly average, respectively (see the attached Fact Sheet for details). These WQBELs may be revised in the future based on the TMDL/WLA or the results of the SSO and translator studies. The current 303(d) list includes Lower San Francisco Bay as impaired by nickel. The discharger is participating in impairment assessment studies aimed at gathering additional data on nickel concentrations in Lower San Francisco Bay. The Board has considered these studies in its 303(d) listing decision in 2001, and when considering any SSO

proposed for nickel. The nickel WQBEL would be developed consistent with SIP procedures in Section 5.2 if the impairment studies support adoption of an SSO. On November 28, 2001, the Board considered a staff report on Proposed Revisions to Section 303(d) List and Priorities for Development of Total Maximum Daily Loads (TMDLs) for the San Francisco Bay Region and authorized the Executive Officer to transmit proposed revisions to the State Board. Nickel is proposed to be de-listed from all segments of the San Francisco Estuary north of the Dumbarton Bridge including Lower San Francisco Bay but excluding the tidal portion of the mouth of Petaluma River.

Treatment Plant Performance and Compliance Attainability.

67. The MEC reported for nickel since 1998 has been 8.7 µg/L. The monthly average effluent limit (AMEL), calculated as required by Section 1.4 of the SIP, is 32.7µg/L, as noted above. Based on the comparison of the MEC to the AMEL, the Discharger can comply with the final WQBELs.

Silver

Water Quality Objective.

68. The Basin Plan contains a numeric WQO for total silver of 2.3 µg/L. No translator value is needed.

Effluent Limitations for Silver.

69. The calculated final WQBELs for silver are an average monthly value of 11.8 µg/L and daily maximum value of 21.8 µg/L

Treatment Plant Performance and Compliance Attainability.

70. The MEC since the beginning of 1998 has been 4 µg/L. Based on the comparison of the 4 µg/L MEC and the 11.8 µg/L AMEL calculated based on Section 1.4 of the SIP, the Discharger can comply with the final WQBELs.

Zinc

Water Quality Objective.

71. The Basin Plan contains a numeric WQO for total zinc of 58.0 µg/L as 24-hour averaged. No translator value is needed.

Effluent Limitations for Zinc.

72. The calculated final WQBELs for zinc are 691 µg/L and 497 µg/L for daily maximum and monthly average, respectively.

Treatment Plant Performance and Compliance Attainability.

73. The MEC since the beginning of 1998 has been 60 µg/L. Based on the comparison of the 60 µg/L MEC and the 497 µg/L AMEL calculated based on Section 1.4 of the SIP, the Discharger can comply with the final WQBELs.

Dioxins and Furans

Interim Monitoring Requirements.

74. The Discharger has not conducted monitoring for dioxin and furan compounds. The Board's August 6, 2001 letter requires the Discharger to monitor for dioxin and furan compounds.

Cyanide

75. Both the Basin Plan and CTR include objectives that govern cyanide for the protection of aquatic life in the receiving water. The Basin Plan specifies an objective 5 µg/L as a 1-hour average, and the CTR specifies a chronic Criterion Chronic Concentration (CCC) of 1 µg/L as a 4-day average. This CCC value is below the presently achievable reporting limit (ranges from approximately 3 to 5 µg/L).

76. The background data set was limited to six total and six dissolved data points, all non detected (<1 µg/L), collected in 1993 at Richardson Bay and Yerba Buena Island stations. The final WQBELs for cyanide will be calculated based on additional effluent and ambient background information, or a cyanide SSO. Cyanide is a regional problem associated with the analytical protocol for cyanide analysis due to matrix interferences. A body of evidence exists to show that cyanide measurements in effluent may be an artifact of the analytical method. This question is being explored in a national research study sponsored by the Water Environment Research Foundation (WERF).

77. The Discharger has raised concerns about the occurrence of artifactual (false positive) cyanide as evidenced by effluent concentrations greater than influent concentrations. The Discharger supports efforts to develop a site-specific objective for cyanide in the Bay, given that cyanide does not persist in the environment and that the current WQO was based on testing with East Coast species. A cyanide SSO for Puget Sound, Washington using West Coast species has been approved by U.S. EPA Region X.

78. This Order contains a provision requiring the Discharger, in cooperation with other dischargers in the Bay Area, to conduct a study for cyanide data collection. The Discharger, in co-operation with other Dischargers, is required to fully implement the study and submit a final report to the Board by May 18, 2003. The Board intends to include, in a subsequent permit revision, a required final limit for cyanide based on the study, as an enforceable limit. However, if the Discharger requests and demonstrates that it is infeasible to comply with the final limit, the permit revision will establish a maximum five-year compliance schedule. In the meantime, this Order establishes an interim performance limit of 10 µg/L, based on the previous Permit's limit. With the exception of one level of 20.5 µg/L in April 1998, all cyanide concentrations in the effluent since January 1998 have been below the interim limit.

Dieldrin.

79. The governing WQO for dieldrin is 0.00014 µg/L, based on CTR criteria. As noted in Findings 49 - 50, above, dieldrin has reasonable potential based on trigger 1 and permit limits are required. Using SIP procedures, Regional Board staff calculated the final WQBELs of 0.00014 µg/L monthly average and 0.00028 µg/L daily maximum. The Discharger indicated in its January 18, 2002 Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for dieldrin is required. The previous permit did not contain an effluent limit for dieldrin, and it is not possible to statistically determine current plant performance based on a single data point. Therefore, the interim dieldrin effluent limit is the MEC,

0.075 µg/L. This interim effluent limit is based on the best professional judgement of Regional Board staff and is consistent with interim limits set in similar situations for other NBSU members.

80. The current 303(d) list includes Lower San Francisco Bay as impaired by dieldrin. The Board intends to develop a dieldrin TMDL leading to overall reduction of dieldrin loading into Lower San Francisco Bay. The final WQBEL will be derived from the TMDL's WLAs. To assist the Board in developing the TMDL, the Discharger may participate in coordinated efforts (e.g., through BACWA and the RMP) to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for dieldrin, and to present the preferred method for approval by U.S. EPA.

4,4-DDE

81. The pollutant 4,4-DDE is chemically linked to the presence of DDT. The governing WQO for 4,4-DDE is 0.00059 µg/L, based on CTR criteria. As noted in Findings 46 - 48, above, 4,4-DDE has reasonable potential based on Trigger 2 and final WQBELs are required. The WQBELs calculated according to SIP procedures are 0.00059 µg/L monthly average and 0.00119 µg/L daily maximum. Since 4,4-DDE is bioaccumulative and on the 303(d) list due to bioconcentration in fish tissue, there is no assimilative capacity, and no dilution credit was allowed in the final limit calculation. The calculated WQBELs are below the SIP's current minimum level (ML) for 4,4, DDE, 0.05 µg/L. Therefore, compliance with the 4,4-DDE WQBELs will be determined by comparison of analytical results to the 0.05µg/L ML contained in SIP Appendix 4.

82. The current 303(d) list includes Lower San Francisco Bay as impaired by DDT. The Board intends to develop a TMDL leading to overall reduction of 4,4-DDE mass loading in Lower San Francisco Bay. The WQBELs specified in this Order may be changed to reflect the TMDL's WLAs. To assist the Board in developing TMDL, the Discharger has the option to participate in coordinated efforts (e.g., through BACWA and the RMP) to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for 4,4-DDE and present the preferred method for approval by U.S. EPA. If analytical methodologies improve and the detection levels decrease such that discharge concentrations of 4,4-DDE are detected above the limit in this Order, the Board will re-evaluate the feasibility of the Discharger complying with the limits and will determine if a compliance schedule and interim performance limits are needed.

Alpha-BHC

83. The governing WQO for alpha-BHC is 0.013 ug/L, the human health value contained in the CTR. As noted in Finding 51, above, alpha-BHC has reasonable potential based on Trigger 1, and final WQBELs are required. The WQBELs calculated pursuant to SIP procedures are 0.013 µg/L monthly average and 0.026 µg/L daily maximum. The Discharger indicated in its January 18, 2002 Feasibility Study that it is infeasible to comply immediately with the WQBELs. Therefore, pursuant to the provisions of the SIP, an interim effluent limit for alpha-BHC is required. The previous permit did not contain an effluent limit for alpha-BHC, and it is not possible to statistically determine current plant performance based on a single data point. Therefore, the interim effluent limit is the MEC, 0.04 µg/L. This interim effluent limit is based on the best professional judgement of Regional Board staff and is consistent with interim limits set in similar situations for other NBSU members.

Whole Effluent Acute Toxicity

84. This Order includes effluent limits for whole-effluent acute toxicity. Compliance evaluation is based on 96-hour flow-through bioassays. The U.S. EPA promulgated updated test methods for acute and chronic toxicity bioassays on October 16, 1995 in 40 CFR Part 136 (the 4th Edition). Dischargers have identified several practical and technical issues needing resolution before implementing the 4th Edition procedures. The primary unresolved issue is the use of younger, possibly more sensitive fish, which may require a reevaluation of permit limits. The State Board staff recommended to the Boards that holders of new or renewed permits be allowed a time period during which laboratories can become proficient in conducting the new tests. Provision 6, below, grants the Discharger 12 months to implement the new test methods. In the interim, the Discharger is required to continue using the current test protocols.

Whole Effluent Chronic Toxicity

85. The Discharger conducted a joint study on chronic toxicity with other NBSU members in the early 1990s. That study is no longer valid because one of the discharge contributors to NBSU has ceased operations and no longer discharges. Therefore, this permit requires the Discharger to conduct a new study to quantify the chronic toxicity in its discharge. The Board encourages the Discharger and other NBSU members to cooperatively conduct this study so as to maximize efficiency.

Coliform Limits

86. The Basin Plan's Table 4-2 and its footnotes allow fecal coliform limitations to be substituted for total coliform limitations provided that the Discharger conclusively demonstrates "through a program approved by the Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving waters". Several dischargers since 1992 have conducted chlorination reduction and receiving water impact monitoring studies, to support substitution of fecal for total coliform effluent limits. In the Board's prior actions to substitute fecal for total coliform limits, the Board has chosen to adopt the relevant fecal coliform water quality objectives as effluent limits. For deep water dischargers such as the NBSU with water contact recreation (REC-1) beneficial uses in the vicinity of their outfalls, the applicable WQOs are the Basin Plan's 5-day geometric-mean fecal coliform value of 200 MPN/100mL and 90th percentile limits of 400 MPN/100mL as effluent limits.

Pollutant Minimization/Pollution Prevention

87. The Discharger has an approved Pretreatment Program and has established a Pollution Prevention Program under the requirements specified by the Board.

    a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (the reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.

    b. There may be some redundancy required between the Pollution Prevention Program and the Pollutant Minimization Program.

    c. Where the two programs' requirements overlap, the Discharger is allowed to continue, to modify, and/or to expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.

d. For copper, mercury alpha BHC and dieldrin, the Discharger will conduct any additional source control measures in accordance with California Water Code 13263.3 and Section 2.1 of the SIP. Section 13263.3 establishes a separate process - outside of the NPDES permitting process - for preparing, reviewing, approving, and implementing such source control.

e. The Board staff intends to require an objective third party to establish model programs, and to review program proposals and reports for adequacy. This is to encourage use of Pollution Prevention and does not abrogate the Board's responsibility for regulation and review of the Discharger's Pollution Prevention Program. Board staff will work with the Discharger and other POTWs to identify the appropriate third party for this effort.

Special Studies

Required Studies

Dioxin Study

88. The SIP states that each Regional Board shall require major and minor POTWs and industrial Dischargers in its region to conduct effluent monitoring for 2,3,7,8-TCDD congeners listed in the Board's August 6, 2001 letter, regardless of whether an effluent limit is required for 2,3,7,8-TCDD. The monitoring shall be consistent with the Board's August 6, 2001 letter. The monitoring is intended to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries. The Boards will use these monitoring data to establish strategies for a future approach to controlling these compounds across different environmental media.

Effluent Characterization for Selected Constituents

89. Regional Board staff's review of effluent monitoring data from September 1994 through December 2000 found that there were insufficient monitoring data to determine reasonable potential for some pollutants listed in the SIP. Therefore, this Order requires additional monitoring for effluent characterization, pursuant to the requirements of Provision 3, below and the Board's August 6, 2001 letter.

Ambient Background Concentration Determination

90. Regional Board staff's review of the ambient background concentrations found that there were insufficient receiving water data to determine reasonable potential and calculate numeric WQBELs for some pollutants listed in the SIP. Therefore, this Order requires additional monitoring of ambient background concentrations pursuant to the requirements of Provision 4, below and the Board's August 6, 2001 letter.

Optional Studies

Optional Mass Offset.

91. This Order contains requirements to prevent further degradation of the impaired waterbody. Such requirements include the adoption of interim mass limits that are based on treatment plant performance, provisions for aggressive source control and waste minimization, feasibility studies for

wastewater reclamation, and treatment plant optimization. After implementing these efforts, the Discharger may find that further net reductions of the total mass loadings of the 303(d)-listed pollutants to the receiving water can only be achieved through a mass offset program. This Order includes an optional provision for a mass offset program.

Copper Translator Study.

92. The Basin Plan does not establish a WQO for copper. Therefore, the CTR WQO for copper, 3.1 µg/L dissolved criteria, is the applicable standard. Since NPDES permit limits must be expressed as a total recoverable metal value, a translator is required to convert the dissolved objective into a total recoverable objective. Per Appendix 3 of the SIP, the default translator used in this permit is 0.83, which converts the 3.1 µg/L dissolved to 3.7 µg/L total. An optional copper translator study is included in this permit to encourage the Discharger to develop a local translator value for copper in place of the default translator value established in the SIP, 0.83. The discharger may use local RMP station data in the development of the translator.

Other Discharge Characteristics and Permit Conditions

Pretreatment Program

93. The Discharger has implemented and is maintaining a U.S. EPA approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR 403) and the requirements specified in Attachment F "Pretreatment Requirements" and its revisions thereafter.

O & M Manual

94. The Discharger maintains an Operations and Maintenance Manual to provide plant and regulatory personnel with a source of information describing all equipment, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.

NPDES Permit and CEQA

95. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act - CEQA) pursuant to Section 13389 of the California Water Code.

Notification

96. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations. Responses to written comments are hereby incorporated by reference as part of this Order.

Public Hearing

97. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the City of Burlingame (discharger) shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.

2. Discharge of wastewater at any point where it does not receive an initial dilution of at least 10:1 is prohibited.

3. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment plant or from the collection system or pump stations tributary to the treatment plant, is prohibited except as provided for bypasses under the conditions stated in 40 CFR Part 122.41 (m)(4) and in Standard Provision A.13. Bypassing of individual treatment processes, for example during periods of high wet weather flow, is allowable provided that the combined discharge of fully treated and partially treated wastewater complies with the effluent and receiving water limitations in this Order.

4. The discharge of average dry weather flows greater than 5.5 MGD is prohibited. The average dry weather flow shall be determined over three consecutive dry weather months each year.

5. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by an NPDES permit, to a storm drain system or waters of the State are prohibited.

B. EFFLUENT LIMITATIONS

Conventional Pollutants

1. The following effluent limitations apply to effluent discharged to the NBSU joint discharge system (Sampling Station E-001 as defined in the Self-Monitoring Program) and thence to Lower San Francisco Bay through the discharge outfall (Sampling Station E-002 as defined in the Self-Monitoring Program). Chlorine residual shall be monitored at Sampling Station E-002 and reported by the Discharger.

   a. The effluent shall not exceed the following limits:

   Table 3. Effluent limitations for conventional constituents.

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
i Biochemical Oxygen Demand (BOD)	mg/L	30	45		
ii. Total Suspended Solids (TSS)	mg/L	30	45		
iii. Oil & Grease	mg/L	10		20	
iv. Settleable Matter	ml/L-hr	0.1		0.2	
v. Total Chlorine Residual[A]	mg/L				0.0

Footnote for Table 3

A. Requirement defined as below the limit of detection in standard test methods defined in the latest EPA approved edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedences are false positives. If convincing evidence is provided, Board staff will conclude that these false positive chlorine residual exceedences are not violations of this permit limit. Chlorine residual compliance may be demonstrated by monitoring the combined discharge at the NBSU common outfall (E-002).

2. pH: The pH of the effluent shall not exceed 9.0 nor be less than 6.0.The Discharger shall be in compliance with the pH limitation specified herein, provided that all of the following conditions are satisfied:

   a. pH is monitored continuously;

   b. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and

   c. No individual excursion from the range of pH values shall exceed 60 minutes.

3. 85 Percent Removal, BOD and TSS

   The arithmetic mean of the biochemical oxygen demand (BOD_5 20°C) and Total Suspended Solids (TSS) values, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, for influent samples collected at approximately the same times during the same period.

4. Fecal Coliform Bacteria

   The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:

   a. The five day geometric mean fecal coliform density shall not exceed a most probable number (MPN) of 200 MPN/100 mL, and

   b. the 90^{th} percentile value of the last ten samples shall not exceed 400 MPN/100 mL.

Toxic Pollutants

Whole Effluent Acute Toxicity

5. Representative samples of the effluent shall meet the following limits for acute toxicity. Compliance with these limits shall be achieved in accordance with Provision 6 of this Order.

   a. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be:

      i. an 11-sample median value of not less than 90 percent survival, as defined in subsection b.i., below, and

      ii. an 11-sample 90th percentile value of not less than 70 percent survival as defined in subsection b.ii., below.

   b. These acute toxicity limits are further defined as follows:

      i. 11-sample median limit:

Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.

ii. 90th percentile limit:

Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests also showed less than 70 percent survival.

iii. Ammonia:

If the Discharger demonstrates to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of this effluent limit.

6. Whole Eflluent Chronic Toxicity

Representative samples of the effluent shall meet the following requirements for chronic toxicity. Compliance with the Basin Plan narrative chronic toxicity objective shall be achieved in accordance with Provision 7 of this Order and shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated final effluent meeting test acceptability criteria:

a. Routine monitoring;

b. Accelerated monitoring after exceeding either of the following two triggers:

i. a three sample median value of 10 chronic toxicity (TUc),or

ii. a single sample maximum of 20 TUc or greater.

Compliance shall be determined as described in Provision 7, below. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order;

c. Return to routine monitoring if accelerated monitoring does not exceed either trigger in subsection b., above;

d. Initiate approved Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) work plan if accelerated monitoring confirms consistent toxicity above either trigger in subsection 6.b, above. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge. Failure to conduct the required toxicity tests or a TRE within a designated period shall result in the establishment of effluent limitations for chronic toxicity.

e. Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below both triggers in subsection 6.b, above , or the Executive Officer authorizes a return to routine monitoring, based on the results of the TRE.

Table 4. Toxic Substances.

The effluent shall not exceed the following limits:

Constituent		Daily Maximum	Monthly Average	Interim Daily Maximum	Interim Monthly Average	Units	Notes
CTR No.	Name						
6	Copper				27.0	µg/L	1, 6
8	Mercury				0.087	µg/L	1, 2
9	Nickel	64	32.7			µg/L	1
11	Silver	21.8	11.8			µg/L	1
13	Zinc	691	496			µg/L	1
14	Cyanide			10		µg/L	1, 3, 5
103	alpha-BHC				0.04	µg/L	1, 6
109	4,4-DDE	0.00119	0.00059			µg/L	1, 4
111	Dieldrin				0.075	µg/L	1, 6

Footnotes to Table 4:

1. a. Compliance with these limits is intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.

   b. All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer. The Discharger is in violation of the limit if the discharge concentration exceeds the effluent limitation and the reported minimum level (ML) for the analysis for that constituent.

   c. Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).

2. a. Mercury: Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques, with a method detection limit of 0.002 µg/L or lower.

   b. This interim effluent limitation shall remain in effect until March 31, 2010, as further described in Finding 34, above.

3. Cyanide: Compliance may be demonstrated by measurement of weak acid dissociable cyanide.

4. 4,4-DDE: As outlined in Section 2.4.5 of the SIP, compliance with these final limits is determined by comparing the effluent data with the corresponding Minimum Levels in Appendix 4 of the SIP: 0.05 µg/L for 4,4-DDE.

5. This interim limit shall remain in effect until May 18, 2003, or until the Board amends the limit based on additional background data and/or site-specific objectives for cyanide. However, during the next permit revision, Board staff may re-evaluate the interim limits.

6. This interim limit shall remain in effect until February 28, 2007, or until the Board amends the limit based on additional data, site-specific objectives, or the Waste Load Allocation in the TMDL. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.

7. Interim Mass Emission Limit for Mercury

Until the mercury TMDL and Waste Load Allocation are adopted, the Discharger shall demonstrate that the total mercury mass loading from its discharges to Lower San Francisco Bay has not increased by complying with the following conditions:

a. The total mercury mass load shall not exceed the mercury mass emission limit of 0.135 kilograms per month (kg/month), as computed in b, below.

b. Compliance with these limits shall be evaluated using monthly moving averages of total mass load, computed as described below:

$$12-Month\ Moving\ Average, kg/month = \frac{\sum (Last\ 12\ months'\ Monthly\ Total\ Mass\ Loads, kg/month)}{12}$$

where

$$Monthly\ Total\ Mass\ Load, kg/month = Q * C * 0.1151$$

where

Q = monthly average plant effluent flow, MGD, as reported

C = effluent concentration, µg/L, corresponding to each month's flow.

If more than one concentration measurement is obtained in a calendar month, the average of these measurements is used as the monthly concentration value for that month. If test results are less than the method detection limit used, the concentration value shall be assumed to be equal to the method detection limit.

0.1151 = unit conversion factor to obtain kg/month using monthly average flow in MGD and concentration in µg/L.

c. The discharger shall submit a cumulative total of mass loadings for the previous 12 months with each monthly Self-Monitoring Report. Compliance each month will be determined based on the 12-month moving averages over the previous 12 months of monitoring. The discharger may use monitoring data collected under accelerated schedules (i.e., special studies) to determine compliance.

d. The mercury TMDL and WLAs will supersede this mass emission limitation upon their completion. The Clean Water Act's antibacksliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following completion of the TMDL and WLA, if the requirements for an exception to the rule are met.

C. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any one place within 1 foot of the water surface:

a.	Dissolved Oxygen:	5.0 mg/L, minimum The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
b.	Dissolved Sulfide:	0.1 mg/L, maximum
c.	pH:	Variation from normal ambient pH by more than 0.5 pH units.
d.	Un-ionized Ammonia:	0.025 mg/L as N, annual median; and 0.16 mg/L as N, maximum.
e.	Nutrients:	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. SLUDGE MANAGEMENT PRACTICES

1. The discharger presently disposes of all stabilized, dewatered biosolids (sewage sludge) from the Discharger's wastewater treatment plant by land disposal under contract with SynaGro, Inc., as described in Finding 7, above. If the Discharger desires to dispose of sludge by a different method, the Discharger shall notify the Board and U.S. EPA in writing before start-up of the alternative disposal practice.

2. Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR Part 258. The discharger's annual self-monitoring report shall include the amount of sludge disposed of, and the landfill(s) to which it was sent.

3. All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, or in accordance with the requirements of 40 CFR Part 503. All the requirements of 40 CFR Part 503 are enforceable by the U.S. EPA whether or not they are stated in an NPDES permit of other permit issued to the Discharger.

4. Sludge treatment, storage, and disposal or reuse shall not create a nuisance or result in groundwater contamination.

5. The treatment and temporary storage of sewage sludge at the Discharger's wastewater treatment facility shall not cause waste material to be in a position where it will be carried from the sludge treatment and storage site and deposited in the waters of the State.

6. Permanent on-site storage or disposal of sewage sludge at the Discharger's wastewater treatment facility is not authorized by this permit. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.

7. The Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

E. PROVISIONS

Permit Compliance and Rescission of Previous Waste Discharge Requirements

1. The discharger shall comply with all sections of this Order beginning on March 1,2002. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 95-208 as amended by 98-117. Order No. 95-208 and 98-117 are hereby rescinded upon the effective date of this Order.

Special Studies

Cyanide Study and Schedule - Site-Specific Objective Study for Cyanide

2. The Discharger shall participate in a regional discharger-funded effort to conduct a study for cyanide data collection and development of site-specific objective. The cyanide study was submitted on October 29, 2001. The Board intends to include, in a subsequent permit revision, a final cyanide limit based on the study as an enforceable limit.

    a. Upon approval by the Executive Officer, the Discharger shall participate in the implementation of the cyanide study. Annual reports shall be submitted by January 31 of each year documenting the progress of the ambient background characterization, and site-specific objective studies. Annual report shall summarize the findings and progress to date, and include a realistic assessment of the shortest practicable time required to perform the remaining tasks of the studies.

b. By May 18, 2003, the Discharger, in co-operation with other Dischargers, shall complete the ambient background water quality characterization study for cyanide, and submit a report of the results.

c. By June 30, 2003, the Discharger, in co-operation with other Dischargers, shall submit a report of completion for the site-specific objective study for cyanide. This study shall be adequate to allow the Board to initiate the development and adoption of the site-specific objective for cyanide. This permit may be reopened to include a revised final limit based on the site-specific objective developed.

Effluent Characterization for Selected Constituents

3. The Discharger shall monitor and evaluate the discharged effluent for the constituents listed in Enclosure A of the Board's August 6, 2001 Letter. Compliance with this requirement shall be achieved in accordance with the specifications stated in the Board's August 6, 2001 Letter under Effluent Monitoring for major Dischargers. Interim and final reports shall be submitted to the Board in accordance with the schedule specified below (same schedule is also specified in August 6, 2001 Letter):

   a. The effluent monitoring shall be conducted according to the Discharger's September 27, 2001 effluent characterization study sampling plan, as ultimately approved by the Executive Officer, including any amendments required for approval.

   b. The Discharger shall submit technical reports acceptable to the Executive Officer documenting status and results of the study in accordance with the following:

Interim Report:	Submit report no later than:	May 18, 2003.
Final Report:	Submit report no later than:	July 31, 2006.

Ambient Background Receiving Water Study

4. The Discharger shall collect or participate in collecting background ambient receiving water data with other Dischargers and/or through the RMP. This information is required to perform RPAs and to calculate effluent limitation. On September 28, 2001, the Discharger, as a participating member of BACWA, submitted an ambient background receiving water study plan to the Executive Officer for approval. The Executive Officer conditionally approved this plan in November 2001. The Discharger shall submit technical reports acceptable to the Executive Officer documenting status and results of the study in accordance with the following:

b. Interim Report	May 18, 2003
Final Report	July 31, 2006

Pollutant Prevention and Minimization Program (PMP)

5. The Discharger shall continue to implement and improve its existing Pollution Prevention Program in order to reduce pollutant loadings to the treatment plant and therefore to the receiving waters.

   a. The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than August 30th. **Annual reports shall cover July of the preceding year through June of the current year.** Annual reports shall include at least the following information:

      i. *A brief description of its treatment plant, treatment plant processes and service area.*

      ii. *A discussion of the current pollutants of concern.* Periodically, the Discharger shall analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.

      iii. *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants. The Discharger should also identify sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.

      iv. *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. Tasks can target its industrial, commercial, or residential sectors. The Discharger may implement tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

      v. *Continuation of outreach tasks for City employees.* The Discharger shall continue outreach tasks for City employees. The overall goal of this task is to inform employees about the pollutants of concerns, potential sources, and how they might be able to help reduce the discharge of pollutants of concern into the treatment plant. The Discharger may provide a forum for employees to provide input to the Pollution Prevention Program.

      vi. *Continuation of a public outreach program.* The Discharger shall continue its public outreach program to communicate pollution prevention goals to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, continuation of a school outreach program, conducting plant tours, and providing public information in newspaper articles or advertisements, radio, television stories or spots, newsletters, utility bill inserts, and web sites. Information shall be specific to the target audiences. The Discharger should coordinate with other agencies as appropriate.

      vii. *Discussion of criteria used to measure the Program's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollution Prevention Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item a.iv, a.v, and a. vi, above.

      viii. *Documentation of efforts and progress.* This discussion shall detail all of the Discharger's activities in the Pollution Prevention Program during the reporting year.

ix. *Evaluation of Program's and tasks' effectiveness.* This Discharger shall utilize the criteria established in a.(vii) to evaluate the Program's and tasks' effectiveness.

x. *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks in order to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.

b. According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:

i. A sample result is reported as detected, but not quantified (less than the Minimum Level) and the effluent limitation is less than the reported Minimum Level; or

ii. A sample result is reported as not detected (less than the Method Detection Limit) and the effluent limitation is less than the Method Detection Limit;

the Discharger shall be required to expand its existing Pollution Prevention Program to include the reportable priority pollutant.

A priority pollutant becomes a reportable priority pollutant when:

i. there is evidence that it is present in the effluent above an effluent limitation and either (b)(i) or (b) (ii) is triggered, or

ii. the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level.

c. If triggered by the reasons in Provision 5.b, above, and when notified by the Executive Officer, the Discharger shall augment its Pollution Prevention Program within 6 months to include:

i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer, if it is demonstrated that source monitoring is unlikely to produce useful analytical data;

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer if it is demonstrated that influent monitoring is unlikely to produce useful analytical data;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining effluent concentrations of the reportable priority pollutant(s) at or below the effluent limitation;

iv. Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

v. An annual status report that shall be sent to the Board, including:

1) All Pollution Prevention monitoring results for the previous year;

2) A list of potential sources of the reportable priority pollutant(s);

3) A summary of all actions undertaken pursuant to the control strategy; and

4) A description of actions to be taken in the following year.

d. Where the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue, modify, and/or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.

e. These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in The Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

Toxicity Requirements

Acute Toxicity

6. Compliance with acute toxicity requirements of this Order shall be achieved in accordance with the following:

a. From permit adoption date to **February 28, 2003**:

i. Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays.

ii. Test organisms shall be fathead minnows or three-spined sticklebacks unless specified otherwise in writing by the Executive Officer.

iii. All bioassays shall be performed according to the Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, 3rd Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

b. From **March 1, 2003** onward:

i. Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays, or static renewal bioassays. If the Discharger will use static renewal tests, or continue to use 3rd Edition Methods, they must submit a technical report by October 1, 2002, identifying the reasons why flow-through bioassay is not feasible using the approved EPA protocol (4th edition).

ii. Test organisms shall be fathead minnows unless specified otherwise in writing by the Executive Officer.

iii. All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,"4th Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

Whole Effluent Chronic Toxicity Requirements

7. The discharger shall monitor and evaluate effluent discharged to the Lower Bay Discharge outfall for chronic toxicity in order to demonstrate compliance with the Basin Plan narrative toxicity objective. Compliance with this requirement shall be achieved in accordance with the following.

   a. The discharger shall conduct routine chronic toxicity monitoring in accordance with the SMP of this Order.

   b. If data from routine monitoring exceed either of the following evaluation parameters, then the Discharger shall conduct accelerated chronic toxicity monitoring. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order.

   c. Chronic toxicity evaluation parameters:

      i. A three sample median value of 10 TUc; and

      ii. A single sample maximum value of 20 TUc.

      iii. These parameters are defined as follows:

         1) Three-sample median: A test sample showing chronic toxicity greater than 10 TU_c represents an exceedence of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than 10 TU_c.

         2) TU_c (chronic toxicity unit): A TU_c equals 100/NOEL (e.g., If NOEL = 100, then toxicity = 1 TUc). NOEL is the no observed effect level determined from IC, EC, or NOEC values.

         3) The terms IC, EC, NOEL and NOEC and their use are defined in Attachment C of this Order.

   d. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.

   e. If accelerated monitoring tests continue to exceed either evaluation parameter, then the Discharger shall initiate a chronic toxicity reduction evaluation (TRE).

   f. The TRE shall be conducted in accordance with the following:

      i. The discharger shall prepare and submit to the Board for Executive Officer approval a TRE work plan. An initial generic workplan shall be submitted within 120 days of the date of adoption of this Order. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities.

      ii. The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.

      iii. The TRE shall be conducted in accordance with an approved work plan.

iv. The TRE needs to be specific to the discharge and discharger facility, and be in accordance with current technical guidance and reference materials including U.S. EPA guidance materials. TRE shall be conducted as a tiered evaluation process, such as summarized below:

1) Tier 1 consists of basic data collection (routine and accelerated monitoring).

2) Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.

3) Tier 3 consists of a toxicity identification evaluation (TIE).

4) Tier 4 consists of evaluation of options for additional effluent treatment processes.

5) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.

6) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.

v. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.

vi. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.

vii. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.

viii. Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.

ix. The Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

g. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Attachment C of the SMP. The discharger shall comply with these requirements as applicable to the discharge.

h. Board staff are in the process of evaluating data from previous ETCP chronic toxicity testing, and may revise the above chronic toxicity requirements based on the results of this evaluation.

Screening Plan For Chronic Toxicity: The Discharger shall conduct screening phase compliance monitoring as described in Attachment A of the attached Self Monitoring Program. The Discharger shall submit, in writing, a proposed Screening Phase Study Plan acceptable to the

Executive Officer by **June 30, 2002.** The Screening Phase Study Plan shall include an implementation schedule, and shall be implemented upon approval by the Executive Officer. Upon completion of the screening phase study, the Discharger shall submit a report acceptable to the Executive Officer which shall identify the most sensitive species, ongoing monitoring frequency, and am implementation schedule for ongoing monitoring.

Collection System Programs

8. Facility Operations during Wet Weather Conditions

   a. The Discharger shall maintain and operate the collection system in a manner to optimize control and conveyance of wastewater flows to the treatment plant facility.

   b. The Discharger shall maintain and operate the treatment plant facility in a manner to optimize treatment performance and ensure that discharges comply with secondary treatment limits at all times.

   c. In order to provide adequate overall reliability of the treatment process, especially during wet weather conditions, the Discharger shall at all times provide emergency stand-by power for all treatment units necessary to provide full secondary treatment, including disinfection processes. During wet weather flow conditions, the Discharger may use one of its aeration basins for flow equalization to achieve full secondary treatment of all wastewater.

Ongoing Programs

Regional Monitoring Program

9. The Discharger shall continue to participate in the Regional Monitoring Program (RMP) for trace substances in San Francisco Bay in lieu of more extensive effluent and receiving water self-monitoring requirements that may be imposed.

Pretreatment Program

10. The Discharger has implemented and is maintaining a U.S. EPA approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR 403) and the requirements specified in Attachment F "Pretreatment Requirements" and its revisions thereafter.

Optional Studies

Optional Mass Offset

11. The discharger may submit to the Board for approval a mass offset plan to reduce 303(d) listed pollutants to the same watershed or drainage basin. The Board may modify this Order to allow an approved mass offset program.

Copper and Nickel Translator Study and Schedule

12. In order to develop information that may be used to establish water quality based effluent limits based on dissolved criteria for copper and nickel, the Discharger may utilize RMP data from stations

nearest the Discharger's outfall. Copper and nickel translators will be calculated as part of the technical work being conducted for the North of Dumbarton copper/nickel TMDL/SSO project. Optionally, the Discharger may implement a sampling plan to collect data for development of dissolved-to-total translators for copper and nickel. If the Discharger chooses to proceed with the study, which may be conducted in cooperation with other Dischargers, the work shall be performed in accordance with the following tasks:

a. Copper and Nickel Translator Study Plan. The Discharger shall submit a study plan, acceptable to the Executive Officer, for collection of data that can be used for establishment of a dissolved to total copper translator, as discussed in the Findings.

b. After Executive Officer approval, the Discharger shall begin implementation of the study plan. The study plan shall provide for development of translators in accordance with the State Board's SIP, EPA guidelines, California Department of Fish and Game approval, and any relevant portions of the Basin Plan, as amended.

c. Copper and Nickel Translator Final Report: The Discharger shall conduct the translator study by using field sampling data approximate to the discharge point and in the vicinity of the discharge point, or as otherwise provided for in the approved workplan, and shall submit a report, acceptable to the Executive Officer, no later than February 28, 2004, documenting the results of the copper translator study. The study may be conducted in coordination with other Dischargers and may also include any other site specific information that the Discharger would like the Board to consider in development of a water quality based effluent limitation for copper and nickel.

Facilities Status Reports and Permit Administration

13. Wastewater Facilities, Review and Evaluation, and Status Reports

a. The discharger shall operate and maintain its wastewater collection, treatment and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

b. The discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a. above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its wastewater facility review and evaluation, including any recommended or planned actions and an estimated time schedule for these actions. This report shall include a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects. This report shall be submitted in accordance with the Annual Status Report Provision below.

14. Operations and Maintenance Manual, Review and Status Reports

a. The discharger shall maintain an Operations and Maintenance Manual (O & M Manual) as described in the findings of this Order for the Discharger's wastewater facilities. The O & M Manual shall be maintained in useable condition, and available for reference and use by all applicable personnel.

b. The discharger shall regularly review, and revise or update as necessary, the O & M Manual(s) in order for the document(s) to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its O & M Manual review and updating. This report shall include an estimated time schedule for completion of any revisions determined necessary, a description of any completed revisions, or a statement that no revisions are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

15. Contingency Plan, Review and Status Reports

a. The discharger shall maintain a Contingency Plan as required by Board Resolution 74-10 (attached), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

b. The discharger shall regularly review, and update as necessary, the Contingency Plan in order for the plan to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its Contingency Plan review and update. This report shall include a description or copy of any completed revisions, or a statement that no changes are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

Annual Status Reports

16. The annual reports identified in Provisions 13.c, 14.c, and 15.c, above, shall be submitted to the Board by June 30 of each year. Modification of report submittal dates may be authorized, in writing, by the Executive Officer.

303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review

17. The Discharger shall participate in the development of a TMDL or site-specific objective for copper, nickel, mercury, 4,4-DDE, and dieldrin. By January 31 of each year, the Discharger shall submit an update to the Board to document its participation efforts toward development of the TMDL(s) or site-specific objective(s). Regional Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

New Water Quality Objectives

18. As new or revised water quality objectives come into effect for the Bay and contiguous water bodies (whether statewide, regional or site-specific), effluent limitations in this Order will be modified as necessary to reflect updated water quality objectives. Adoption of effluent limitations contained in this Order are not intended to restrict in any way future modifications based on legally adopted water quality objectives.

Self-Monitoring Program

19. The discharger shall comply with the Self-Monitoring Program (SMP) for this Order as adopted by the Board. The SMPs may be amended by the Executive Officer pursuant to U.S. EPA regulation 40 CFR122.62, 122.63, and 124.5.

Standard Provisions and Reporting Requirements

20. The discharger shall comply with all applicable items of the Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (attached), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in 'Standard Provisions', the specifications of this Order shall apply.

Change in Control or Ownership

21. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board.

22. To assume responsibility of and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions & Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

Permit Reopener

23. The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order will or have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.

NPDES Permit

24. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective March 1, 2002, provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

Order Expiration and Reapplication

25. This Order expires January 31, 2007.

26. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements.

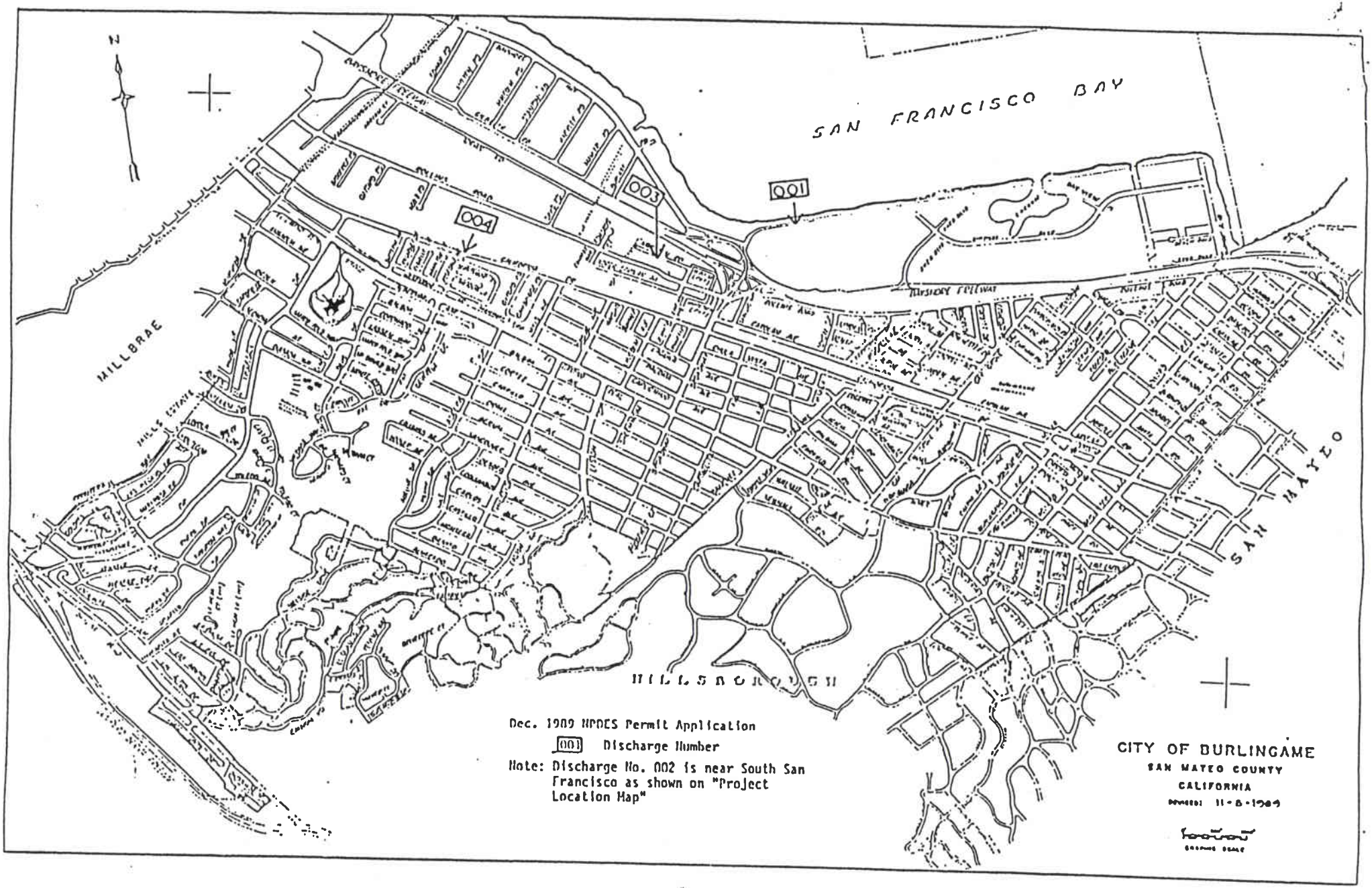
I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 27, 2002.

Lawrence P. Kolb
Acting
LORETTA K. BARSAMIAN
Executive Officer

Attachments:

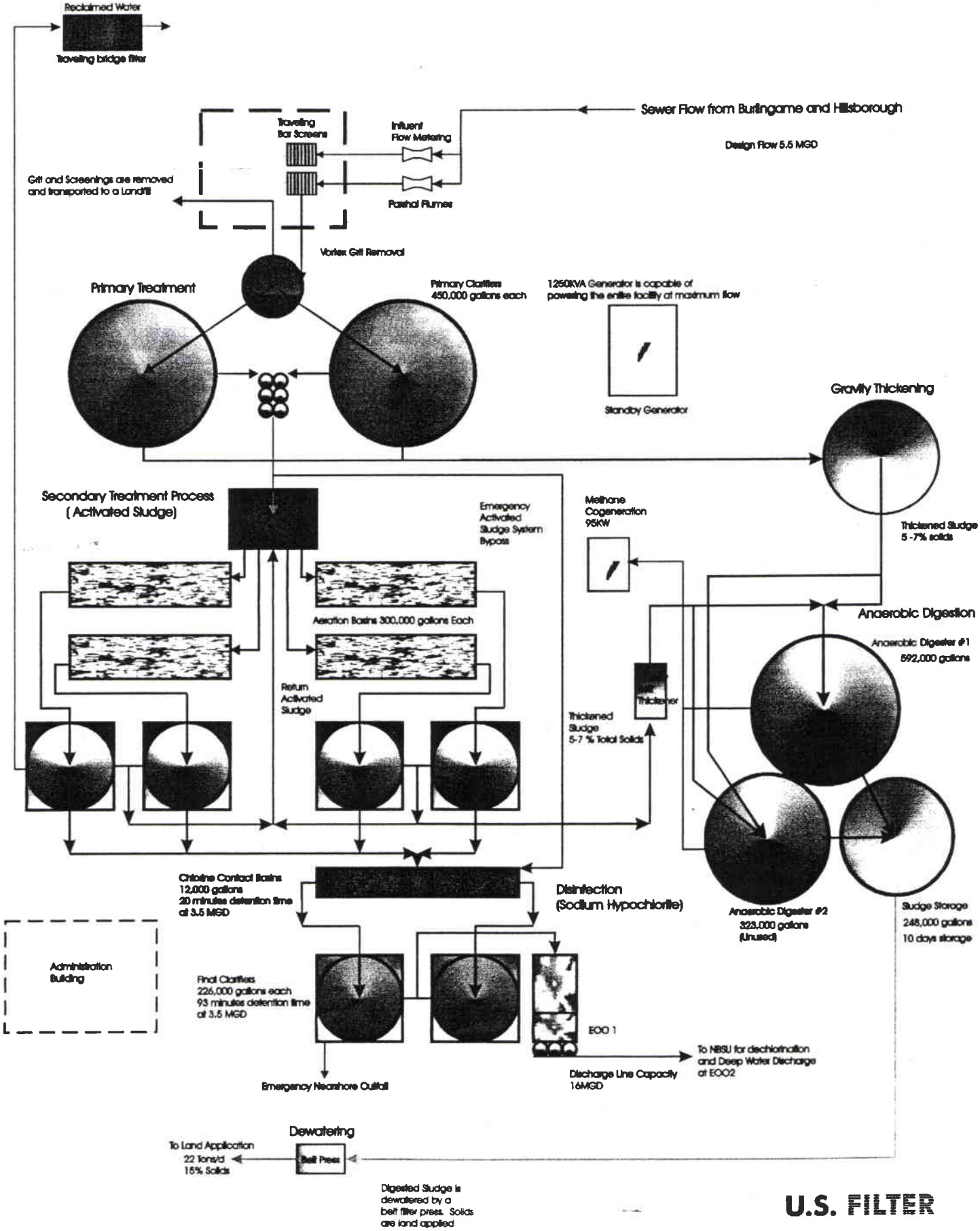
A. Discharge Facility Location Map
B. Discharge Facility Treatment Process Diagram
C. Self-Monitoring Program
D. Standard Provisions and Reporting Requirements, August 1993
E. Board Resolution No. 74-10 (available on request)
F. Pretreatment Program Requirements
G. June 11, 2001 Regional Board staff report "Staff Report, Statistical Analysis of Pooled Data from Region-Wide Ultra-clean Mercury Sampling."
H. January 18, 2002 City of Burlingame *Updated Feasibility Study and Request For Compliance Schedule for City of Burlingame, NPDES Permit No. CA0037788*
I. Fact Sheet For NPDES Permit And Waste Discharge Requirements
J. January 18, 2002 City of Burlingame *Comments on the Tentative Order Dated December 21, 2001, Reissuing NPDES Permit No. CA0037788*
K. Regional Board staff *Response To Comments for Item No. 14, Public Hearing on City of Burlingame Waste Water Treatment Plant NPDES Permit Reissuance*

Attachment A.
Discharge Facility Location Map


SAN FRANCISCO BAY
001
003
004
HILLBRAE
SAN MATEO
BURLINGAME
Dec. 1989 NPDES Permit Application
001 Discharge Number
Note: Discharge No. 002 is near South San Francisco as shown on "Project Location Map"
CITY OF BURLINGAME
SAN MATEO COUNTY
CALIFORNIA

Attachment B.
Discharge Facility Treatment Process Diagram

City Of Burlingame
Waste Water Treatment Plant



Attachment C.
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

CITY OF BURLINGAME

WASTEWATER TREATMENT PLANT

NORTH BAYSIDE SYSTEM UNIT

SAN MATEO COUNTY

NPDES PERMIT NO. CA0037788

ORDER NO. R2-2002 - 0027

Consists of:

Part A

Adopted August 1993

And

Part B

Adopted: February 27, 2002

August 1993

SELF-MONITORING PROGRAM
PART A

NPDES PERMITS

A. BASIS AND PURPOSE

Reporting responsibilities of waste dischargers are specified in Sections 13225(a),13267(b), 13268, 13383 and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitorig program by a waste discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regiional Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed in according to the 40 CFR S136 or other methods approved and specified by the Executive Officer of this Regional Board (See Part B).

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DOHS) or a laboratory waived by the Executive Officer from obtaining a certification for these analyses by the DOHS. The director of the laboratory whose name appears on the certification or his/her laboratory supervisor who isdirectly responsible for analytical work performed shall supervise all analytical work including appropriate quality assurance/quality contro1procedures in his or her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. SPECIFICATIONS FOR SAMPLING AND ANALYSES

The discharger is required to perform sampling and analyses according to the schedule in Part B in accordance with the following conditions:

1. Influent

Composite samples of influent shall be collected on varying days selected at random and shall not include any plant recirculation or other sides stream wastes. Deviation from this must be approved by the Executive Officer.

2. Effluent

a. Composite samples of effluent shall be collected on days coincident with influent composite sampling unless otherwise stipulated. At least one sampling day in each seven shall reflect one day of weekend discharge, one day of peak loading and during major unit operation shutdown or startup. The Executive Officer may approve an alternative sampling plan if it is demonstrated to the EO's satisfaction that expected operating conditions for the facility warrant a deviation from the standard sampling plan.

b. Grab samples of effluent shall be collected during periods of maximum peak flows and shall coincide with effluent composite sample days.

c. Fish bioassay samples shall be collected on days coincident with effluent composite sampling.

1) Bioassay tests should be performed on effluent samples after chlorination-dechlorination.

2) Total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival.

d. If two consecutive samples of a constituent monitored on a weekly or monthly basis in a 30 day period exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be increased to daily until the additional sampling shows that the most recent 30-day moving average is in compliance with the monthly average limit.

e. If any maximum daily limit is exceeded, the sampling frequency shall be increased to daily until two samples collected on consecutive days show compliance with the maximum daily limit.

f. If the final or intermediate results of any single bioassay test indicate a threatened violation (i.e. the percentage of surviving test organisms is less than the required survival percentage), a new test will begin and the discharger shall investigate the cause of the mortalities and report the finding in the next self-monitoring report.

g. Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be collected at least every 30 minutes until compliance is achieved.

h. When any type of bypass occurs, composite samples shall be collected on a daily basis for all constituents at all affected discharge points which have effluent limits for the duration of the bypass.

3. Storm Water

If all storm water is not directed back to the headworks during the wet season (October 1 to April 30) the discharger shall:

a. Conduct visual observations of the storm water discharge locations on at least one storm event per month that produces significant storm water discharge to observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.

b. Measure (or estimate) the total volume of storm water discharge and collect and analyze grab samples of storm water discharge from at least two storm events that produce significant storm water discharge for: oil and grease, pH, total suspended solids (TSS), specific conductance, and toxic chemicals and other pollutants that have a reasonable potential to be present in storm water discharge in significant quantities.

The grab sample(s) shall be taken during the first thirty minutes of the discharge. If the collection of the grab sample(s) during the first 30 minutes is impracticable, grab sample(s) can be taken during the first hour of the discharge, and the discharger shall explain in the annual monitoring report why the grab sample(s) could not be taken in the first 30 minutes.

c. Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May to September) at all storm water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; and/or analysis and validation of accurate piping schematics. Records shall be maintained of the description of the method used, date of testing, locations observed, and test results.

d. Samples shall be collected from all locations where storm water is discharged. Samples must represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the discharger may sample a reduced number of locations if it is established and documented in the monitoring program that storm water discharges from different locations are substantially identical.

e. Records of all storm water monitoring information and copies of all reports required by this permit shall be retained for a period of at least three years from the date of sample, observation, or report.

4. Receiving Waters:

a. Receiving water samples shall be collected on days coincident with compositesampling of effluent.

b. Receiving water samples shall be collected at each station on each sampling day during the period within 1 hour following low slack water. Where sampling at lower slack water period is not practical, sampling shall be performed during higher slack water period. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated.

c. Samples shall be collected within one foot below the surface of the receiving water body, unless otherwise stipulated.

5. Bottom Sediment Samples and Sampling and Reporting Guidelines

a. Bottom sediment sample means: (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters, or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertibrates.
Physical-chemical sample analyses include as a minimum:

1) pH

2) TOC (Total Organic Carbon)

3) Grease analysis:

(a) Mg grease per kg sediment

(b) Percent fraction of hydrocarbon in grease

4) Selected metals (depending on industrial input) mg/kg dry wt (and soluble metals in mg/l).

5) Particle size distribution, i.e. , % sand, % silt-clay

6) Depth of water at sampling station in meters

7) Water salinity and temperature in the water column within one meter of the bottom.

D. STANDARD OBSERVATIONS

1. Receiving Water

a. Floating and suspended materials of waste origin (to include oil, grease, algae, andother macroscopic particulate matter, presence or absence, source, and size of affected area.

b. Discoloration and turbidity: description of color, source, and size of affected area.

c. Odor: presence or absence, characterization, source, distance of travel, and wind direction.

d. Evidence of beneficial water use: presence of water–associated waterfowl or wildlife, fishermen, and other recreational activities in the vicinity of the sampling stations.

e. Hydrographic condition:

1) Time and height of corrected high and low tides (corrected to nearest NOAA location for the sampling date and time of sample and collection).

2) Depth of water columns and sampling depths.

f. Weather conditions:

1) Air temperatures.

2) Wind – direction and estimated velocity.

3) Total precipitation during the previous five days and on the day of observation.

2. Wastewater Effluent

a. Floating and suspended material of waste origin (to include oil, grease, algae, and other macroscopic particulate matter): presence or absence

b. Odor: presence or absence, characterization , source, distance of travel.

3. Beach and Shoreline

a. Material of waste origin: presence or absence, description of material, estimated size of affected area, and source.

b. beneficial use: estimate number of people sunbathing, swimming, water-skiing, surfing, etc.

4. Land Retention or Disposal Area

This applies both to liquid and solid wastes confined or unconfined.

a. For each impoundment determine amount of the freeboard at lowest point of dikes confining liquid wastes.

b. Evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (gpm, etc.)

c. Odor: presence or absence, characterization, source, and distance of travel.

d. Estimated number of waterfowl and other water-associated birds in the disposal area and vicinity.

5. Periphery of Waste Treatment and/or Disposal Facilities

a. Odor: presence or absence, characterization, source, and distance of travel.

b. Weather condition: wind direction and estimated velocity

E. RECORDS TO BE MAINTAINED

1. Written reports, strip charts, calibration and maintenance records, and other records shall be maintained by the discharger and accessible (at the waste treatment plant), and retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board or Regional Administrator of the USEPA, Region IX. Such records shall show the following for each sample:

   a. Identity of sampling and observation stations by number.

   b. Date and time of sampling and/or observations.

   c. Method of composite sampling (See Section G -Definition of Terms)

   d. Type of fish bioassay test (96 hour static or flow-through bioassay)

   e. Date and time that analyses are started and completed, and name of personnel performing the analyses.

   f. Complete procedure used, including method of preserving sample and identity and volumes of reagents used. A reference to specific section of Standard Methods is satisfactory.

   g. Calculations of results.

   h. Results of analyses ard/or observations.

2. A tabulation shall be maintained showing the following flow data for influent and effluent stations and disposal areas:

   a. Total waste flow or volume, for each day.

   b. Maximum and minimum daily flows for each month.

3. A tabulation shall be maintained showing the following information for all other plant wastes and disposal areas:

   a. Total monthly volume of grit, skimming, and undigested sludge (in cubic yards or cubic feet) from each treatment unit and the disposal site location

   b. Total monthly volume and solids content of dewatered sludge from each treatment unit (in cubic yards or cubic feet) and the disposal site location.

4. A tabulation reflecting bypassing and accidental waste spills shall be maintained showing information items listed in Sections E -1 and E-2 for each occurrence.

5. A chronological log for each month shall be maintained of the effluent disinfection andbacterial analyses, showing the following:

   a. Date and time each sample is collected and waste flow rate at time of collection.

   b. Chlorine residual, contact time, and dosage (in kilograms per day and parts per million).

c Coliform count for each sample

d. Moving median coliform of the number of samples specified by waste discharge requirements.

F. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Spill Reports

A report shall be made of any spill of oil or other hazardous material. Spills shall be reported to this Regional Board, at (510) 286-1255 on weekdays during office hours from 8 AM to 5 PM, and to the Office of Emergency Services at (800) 852-7550 during non office hours, and the U.S. Coast Guard at (415) 437-3091 (if the spill is into navigable waters) by telephone immediately after occurrence . A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to:

a. nature of waste or pollutant,

b. quantity involved,

c. duration of incident,

d. cause of spill,

e. SPCC Spill Prevention and Containment Plan in effect, if any,

f. estimated size of affected area,

g. nature of effects (i.e., fishkill, discoloration of receiving water, etc.),

h corrective measures that have been taken or planned, and a schedule of these activities, and

i. persons notified.

2. Reports of Plant Bypass, Treatment Unit Bypass and Permit Violation

In the event the discharger violates or threatens to violate the conditions of the waste discharge requirements and prohibitions or intends to experience a plant bypass or treatment unit bypass due to:

a. Maintenance work, power failures, or breakdown of waste treatment equipment, or

b. accidents caused by human error or negligence, or

c. other causes, such as acts of nature,

the discharger shall notify the Regional Board office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within 7 working days of the telephone notification . The written report shall include time and date, duration and estimated volume of waste bypassed, method used in estimating volume and person notified of the incident. The report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

In addition, the waste discharger shall promptly accelerate his monitoring program to analyze the discharge at least once every day (Section C.2.h). Such daily analyses shall continue until such time as the effluent limits have been attained, until bypassing stops or until such time as the Executive Officer determines to be appropriate. The results of such monitoring shall be included in the regular Self–Monitoring Report.

3. The discharger shall file a written technical report to be received at least 30 days prior to advertising for bid (60 days prior to construction) on any construction project which would cause or aggravate the discharge of waste in violation of requirements; said reports shall describe the nature, cost, and scheduling of all actions necessary to preclude such discharge. In no case will any discharge of wastes in violation of permit and order be permitted unless notification is made to the Executive Officer and approval obtained from the Regional Board.

4. Self–Monitoring Reports

Written reports shall be filed regularly for each calendar month (unless specified otherwise) and filed no later than the fifteenth day of the following month. The reports shall be comprised of the following:

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include:

1) Identification of all violations of waste discharge requirements found during the reporting period,

2) Details of the magnitude, frequency, and dates of all violations,

3) The cause of the violations, and

4) Discussion of the corrective actions taken or planned and the time schedule for completion. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory.

Monitoring reports and the letter transmitting reports shall be signed by a principal executive officer or ranking elected official of the discharger, or by a duly authorized representative of that person.

The letter shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed 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."

b. Compliance Evaluation Summary

Each report shall be accompanied by a compliance evaluation summary sheet prepared by the discharger. The report format will be prepared using the example shown in Part B. The discharger will prepare the format using those parameters and requirement limits for receiving water and effluent constituents specified in his permit.

c. Map or Aerial Photograph

A map or aerial photograph shall accompany the report showing sampling and observation station locations.

d. Results of Analyses and Observations

Tabulations of the results from each required analysis specified in **Part B** by date, time, type of sample, detection limit and station, signed by the laboratory director. The report format will be prepared using the examples shown in Part B.

1) If the discharger monitors any pollutant more frequently than required by this permit using test procedures approved under 40 CFR Part 136 or as specified in this Permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Self-Monitoring Report.

2) Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

e. Effluent Data Summary

Summary tabulations of the data shall include for each constituent total number of analyses, maximum, minimum, and average values for each period. The report format will be the NPDES Discharge Monitoring Report., EPA Form 3320-1. Flow data shall be included. The original is to be submitted to:

Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

f. Flow Data

The tabulation pursuant to Section F-2.

5. Annual Reporting

By January 30 of each year, the discharger shall submit an annual report to the Regional Board covering the previous calendar year. The report shall contain :

a. Both tabular and graphical summaries of the monitoring data during the previous year.

b. A comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.

c List of Approved Analyses

1) Listing of analyses for which the discharger is approved by the State Department of Health Services.

2) List of analyses performed for the discharger by another approved laboratory (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

3) List of "waived" analyses, as approved.
The report format shall be prepared by using the examples shown in Part B.

G. DEFINITION OF TERMS

1. A grab sample is defined as an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not be during hydraulic peaks. It is used primarily in determining compliance with daily maximum limits and instantaneous maximum limits. Grab samples represent only the condition that exists at the time the wastewater is collected.

2. A composite sample is defined as a sample composed of individual grab samples mixed in proportions varying not more than plus or minus five percent from the instantaneous rate (or highest concentration) of waste flow corresponding to each grab samplecollected at regular intervals not greater than one hour, or collected by the use of continuous automatic sampling devices capable of attaining the proportional accuracy stipulated above throughout the period o f discharge for 8 consecutive or of 24 consecutive hours, whichever is specified in Table 1 of Part B

3. A flow sample is defined as the accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.

4. Duly authorized representative is one whose:

   a. Authorization is made in writing by a principal executive officer or ranking elected official;

   b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general partner in a partnership, sole proprietor in a sole proprietorship, 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.)

5. Average values for daily and monthly values is obtained by taking the sum of all daily values divided by the number of all daily values measured during the specified period.

6. Median of an ordered set of values is that value below and above which there is an equal number of values, or which is the arithmetic mean of the two middle values, if there is no one middle value.

   a. A 5-day median value for coliform bacteria is the third highest count of 5 daily counts obtained from 5 consecutive sampling days. A 7-day median value is the fourth highest of 7 daily counts obtained from 7 consecutive sampling days.

   b. A 5-day moving median value for coliform bacteria is the median value calculated for each consecutive sampling day based upon the period from the sample day and the previous 4 sampling days.

   c. A 7-day moving median is calculated for each consecutive sampling day based upon the period from the sample day and the previous 6 sampling days. Moving median values for the beginning of the month shall be calculated using the previous month's counts (i.e. the last four counts for a 5-day moving median and the last seven counts for a 7-day moving median from the previous month).

7. A 6-month median means a moving median of daily values for any 180 day period in which daily values represent flow-weighted average concentrations within a daily or 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.

8. The geometric mean is anti log of log mean. Used for determining compliance with bacteriological standards, the lcg mean is calculated with the following equation:

$$\text{Log Mean} = \frac{1}{N} \sum_{i=1}^{N} \text{Log } C_i$$

in which "N" is the number of days samples that were analyze during the period and "C_i" is the concentration of bacteria (MPN/100 ml) found on each day of sampling.

9. Daily Maximum limit is the total discharge in a calendar day for pollutants measured by mass or the average measurement obtained for other pollutants.

10. Instantaneous Maximum is defined as the highest measurement obtained for the calendar day, as determined by a grab sample.

11. A depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled and shall be collected in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

12. Bottom sediment sampling and reporting guidelines mean those guidelines developed by the Regional Board staff to provide for standard bottom sampling, laboratory, and reporting procedures.

PART B

Adopted February 27, 2002

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I. Station Descriptions

NOTE: A sketch showing the locations of all sampling and observation stations shall be included in the Annual Report, and in the monthly report if stations change.

	Station	Description
A.	Influent	
	A-001	At any point in the treatment facilities upstream of the primary sedimentation basins at which all waste tributary to the treatment system is present, and preceding any phase of treatment.
B.	Effluent	
	E-001	Discharge into the NBSU joint use force main.
	E-002	NBSU combined outfall deepwater discharge into Lower San Francisco Bay.
C.	Overflows And Bypasses	
	OV1 to -OVn	Bypass or overflows from manholes, pump stations, portions of the collection system under the discharger's control.
D.	Treatment Plant Perimeter (Land Observations)	
	P1 to Pn	Points located along the perimeter of the wastewater treatment facility, at equidistant intervals of about 500 feet.

II. Schedule Of Sampling, Analyses And Observations

The schedule of sampling, analysis and observation shall be that given in Table 1 below. Sampling and analysis of additional constituents is required pursuant toTable 1 of the Regional Board's August 6, 2001 letter.

Table 1. Schedule Of Sampling, Analyses And Observations

				Sampling Station				
				Influent	**E-001: Effluent to NBSU Joint Use Force Main**		**E-002: NBSU Combined Outfall**	
CTR No.	**Parameter**	**Units**	**Sample Type [1]**	**C-24**	**G**	**C-24**	**G**	**C-24**
	Flow Rate	MGD	[2]			Cont		Cont.
	pH	pH units			5/W			
	Temperature	°C			5/W			
	$BOD_5$20°C or	mg/L		3/W		3/W		
	TSS	mg/L		5/W		5/W		
	Oil & Grease	mg/L	[3]		M			
	Settleable Matter	ml/l-hr		M	M			
	Fecal Coliform	MPN/100 ml			2/W			
	Chlorine Residual	mg/L	[4]			Cont/2H		Cont/2H
	Sulfides		[5]		D		D	
	Unionized Ammonia				M		M	
	Acute Toxicity	% Survival	[7]			M		
	Chronic Toxicity		[8]			2/Y		
6	Copper	µg/L				M		
8	Mercury	µg/L & kg/mo	[9]			M		
9	Nickel	µg/L				M		
11	Silver	µg/L				M		
13	Zinc	µg/L				M		
14	Cyanide	µg/L	[10]		M			
	Alpha-BHC	µg/L			Q			
109	4,4-DDE	pg/l	[11]		2/Y			
	Pretreatment Requirements (Table 3)	µg/L or ppb	[12]					

LEGEND FOR TABLE 1

Sampling Stations:
A = treatment facility influent
E = treatment facility effluent
OV = overflow and bypass points
P = treatment facility perimeter points

Types of Samples:
C-24 = composite sample, 24 hours (includes continuous sampling, such as for flows)
C-X = composite sample, X hours
G = grab sample
O = observation

Frequency of Sampling:
Cont. = continuous
Cont/D = continuous monitoring & daily reporting
D = once each day
E = each occurrence
H = once each hour (at hourly intervals)
M = once each month
W = once each week

Y = once each calendar year
2/Y = twice each calendar year (at about 6 months intervals)

3/W = three times each calendar week (on separate days)
5/W = five times each calendar week (on separate days)
Q = once each calendar quarter

Parameter and Unit Abbreviations:
BOD_5 20°C = Biochemical Oxygen Demand, 5-day, at 20°C
CBOD5 20oC = Carbonaceous BOD, 5-day, at 20 oC
D.O.= Dissolved Oxygen
PAHs = Polynuclear Aromatic Hydrocarbons
TSS = Total Suspended Solids

Est V = Estimated Volume (gallons)
mgd = million gallons per day
mg/L = milligrams per liter
ml/L-hr = milliliters per liter, per hour
µg/L = micrograms per liter
kg/d = kilograms per day
kg/mo = kilograms per month
MPN/100 ml = Most Probable Number per 100 milliliters

FOOTNOTES FOR TABLE 1

[1] Additional details regarding sampling, analyses and observations are given in Section III of this SMP, Specifications for Sampling, Analyses and Observations.

[2] Flow Monitoring.

Continuous flow monitoring depicted in Table 1 shall be conducted by continuous measurement and reporting of the following parameters:

Influent (A-001), and Effluent (E-001):

Daily:

Average Daily Flow (mgd)

Maximum Daily Flow (mgd)

Minimum Daily Flow (mgd).

Monthly: The same values as given in a. above, for the calendar month.

[3] Oil & Grease Monitoring.

Each Oil & Grease sample event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5 %. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

[4] Disinfection Process Monitoring.

Chlorine Residual Monitoring.

During all times when chlorination is used for disinfection of the effluent, effluent chlorine residual concentrations shall be monitored continuously, or by grab samples taken every two hours. Grab samples may be taken by hand or by automated means using in-line equipment such as three-way valves and chlorine residual analyzers. Chlorine residual concentrations shall be monitored and reported for sampling points both prior to and following dechlorination. Chlorine dosage (kg/day) shall be recorded on a daily basis and dechlorination chemical dosage and/or residual (if desired to demonstrate chlorine exceedances are false positives).

[5] If D.O. < 5.0 mg/L.

[6] Hardness shall be determined using the latest version of U.S. EPA Method 130.2. Alternative methods of analysis must be approved by the Executive Officer.

[7] Acute Toxicity Monitoring (Flow-through bioassay tests).

The following parameters shall be monitored on the sample stream used for the acute toxicity bioassays, at the start of the bioassay test and daily for the duration of the bioassay test, and the results reported:

- flow rate,
- water hardness,
- alkalinity,
- pH,
- temperature,
- dissolved oxygen,

- and ammonia nitrogen.

If the fish survival rate in the effluent is less than 70% or if the control fish survival rate is less than 90%, bioassay test shall be restarted with new batches of fish and continue back to back until compliance is demonstrated.

[8] Chronic Toxicity Monitoring: See also, Provision E.XX. and Attachment C of this Order.

Chronic Toxicity Monitoring Requirements

Sampling. The discharger shall collect 24-hour composite samples of treatment plant effluent at Sampling Station E-001, for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

Test Species: Chronic toxicity shall be monitored by using critical life stage test(s) and the most sensitive test specie(s) identified by screening phase testing or previous testing conducted under the ETCP. Test specie(s) shall be approved by the Executive Officer. Two test species may be required if test data indicate that there is alternating sensitivity between the two species.

Frequency:

i. *Routine Monitoring*: To be determined based on results of initial chronic toxicity screening. If the discharge demonstrates chronic toxicity, routine monitoring will be required. However, if the discharge demonstrates no chronic toxicity in excess of the triggers specified in the "Conditions for Accelerated Monitoring" subsection below, the monitoring frequency will be twice during the next five years, once during wet weather, and once during dry weather.

ii. *Accelerated Monitoring*: Quarterly, or as otherwise specified by the Executive Officer.

Methodology: Sample collection, handling and preservation shall be in accordance with U.S. EPA protocols. The test methodology used shall be in accordance with the references cited in this Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.

Dilution Series: The discharger shall conduct tests at 2%, 5%, 10%, 20%, and 40%. The "%" represents percent effluent as discharged.

Chronic Toxicity Reporting Requirements

Routine Reporting:

Toxicity test results for the current reporting period shall include, at a minimum, for each test:

- sample date(s)
- test initiation date
- test species
- end point values for each dilution (e.g. number of young, growth rate, percent survival)
- NOEC value(s) in percent effluent
- IC15, IC25, IC40, and IC50 values (or EC15, EC25 ... etc.) in percent effluent
- TUc values (100/NOEC, 100/IC25, and 100/EC25)
- Mean percent mortality (±s.d.) after 96 hours in 100% effluent (if applicable)
- NOEC and LOEC values for reference toxicant test(s)
- IC50 or EC50 value(s) for reference toxicant test(s)
- Available water quality measurements for each test (ex. pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

Compliance Summary: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above.

Reporting Raw Data in Electronic Format: The discharger shall report all chronic toxicity data upon completion of chronic toxicity testing in the format specified in "Suggested Standardized Reporting Requirements for Monitoring Chronic Toxicity," February 1993, SWRCB. The data shall be submitted in high density, double sided 3.5-inch floppy diskettes, or electronically via e-mail.

[9] Use ultra-clean sampling to the maximum extent practicable andanalytical methods for mercury monitoring pursuant to the Regional Board's 13267 letters issued to discharger. ML for compliance purposes is as listed in Table 2 above until the State Board adopts alternative minimum level. Alternative methods of analysis must be approved by the Executive Officer.

[10] The discharger may, at their option, analyze for cyanide as Weak Acid Dissociable Cyanide using protocols specified in Standard Method Part 4500-CN-I, U.S. EPA Method OI 1677, or equivalent alternatives in latest edition. Alternative methods of analysis must be approved by the Executive Officer.

[11] 4,4-DDE: see Table 2 below. This pollutant shall be monitored twice per year, once in dry season and once in wet season. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective water quality objectives.

[12] Pretreatment Program Requirements: see Table 3 below.

Table 2. Minimum Levels (µg/l or ppb)

For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below.

CTR #	Constituent [a]	Types of Analytical Methods [b]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
6.	Copper [c]					25	5	10	0.5	2			1000
8.	Mercury[d]								0.5			0.2	
9.	Nickel					50	5	20	1	5			1000
11.	Silver					10	1	10	0.25	2			1000
13.	Zinc					20		20	1	10			
14.	Cyanide				5								
103.	Alpha-BHC (α-BHC)	0.01											
109.	4,4'-DDE	0.05											

Footnotes to Table 2 of Self-Monitoring Program:

a.) According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in section 2.4.1). Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard. At no time is the discharger to use analytical data derived from the extrapolation beyond the lowest point of the calibration curve.

b.) Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9); DCP = Direct Current Plasma.

c.) For copper, the discharger may also use the following laboratory techniques with the relevant minimum level: GFAA with a minimum level of 5 µg/L and SPGFAA with a minimum level of 2 µg/L.

d.) Use ultra-clean sampling (EPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as EPA 245), if that alternate method has a Minimum Level of 2 ng/l or less.

Table 3. Pretreatment Monitoring Requirements

Constituents / EPA Method	Influent	Effluent	Sludge
VOC / 624	2/Y	2/Y	
BNA / 625	2/Y	2/Y	
Metals [13]	M	M	
O-Pest / 614	N/A	N/A	
C-Pest / 632	N/A	N/A	
Sludge [14]			2/Y

Definition of terms in Table 3:

M = once each month

Q = once each calendar quarter (at about three month intervals)

2/Y = twice each calendar year (at about 6 month intervals, once in the dry season, once in the wet season)

VOC = volatile organic compounds

BNA = base/neutrals and acids extractable organic compounds

O-Pest = organophosphorus pesticides, no monitoring required for this constituent

C-Pest = carbamate and urea pesticides, no monitoring required for this constituent

Key to notes used in Table 3:

[13] Same EPA method used to determine compliance with the respective NPDES permit. The parameters are arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, selenium and cyanide.

[14] EPA approved methods.

III. Specifications For Sampling, Analyses And Observations

Sampling, analyses and observations, and recording and reporting of results shall be conducted in accordance with the schedule given in Table 1 of this SMP, and in accordance with the following specifications, as well as all other applicable requirements given in this SMP. All analyses shall be conducted using analytical methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits.

A. Influent Monitoring.

Influent monitoring identified in Table 1 of this SMP is the minimum required monitoring. Additional sampling and analyses may be required in accordance with Pretreatment Program or Pollution Prevention/Source Control Program requirements.

B. Effluent Monitoring.

Composite samples of effluent shall be collected on varying days selected at random coincident with influent composite sampling unless otherwise stipulated. The Executive Officer may approve an alternative sampling plan if it is demonstrated to the Executive Officer's satisfaction that expected operating conditions for the facility warrant a deviation from the standard sampling plan.

Grab samples of effluent shall be collected during periods of maximum peak flows and shall coincide with effluent composite sample days.

Fish bioassay samples shall be collected on days coincident with effluent composite sampling.

Bioassay tests should be performed on effluent samples after chlorination-dechlorination.

Total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival.

If two consecutive samples within a 30 day period of a weekly or monthly monitored constituent exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is

once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be increased to daily until the additional sampling shows that the most recent 30-day moving average is in compliance with the monthly average limit.

If any maximum daily limit is exceeded, the sampling frequency shall be increased to daily until two samples collected on consecutive days show compliance with the maximum daily limit.

If the final or intermediate results of any single bioassay test indicate a threatened violation (i.e. the percentage of surviving test organisms is less than the required survival percentage), a new test will begin and the discharger shall investigate the cause of the mortalities and report the finding in the next self-monitoring report.

Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be collected at least every 30 minutes until compliance is achieved.

C. Storm Water

If all storm water is not directed back to the headworks during the wet season (October 1 to April 30) the discharger shall:

Conduct visual observations of the storm water discharge locations on at least one storm event per month that produces significant storm water discharge to observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.

Measure (or estimate) the total volume of storm water discharge and collect and analyze grab samples of storm water discharge from at least two storm events that produce significant storm water discharge for: oil and grease, pH, total suspended solids (TSS), specific conductance, and toxic chemicals and other pollutants that have a reasonable potential to be present in storm water discharge in significant quantities.

The grab sample(s) shall be taken during the first thirty minutes of the discharge. If the collection of the grab sample(s) during the first 30 minutes is impracticable, grab sample(s) can be taken during the first hour of the discharge, and the discharger shall explain in the annual monitoring report why the grab sample(s) could not be taken in the first 30 minutes.

Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May to September) at all storm water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; and/or analysis and validation of accurate piping schematics. Records shall be maintained of the description of the method used, date of testing, locations observed, and test results.

Samples shall be collected from all locations where storm water is discharged. Samples must represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the discharger may sample a reduced number of locations if it is established and documented in the monitoring program that storm water discharges from different locations are substantially identical.

Records of all storm water monitoring information and copies of all reports required by this permit shall be retained for a period of at least three years from the date of sample, observation, or report. If the Discharger obtains a separate stormwater permit under the provisions of the Statewide NPDES

Permit for Stormwater, the Executive Office will delete these storm water monitoring requirements from this Self-Monitoring Program.

IV. Reporting Requirements

A. General Reporting Requirements are described in Section E of the Regional Board's "*Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*", dated August 1993.

B. Modifications to Self-Monitoring Program, Part A:

1. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.

2. The following sections of Part A: C.3., C.4., C.5. are satisfied by participation in the Regional Monitoring Program.

3. The following sections of Part A: D.4., and E.3, are exclusions to the Self- Monitoring Program.

4. Section C.2.a of Part A, shall be modified as follows:

   If additional influent or effluent sampling beyond that required in Table 1 of Part B is done voluntarily or to fulfill any requirements in this permit other than those specified in Table 1 or Part B, corresponding collection of effluent or influent samples is not required by this section. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other requirements of this permit.

5. Section C.2.b of Part A shall be modified as follows:

   Grab samples of effluent shall be collected during periods of maximum peak flows at a frequency specified in Table 1 of Part B, shall coincide with effluent composite sample days, and shall be analyzed for the constituents specified in Table 1.

6. Section C.2.c of Part A shall be modified as follows (C.2.c(1) and (2) are unchanged):

   Effluent sampling will occur on at least one day of any multiple-day flow-through bioassay test required by Table 1 in Part B.

7. Section C.2.d. of Part A shall be modified as follows:

   d. If two consecutive samples of a constituent monitored on a weekly or monthly basis in a 30 day period exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be repeated once within 24 hours after results are received that indicate an exceedance of the monthly average effluent limit for that parameter. Repeat sampling shall occur in this way until the additional sampling shows two consecutive samples are in compliance with the monthly average limit

8. Section C.2.h of Part A shall be amended as follows:

h. When any type of bypass occurs (except for bypasses caused by high wet weather inflow), composite samples shall be collected on a daily basis for all constituents at all affected discharge points which have effluent limits for the duration of the bypass.

When bypassing occurs from any treatment process (primary, secondary, chlorination, dechlorination, etc.) in the treatment facilities during high wet weather inflow, the self-monitoring program shall include the following sampling and analyses:

i. When bypassing occurs from any primary or secondary treatment unit(s), composite samples for the duration of the bypass event for BOD and TSS analyses, and continuous monitoring of flow. If BOD or TSS , exceed the effluent limits, the bypass monitoring shall be expanded to include all constituents that have effluent limits for the duration of the bypass, until the BOD and TSS values stabilize to compliance with effluent limitations.

ii. When bypassing the chlorination process, grab samples at least daily for Fecal Coliform analyses; and continuous monitoring of flow.

iii. When bypassing the dechlorination process, grab samples hourly for chlorine residual; and continuous monitoring of flow.

9. Section D.1 of Part A, insert the following:

The requirements of this section only apply when receiving water standard observations are specified in table 1 of Part B. Receiving water standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

10. Section D.3 of Part A, insert the following:

The requirements of this section only apply when beach and shoreline standard observations are specified in Table 1 of Part B. Beach and shoreline standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

11. Section D.5 of Part A, insert the following:

The requirements of this section only apply when facility periphery standard observations are specified in Table 1 of Part B. Facility periphery standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

12. Section G. of Part A, Definition of Terms, amend as follows:

a. *Grab Sample.* A grab sample is defined as an individual sample collected in a short period of time not exceeding fifteen minutes. A grab sample represents only the conditions that exist at the time the sample is collected. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may not necessarily correspond with periods of peak hydraulic conditions. Grab samples are used primarily in determining compliance with daily and instantaneous maximum or minimum limits.

b. *Composite Sample.* A composite sample is defined as a sample composed of individual grab samples collected manually or by an autosampling device on the basis of time and/or flow as

specified in Table 1 of Part B. For flow-based compositing, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent from the representative flow rate of the waste stream being sampled measured at the time of grab sample collection. Alternately, equal volume grab samples may be individually analyzed and the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples forming time-based composite samples shall be collected at intervals not greater than those specified in Table 1 of Part B. The quantity of each grab sample forming a time-based composite sample shall be a set or flow proportional volume as specified in Table 1 of Part B. For Oil and Grease a minimum of four grab samples, one every six hours over a 24-hour period shall be used. If a particular time or flow-based composite sampling protocol is not specified in Table 1 of Part B, the discharger shall determine and implement the most representative sampling protocol for the given parameter subject to approval by the Executive Officer.

c. *Average.* Average values for daily and monthly values are obtained by taking the sum of all daily values divided by the number of all daily values measured during the specified period. In calculating the monthly average, when there is more than one value for a given day, all the values for that day shall be averaged and the average value used as the daily value for that day.

C. Monthly Self-Monitoring Report (SMR).

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Board in accordance with the requirements listed below. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the discharger's operation practices. The report shall be submitted to the Regional Board no later than **forty-five (45) days after the end of the reporting month.**

1. Letter of Transmittal

Each report shall be submitted with a letter of transmittal. This letter shall include the following:

a. Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;

b. Details of the violations: parameters, magnitude, test results, frequency, and dates;

i. The cause of the violations;

ii. Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory.

c. The letter of transmittal shall be signed by the discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

" I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. 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."

2. Compliance Evaluation Summary

   Each report shall include a compliance evaluation summary. This summary shall include, for each parameter for which effluent limits are specified in the Permit, the number of samples taken during the monitoring period, and the number of samples in violation of applicable effluent limits.

3. Results of Analyses and Observations.

   i. Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result.

   ii. If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.

   iii. Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

4. Effluent Data Summary - U.S. EPA NPDES Discharge Monitoring Reports.

   Summary tabulations of monitoring data including maximum, minimum and average values for subject monitoring period shall be reported in accordance with the format given by the U.S. EPA NPDES Discharge Monitoring Report(s) (DMRs; US EPA Form 3320-1 or successor). Copies of these DMRs shall be provided to U.S. EPA as required by U.S. EPA.

5. Results of Analyses and Observations.

   a. Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result.

   b. If any parameter specified in Table 1 of Part B is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.

   c. Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

6. Data Reporting for Results Not Yet Available.

   The discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in timely manner. The Regional Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subject monitoring period, such

cases shall be described in the SMR. Data for these parameters, and relevant discussions of any observed violations, shall be included in the next following SMR.

7. Reporting Data in Electronic Format.

   The discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The discharger is currently submitting SMRs electronically in a format approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS). The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the SMP, then the approved ERS requirements supercede.

D. Self-Monitoring Program Annual Report (Annual Report).

An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Regional Board **by February 15 of the following year**. This report shall include the following:

- Both tabular and graphical summaries of monitoring data collected during the calendar year that characterizes treatment plant performance and compliance with waste discharge requirements.

- A comprehensive discussion of treatment plant performance and compliance with waste discharge requirements. This discussion should include any corrective actions taken or planned such as changes to facility equipment or operation practices which may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the discharger's wastewater collection, treatment or disposal practices.

- A plan view drawing or map showing the dischargers' facility, flow routing and sampling and observation station locations.

E. Spill Reports.

A report shall be made of any spill of oil or other hazardous material.

The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to Ray Balcom at the Regional Board:

Current telephone number: (510) 622 – 2312, (510) 622-2460 (FAX).

During non-office hours, to the State Office of Emergency Services:

Current telephone number: (800) 852 - 7550.

A written report shall be submitted to the Regional Board within five (5) working days following telephone notification, unless directed otherwise by Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall include the following:

Date and time of spill, and duration if known.

Location of spill (street address or description of location).

Nature of material spilled.

Quantity of material involved.

Receiving water body affected.

Cause of spill.

Observed impacts to receiving waters (e.g., discoloration, oil sheen, fishkill).

Corrective actions that were taken to contain, minimize or cleanup the spill.

Future corrective actions planned to be taken in order to prevent recurrence, and time schedule of implementation.

Persons or agencies contacted.

F. Reports of Collection System Overflows.

Overflows of sewage from the discharger's collection system, other than overflows specifically addressed elsewhere in this Order and SMP, shall be reported to the Regional Board in accordance with the following:

1. *Overflows in excess of 1,000 gallons.*

   a. Overflows in excess of 1,000 gallons shall be reported by telephone and written report, as follows:

   b. Overflows shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Notification shall be made as follows:

   c. Notify the current Board staff inspector, or case handler, by phone call or message, or by facsimile:

      - [current staff inspector, Ray Balcom, phone number (510) 622 –2312]
      - [current staff case handler: Ken Katen, phone number (510) 622 – 2485]
      - [current Regional Board Fax number: (510) 622 – 2460];

   d. Notify the State Office of Emergency Services at phone number: (800) 852 - 7550.

   e. Submit a written report of the incident in follow-up to telephone notification. The written report shall be submitted along with the regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff, and shall include the following:

      - Estimated date and time of overflow start and end.

- Location of overflow (street address or description of location).
- Estimated volume of overflow.
- Final disposition of overflowed wastewater (to land, storm drain, surface water body).
- Include the name of any receiving water body affected.
- Cause of overflow.
- Observed impacts to receiving waters if any (e.g., discoloration, fish kill).
- Corrective actions that were taken to contain, minimize or cleanup the overflow.
- Future corrective actions planned to be taken to prevent recurrence and time schedule of implementation.
- Persons or agencies contacted.

2. Overflows less than 1,000 gallons.

   Overflows less than 1,000 gallons shall be reported by written report, as follows:

   a. The discharge shall prepare and retain records of such overflows, with records available for review by Board staff upon request.

   b. The records for these overflows shall include the information as listed in 1.d. above.

   c. A summary of these overflows shall be submitted to the Regional Board annually, as part of the Discharger's Self-Monitoring Program Annual Report.

G. Reports of Treatment Plant Process Bypass or Significant Non-Compliance.

The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13:

1. A report shall be made of any incident, other than wet weather discharges or bypasses addressed elsewhere in this permit and self-monitoring program, where the discharger:

   a. experiences or intends to experience a bypass of any treatment process, or

   b. experiences violation or threatened violation of any daily maximum effluent limit contained in this Permit or other incident of significant non-compliance, due to:

      i. maintenance work, power failures or breakdown of waste treatment equipment, or

      ii. accidents caused by human error or negligence, or

      iii. other causes such as acts of nature.

2. Such incidents shall be reported to the Regional Board in accordance with the following:

   a. Notify Regional Board staff by telephone:

      i. within 24 hours of the time the discharger becomes aware of the incident, for incidents that have occurred, and

      ii. as soon as possible in advance of incidents that have not yet occurred.

   b. Submit a written report of the incident in follow-up to telephone notification.

   c. The written report shall be submitted along with regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff.

   d. The written report for a treatment process bypass shall include the following:

      i. Identification of treatment process bypassed;

      ii. Date and time of bypass start and end;

      iii. Total duration time;

      iv. Estimated total volume;

      v. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.

   e. The written report for violations of daily maximum effluent limits or similar significant non-compliance shall include information as described in section VII.B. of this SMP.

3. During any treatment process bypass, the discharger shall conduct additional monitoring as described in Section V of this SMP. The results of such monitoring shall be included in the regular SMR for the reporting period of the bypass.

V. Recording Requirements - Records To Be Maintained

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including self-monitoring program requirements, shall be maintained by the discharger in a manner and at a location (e.g., wastewater treatment plant or discharger offices) such that the records are accessible to Board staff. These records shall be retained by the discharger for a minimum of three years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Regional Board or by the Regional Administrator of the US EPA, Region IX.

Records to be maintained shall include the following:

A. Parameter Sampling and Analyses, and Observations.

For each sample, analysis or observation conducted, records shall include the following:

1. Parameter
2. Identity of sampling or observation station, consistent with the station descriptions given in this SMP.
3. Date and time of sampling or observation.
4. Method of sampling (grab, composite, other method).
5. Date and time analysis started and completed, and name of personnel or contract laboratory performing the analysis.
6. Reference or description of procedure(s) used for sample preservation and handling, and analytical method(s) used.
7. Calculations of results.
8. Analytical method detection limits and related quantitation parameters.
9. Results of analyses or observations.

B. Flow Monitoring Data.

For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:

1. Total flow or volume, for each day.
2. Maximum, minimum and average daily flows for each calendar month.

C. Wastewater Treatment Process Solids.

1. For each treatment process unit which involves solid removal from the wastewater stream, records shall include the following:
    a. Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested sludge), for each calendar month; and
    b. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
2. For final dewatered sludge from the treatment plant as whole, records shall include the following:
    a. Total volume and/or mass quantification of dewatered sludge, for each calendar month;
    a. Solids content of the dewatered sludge; and
    b. Final disposition of dewatered sludge (point of disposal location and disposal method).

D. Disinfection Process.

For the disinfection process, records shall be maintained documenting process operation and performance, including the following:

1. For bacteriological analyses:

    a. Date and time of each sample collected;

    b. Wastewater flow rate at the time of sample collection;

    c. Results of sample analyses (coliform count);

    d. Required statistical parameters of cumulative coliform values (e.g., moving median or log mean for number of samples or sampling period identified in waste discharge requirements).

2. For chlorination process, at least daily average values for the following:

    a. Chlorine residual in contact basin (mg/L);

    b. Contact time (minutes);

    c. Chlorine dosage (kg/day);

    d. Dechlorination chemical dosage (kg/day)

E. Treatment Process Bypasses.

A chronological log of all treatment process bypasses, other than wet weather bypasses addressed elsewhere in this permit and self-monitoring program, including the following:

1. Identification of treatment process bypassed;

2. Date and time of bypass start and end;

3. Total duration time;

4. Estimated total volume;

5. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.

F. Collection System Overflows

A chronological log of all collection system overflows, including the following:

1. Location of overflow;

2. Date and time of overflow start and end;

3. Total duration time;

4. Estimated total volume;

5. Description of, or reference to other report(s) describing, overflow event, cause, corrective actions taken, and any additional monitoring conducted.

VI. Selected Constituents Monitoring

A. Effluent monitoring shall include evaluation for all constituents listed in Table 2 by sampling and analysis of final effluent.

B. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective water quality objectives.

VII. Monitoring Methods And Minimum Detection Levels

A. The Discharger may use the methods listed in the Table 2 or alternate test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999); or

B. Where no methods are specified for a given pollutant in the Table 2 below, methods approved by the SWRCB or RWQCB.

VIII. Self-Monitoring Program Certification

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. RB2-2002-0027.

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.

3. Is effective as of **March 1, 2002**

Lawrence P. Kolb
for
LORETTA K. BARSAMIAN
Executive Officer

Attachment A: Chronic Toxicity – Definition of Terms and Screening Phase Requirements

ATTACHMENT A
CHRONIC TOXICITY
DEFINITION OF TERMS & SCREENING PHASE REQUIREMENTS

I. Definition of Terms

A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25}. If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25% of the test organisms.

C. Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25% reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as EPA's Bootstrap Procedure.

D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

A. The discharger shall perform screening phase monitoring:
   1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts, or
   2. Prior to Permit reissuance. Screening phase monitoring data shall be included in the NPDES Permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.

B. Design of the screening phase shall, at a minimum, consist of the following elements:
   1. Use of test species specified in Tables 1 and 2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer;
   2. Two stages:
      a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 (attached); and
      b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
   3. Appropriate controls; and
   4. Concurrent reference toxicant tests.

C. The discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

TABLE C 1
CRITICAL LIFE STAGE TOXICITY TESTS FOR ESTUARINE WATERS

SPECIES	(Scientific name)	EFFECT	TEST DURATION	REFERENCE
alga	(Skeletonema costatum) (Thalassiosira pseudonana)	growth rate	4 days	1
red alga	(Champia parvula)	number of cystocarps	7-9 days	5
Giant kelp	(Macrocystis pyrifera)	percent germination; germ tube length	48 hours	3
abalone	(Haliotis rufescens)	abnormal shell development	48 hours	3
oyster	(Crassostrea gigas)	{abnormal shell development;	48 hours	2
mussel	(Mytilus edulis)	{percent survival		
Echinoderms (urchins -	Strongylocentrotus purpuratus, S. franciscanus);	percent fertilization	1 hour	4
(sand dollar -	Dendraster excentricus)			
shrimp	(Mysidopsis bahia)	percent survival; growth; fecundity	7 days	5
silversides	(Menidia beryllina)	larval growth rate; percent survival	7 days	5

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for conducting static 96-hour toxicity tests with microalgae. Procedure E 1218-90. ASTM Philadelphia, PA.
2. American Society for Testing Materials (ASTM). 1989. Standard Practice for conducting static acute toxicity tests with larvae of four species of bivalve molluscs. Procedure E 724-89. ASTM, Philadelphia, PA.
3. Anderson, B.B. J.W. Hunt, S.L. Turpen, A.R. Coulon, M. Martin, D.L. McKeown, and F.H. Palmer. 1990. Procedures manual for conducting toxicity tests developed by the marine bioassay project. California State Water Resources Control Board, Sacramento.
4. Dinnel, P.J., J. Link, and Q. Stober. 1987. Improved methodology for sea urchin sperm cell bioassay for marine waters. Archives of Environmental Contamination and Toxicology 16:23-32. and S.L. Anderson. September 1, 1989. Technical Memorandum. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.
5. Weber, C.I., W.B. Horning, II, D.J. Klem, T.W. Neiheisel, P.A. Lewis, E.L. Robinson, J. Menkedick, and F. Kessler (eds.). 1988. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms. EPA-600/4-87/028. National Technical Information Service, Springfield, VA.

Attachment D.
Standard Provisions and Reporting Requirements, August 1993

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

August 1993

STANDARD PROVISIONS AND REPORTING REQUIREMENTS

For

NPDES SURFACE WATER DISCHARGE PERMITS

A. GENERAL PROVISIONS

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

2. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order.

3. Duty to Comply

   a. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in a Board adopted Order, discharger must comply with the new standard or prohibition. The Board will revise or modify the Order in accordance with such toxic effluent standard or prohibition and so notify the discharger.

   b. If more stringent applicable water quality standards are approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the discharger must comply with the new standard. The Board will revise and modify this Order in accordance with such more stringent standards.

   c. The filing of a request by the discharger for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR 122.41(f)]

4. Duty to Mitigate

   The discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this order and permit which has a reasonable likelihood

of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the Board or Executive Officer to determine the nature and impact of the violation. [40 CFR 122.41(d)]

5. Pursuant to U.S. Environmental Protection Agency regulations the discharger must notify the Regional Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application, or (2) a discharge of toxic pollutants not limited by this permit has occurred, or will occur, in concentrations that exceed the limits specified in 40 CFR 122.42(a).

6. The discharge of any radiological, chemical, or biological warfare agent waste is prohibited.

7. All facilities used for transport, treatment, or disposal of wastes shall be adequately protected against overflow or washout as the result of a 100-year frequency flood.

8. Collection, treatment, storage and disposal systems shall be operated in a manner that precludes public contact with wastewater, except where excluding the public is inappropriate, warning signs shall be posted.

9. Property Rights

   This Order and Permit does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state or local laws, nor create a vested right for the discharge to continue the waste discharge or guarantee the discharger a capacity right in the receiving water. [40 CFR 122.41(g)]

10. Inspection and Entry

    The Board or its authorized representatives shall be allowed:

    a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the order and permit;

    b. Access to and copy at, reasonable times, any records that must be kept under the conditions of the order and permit;

    c. To inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under the order and permit; and

d. To photograph, sample, and monitor, at reasonable times for the purpose of assuring compliance with the order and permit or as otherwise authorized by the Clean Water Act, any substances or parameters at any locations. [40 CFR 122.41(i)]

11. Permit Actions

This Order and Permit may be modified, revoked and reissued, or terminated in accordance with applicable State and/or Federal regulations. Cause for taking such action includes, but is not limited to any of the following:

a. Violation of any term or condition contained in the Order and Permit;

b. Obtaining the Order and Permit by misrepresentation, or by failure to disclose fully all relevant facts;

c. Endangerment to public health or environment that can only be regulated to acceptable levels by order and permit modification or termination; and

d. Any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

12. Duty to Provide Information

The discharger shall furnish, within a reasonable time, any information the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit. The discharger shall also furnish to the Board, upon request, copies of records required to be kept by its permit. [40 CFR 122.41(h)]

13. **Bypass** (the intentional diversion of waste streams from any portion of a treatment facility) is prohibited. The Board may take enforcement action against the discharger for plant bypass unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment facilities that 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.);

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 down time. 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 which occurred during normal periods of equipment downtime or preventive maintenance; and

c. The discharger submitted advance notice of the need for a bypass to the Board. 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. The discharger shall submit notice of an unanticipated bypass as required by 40 CFR 122.41(l)(6) (24 hour notice), as required in paragraph E.6.d.

The discharger may allow a bypass to occur that does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation.

14. Availability

A copy of this permit shall be maintained at the discharge facility and be available at all times to operating personnel.

15. Continuation of Expired Permit

This permit continues in force and effect until a new permit is issued or the Board rescinds the permit. Only those dischargers authorized to discharge under the expiring permit are covered by the continued permit.

B. STANDARD STORM WATER PROVISIONS

These provisions apply to facilities which do not direct all storm water flows to the wastewater treatment plant headworks.

1. The Storm Water Pollution Prevention Plan (SWPP Plan) shall be designed in accordance with good engineering practices and shall address the following objectives:

   a. to identify pollutant sources that may affect the quality of storm water discharges; and
   b. to identify, assign, and implement control measures and management practices to reduce pollutants in storm water discharges.

   The SWPP Plan may be combined with the existing spill prevention plan as required in accordance with Provision E.5. The SWPP Plan shall be retained on-site and made available upon request of a representative of the Board.

2. Source Identification

   The SWPP Plan shall provide a description of potential sources which may be expected to add significant quantities of pollutants to storm water discharges, or

which may result in non-storm water discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:

a. A topographical map (or other acceptable map if a topographical map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing: the wastewater treatment facility process areas, surface water bodies (including springs and wells), and the discharge point(s) where the facility's storm water discharges to a municipal storm drain system or other points to waters of the State. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.

b. A site map showing:
   i. Storm water conveyance, drainage, and discharge structures;
   ii. An outline of the storm water drainage areas for each storm water discharge point;
   iii. Paved areas and buildings;
   iv. Areas of pollutant contact with storm water or release to storm water, actual or potential, including but not limited to outdoor storage, and process areas, material loading, unloading, and access areas, and waste treatment, storage, and disposal areas;
   v. Location of existing storm water structural control measures (i.e., berms, coverings, etc.);
   vi. Surface water locations, including springs and wetlands;
   vii. Vehicle service areas.

c. A narrative description of the following:
   i. Wastewater treatment process activity areas;
   ii. Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with storm water discharges;
   iii. Material storage, loading, unloading, and access areas;
   iv. Existing structural and non-structural control measures (if any) to reduce pollutants in storm water discharge;
   v. Methods of on-site storage and disposal of significant materials.

d. A list of pollutants that have a reasonable potential to be present in storm water discharge in significant quantities.

3. Storm Water Management Controls

The SWPP Plan shall describe the storm water management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the SWPP Plan shall reflect identified potential sources of pollutants. The description of storm water management controls to be implemented shall include, as appropriate:

a. Storm Water Pollution Prevention Personnel

Identify specific individuals (and job titles) who are responsible for developing, implementing, and reviewing the SWPP Plan.

b. Good Housekeeping

Good housekeeping requires the maintenance of clean, orderly facility areas that discharge storm water. Material handling areas shall be inspected and cleaned to reduce potential for pollutants to enter the storm drain conveyance system.

c. Spill Prevention and Response

Identify areas where significant materials can spill into or otherwise enter the storm water conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, cleanup equipment and procedures should be identified, as appropriate. The necessary equipment to implement a clean up shall be available and personnel trained in proper response, containment and cleanup of spills. Internal reporting procedures for spills of significant materials shall be established.

d. Source Control

Source controls, such as elimination or reduction of the use of toxic pollutants, covering of pollutant source areas, sweeping of paved areas, containment of potential pollutants, labeling all storm drain inlets with "No Dumping" signs, isolation/separation of industrial from non-industrial pollutant sources so that runoff from these areas does not mix, etc.

e. Storm Water Management Practices

Storm water management practices are practices other than those which control the sources of pollutants. They include treatment/conveyance structures such as drop inlets, channels, retention/detention basins, treatment vaults, infiltration galleries, filters, oil/water separators, etc. Based on assessment of the potential of various sources to contribute pollutants to storm water discharges in significant quantities, additional storm water management practices to remove pollutants from storm water discharges shall be implemented and design criteria shall be described.

f. Sediment and Erosion Control

Measures to minimize erosion around the storm water drainage and discharge points such as riprap, revegetation, slope stabilization, etc. shall be described and implemented.

g. Employee Training

Employee training programs shall inform all personnel responsible for implementing the SWPP Plan. Training should address spill response, good housekeeping, and material management practices. New employee and refresher training schedules should be identified.

h. Inspections

All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering storm water discharges. A tracking or follow up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorder. Inspection records shall be retained for five years.

i. Records

A tracking and follow-up procedure shall be described to ensure that adequate response and corrective actions have been taken in response to inspections.

4. An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan are accurate and up to date. This results of this review shall be reported in the annual report to the Board on October 1 of each year.

C. SLUDGE MONITORING AND REPORTING

1. When sewage sludge is either sent to a landfill or applied to land as a soil amendment it should be monitored as follows:

a. Sewage sludge disposal shall be monitored at the following frequency:

Metric tons sludge/365 days	**Frequency**
0-290	Once per year
290-1500	Quarterly
1500-15,000	Six times per year
Over 15,000	Once per month

(Metric tons are on a dry weight basis)

b. Sludge shall be monitored for the following constituents:

Land Application: As, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, Zn
Municipal Landfill: Paint filter test (pursuant 40 CFR 258)

Sludge-only Landfill: As, Cd, Ni, (if no liner and leachate system)

2. The sludge must meet the following requirements prior to land application. The discharger must either demonstrate compliance or, if it sends the sludge to another party for further treatment and/or distribution, must give the recipient the information necessary to assure compliance.

   a. Exceptional quality sludge: Sludge that meets the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8) is exceptional quality sludge and does not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).

   b. Sludge used for agricultural land, forest, or reclamation shall meet the pollutant limits in Table I (ceiling concentrations) and Table II or Table III (cumulative loadings or pollutant concentration limits) of 503.13. It shall also meet the general requirements (503.12) and management practices (503.14) (if not exceptional quality), Class A or Class B pathogen levels with associated access restrictions (503.32) and one of the 10 vector attraction reduction requirements in 503.33(b)(1)-(b)(10).

   c. Sludge used for lawn or home gardens must meet exceptional quality sludge limits.

   d. Sludge that is sold or given away in a bag or other container shall meet the pollutant limits in either Table III or Table IV (pollutant concentration limits or annual pollutant loading rate limits) of 503.13. If Table IV is used, a label or information sheet must be attached that explains Table IV (see 503.14). The sludge must also meet the Class A pathogen limits and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8).

D. TREATMENT RELIABILITY

1. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment disposal and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with this order and permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. All of these procedures shall be described in an Operation and Maintenance Manual. The discharger shall keep in a state of readiness all systems necessary to achieve compliance with the conditions of this order and permit. All systems, both those in service and reserve, shall be inspected and maintained on a regular basis. Records shall be kept of the tests and made available to the Board. [40 CFR 122.41(e)]

2. Safeguard to electric power failure:

a. The discharger shall, within ninety (90) days of the effective date of this permit, submit to the Board for approval a description of the existing safeguards provided to assure that, should there be reduction, loss, or failure of electric power, the discharger shall comply with the terms and conditions of its Order. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Regional Board.

b. Should the Board not approve the existing safeguards, the discharger shall, within ninety (90) days of having been advised by the Board that the existing safeguards are inadequate, provide to the Board and the U.S. Environmental Protection Agency a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the permittee shall comply with the terms and conditions of this permit. The schedule of compliance shall, upon approval of the Board Executive Officer, become a condition of the Order.

c. If the discharger already has approved plan(s), the plan shall be revised and updated as specified in the plan or whenever there has been a material change in design or operation. A revised plan shall be submitted to the Board within ninety (90) days of the material change.

3. POTW facilities subject to this order and permit shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

a. All reports required by the order and permit and other information requested by the Board or USEPA Region 9 shall be signed by a principal executive officer or ranking elected official of the discharger, or by a duly authorized representative of that person. [40 CFR 122.22(b)]

b. Certification

All reports signed by a duly authorized representative under Provision E.1.a. shall contain the following certification:

"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed 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)]

2. Should the discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. [40 CFR 122.41(l)(8)]

3. False Reporting

   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 noncompliance shall be subject to enforcement procedures as identified in Section F of these Provisions.

4. Transfers

   a. This permit is not transferable to any person except after notice to the Board. The Board may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

   b. Transfer of control or ownership of a waste discharge facility under an National Pollutant Discharge Elimination System permit must be preceded by a notice to the Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing discharger and proposed discharger containing specific dates for transfer of responsibility, coverage, and liability between them. Whether an order and permit may be transferred without modification or revocation and reissuance is at the discretion of the Board. If order and permit modification or revocation and reissuance is necessary, transfer may be delayed 180 days after the Board's receipt of a complete application for waste discharge requirements and an NPDES permit.

5. Spill Prevention and Contingency Plans

   The discharger shall file with the Board, for Executive Officer review and approval within ninety (90) days after the effective date of this Order, a technical report or a statement that the existing plan(s) was reviewed and updated, as

appropriate, on preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. The technical report or updated revisions should:

a. Identify the possible sources of accidental loss, untreated or partially treated waste bypass, and polluted drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

b. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

c. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

This Board, after review of the technical report or updated revisions, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of this Order, upon notice to the discharger. If the discharger already has an approved plan(s) he shall update them as specified in the plan(s).

6. Compliance Reporting

a. Planned Changes

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

b. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final compliance dates contained in any compliance schedule shall be submitted within 10 working days following each scheduled date unless otherwise specified within this order and permit. If reporting noncompliance, the report shall include a description of the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance and an estimated date for achieving full compliance. A final report shall be submitted within 10 working days of achieving full compliance, documenting full compliance

c. Anticipated Non-compliance

All POTWs must provide adequate notice to the Board of:

i. Any introduction of new pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants.

ii. Any substantial or material change in the volume or character of pollutants being introduced into that POTW by an input source at the time of issuance of the permit.

Adequate notice shall include information on the quality and quantity of influent 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.

d. Non-compliance Reporting (Twenty-four hour reporting:)

i. The discharger shall report any noncompliance that may endanger health or the environment. All pertinent 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 working 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.

ii. The following shall be included as information that must be reported within 24 hours under this paragraph:

(1) Any unanticipated bypass that exceeds any effluent limitation in the permit.

(2) Any upset that exceeds any effluent limitation in the permit.

(3) Violation of a maximum daily discharge limitation for any of the pollutants listed in this permit to be reported within 24 hours.

(4) The Board may waive the above-required written report on a case-by-case basis.

F. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the Board.

2. Any violation of the permit constitutes violation of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act, and is the basis for enforcement action, permit termination, permit revocation and reissuance, denial of an application for permit reissuance; or a combination thereof.

3. The Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the California Water Code or federal law for violation of Board orders.

4. 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 and permit.

5. A discharger seeking to establish the occurrence of any upset (See Definitions, G. 24) has the burden of proof. A discharger who wishes to establish the affirmative defense of any upset in an action brought for noncompliance shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:

   a. an upset occurred and that the permittee can identify the cause(s) or the upset;

   b. the permitted facility was being properly operated at the time of the upset;

   c. the discharger submitted notice of the upset as required in paragraph E.6.d.; and

   d. the discharger complied with any remedial measures required under A.4.

   No determination made before an action for noncompliance, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.

   In any enforcement proceeding, the discharger seeking to establish the occurrence of any upset has the burden of proof. [40 CFR 122.41(n)]

G. DEFINITIONS

1. Bypass means the intentional diversion of waste streams from any portion of treatment facility.

2. Daily discharge means:

a. For flow rate measurements, the average flow rate measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling.

b. For pollutant measurements, the concentration or mass emission rate measured during a calendar day or during any 24-hour period reasonably representative of the calendar day for purposes of sampling.

3. Daily Maximum Limit means the maximum acceptable daily discharge. For pollutant measurements, unless otherwise specified, the results to be compared to the daily maximum limit are based on composite samples.

4. DDT and Derivatives shall mean the sum of the p,p' and o,p' isomers of DDT, DDD (TDE), and DDE.

5. Duly authorized representative is one whose:

a. Authorization is made in writing by a principal executive officer or ranking elected official;

b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, 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.); and

c. Written authorization is submitted to the USEPA Region 9. If an authorization becomes no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Board and USEPA Region 9 prior to or together with any reports, information, or applications to be signed by an authorized representative.

6. Hazardous substance means any substance designated under 40 CFR 116 pursuant to Section 311 of the Clean Water Act.

7. HCH shall mean the sum of the alpha, beta, gama (Lindane), and delta isomers of hexachlorocyclohexane.

8. Inadequately Treated Waste is wastewater receiving partial treatment but failing to meet discharge requirements.

9. Incompatible pollutants are:

a. Pollutants which create a fire or explosion hazard in the POTW;

b. Pollutants which will cause corrosive structural damage to the POTW, or wastewaters with pH lower than 5.0 pH units, unless the facilities are specifically designed to accommodate such wastewater;

c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

d. Any pollutant, including oxygen-demanding pollutants (e.g., BOD) released into the wastewater system at a flow rate and/or pollutant concentration which will cause interference with the POTW.

e. Heat in amounts which will inhibit biological activity in the POTW and result in interference, or heat in such quantities that the temperature at the POTW treatment plant exceeds 40°C (104°F) unless the works is designed to accommodate such heat or the Board approves alternate temperature limits.

10. Indirect discharger means a non-domestic discharger introducing pollutants into a publicly owned treatment and disposal system.

11. Initial dilution is the process which results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.

12. Mass emission rate is obtained from the following calculation for any calendar day:

$$\text{Mass emission rate (lb/day)} = \frac{8.345}{N} \left(\sum_{i=1}^{N} Q_i C_i \right)$$

$$\text{Mass emission rate (kg/day)} = \frac{3.785}{N} \left(\sum_{i=1}^{N} Q_i C_i \right)$$

In which 'N' is the number of samples analyzed in any calendar day. 'Q_i' and 'C_i' are the flow rate (MGD) and the constituent concentration (mg/L), respectively, which are associated with each of the 'N' grab samples which may be taken in any calendar day. If a composite sample is taken, 'C_i' is the concentration measured in the composite sample and 'Q_i' is the average flow rate occurring during the period over which samples are composited. The daily concentration measured over any calendar day of all constituents shall be determined from the flow- weighted average of the same constituents in the combined waste streams as follows:

N

C_d = Average daily concentration = $\frac{1}{Q_t}(\Sigma Q_i C_i)$ $i=1$

In which 'N' is the number of component waste streams. 'Q' and 'C' are the flow rate (MGD) and the constituent concentration (mg/L), respectively, which are associated with each of the 'N' waste streams. 'Q_t' is the total flow rate of the combined waste streams.

13. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the formulas in paragraph above, using the effluent concentration limit specified in the order and permit for the period and the specified allowable flow. (Refer to Section C of Part A of Self- Monitoring Program for definitions of limitation period)

14. Overflow is defined as the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g. through manholes, at pump stations, and at collection points) upstream from the plant headworks or from any treatment plant facilities.

15. POTW means Publicly Owned Treatment Works.

16. POTW Removal efficiency is expressed as the percentage of the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities. Removal efficiencies of a treatment plant shall be determined using monthly averages of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

    Removal Efficiency (%) = 100 X [1-**(Effluent Conc./Influent Conc.)**]

    When preferred, the discharger may substitute mass loadings and mass emissions for the concentrations.

17. Priority pollutants are those constituents referred to in 40 CFR S122, Appendix D and listed in the USEPA NPDES Application Form 2C, (dated 6/80) Items V-3 through V-9.

18. Sludge means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from, or created in wastewater by the unit processes of a treatment system. It also includes but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow/underflow in the solids handling parts of the wastewater treatment system.

19. Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

20. Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or under 40 CFR S401.15.

21. Total Identifiable Chlorinated hydrocarbons (TICH) shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, PCBs and other identifiable chlorinated hydrocarbons.

22. 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 which can reasonably be expected to occur in the absence of a bypass or overflow. It does not mean economic loss caused by delays in production.

23. Untreated waste is defined as raw wastewater.

24. Upset means an exceptional incident in which there is unintentional temporary noncompliance with effluent technology based permit limitations in the order and permit because of factors beyond the reasonable control of the discharger. It 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.

25. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in this order and permit. The requirements of this order and permit are applicable to the entire volume of water, and the material therein, which is disposed of to surface and ground waters of the State of California.

Attachment E.
Board Resolution No. 74-10
(available on request)

Attachment F.
Pretreatment Program Requirements

Pretreatment Program Provisions

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 et seq.), as amended. The Discharger shall implement and enforce their respective Approved Pretreatment Programs or modified Pretreatment Programs as directed by the Board's Executive Officer or the EPA. The EPA and/or the State may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Clean Water Act.

2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial 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 industrial user, upon commencement of the discharge.

3. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 and amendments or modifications thereto including, but not limited to:

   i) Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);

   ii) Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);

   iii) Publish an annual list of industrial users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(vii);

   iv) Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and

   v) Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.

4. The Discharger shall submit annually a report to the EPA Region 9, the State Board and the Board describing the Discharger's respective pretreatment program activities over the previous twelve months. In the event that the Discharger is not in compliance with any conditions or requirements of this permit, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in **Appendix A** entitled, "Requirements for Pretreatment Annual Reports," which is made a part of this Order. The annual report is due on the last day of February each year.

5. The Discharger shall submit semiannual pretreatment reports to the EPA Region 9, the State Board and the Board describing the status of their respective significant industrial users (SIUs). The report shall contain, but not is limited to, the information specified in **Appendix B** entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31st (for the period January through June) and January 31st (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Board and EPA's comment and approval.

6. The Discharger may combine the annual pretreatment report with the semiannual pretreatment report (for the July through December reporting period). The combined report shall contain all of the information requested in Appendices A and B and will be due on January 31st of each year.

7. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge as described in **Appendix C** entitled, "Requirements for Influent, Effluent and Sludge Monitoring," which is made part of this Order. The results of the sampling and analysis, along with a discussion of any trends, shall be submitted in the semiannual reports. A tabulation of the data shall be included in the annual pretreatment report. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX A

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on the last day of February. [If the annual report is combined with the semiannual report (for the July through December period) the submittal deadline is January 31st of each year.] The purpose of the Annual Report is 1) to describe the status of the Publicly Owned Treatment Works (POTW) pretreatment program and 2) to report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation. The report shall contain at a minimum, but is not limited to, the following information:

1) **Cover Sheet**

The cover sheet must contain the name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of those POTWs that are part of the Pretreatment Program. Additionally, the cover sheet must include: the name, address and telephone number of a pretreatment contact person; the period covered in the report; a statement of truthfulness; and the dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the POTW (40 CFR 403.12(j)).

2) **Introduction**

The Introduction shall include any pertinent background information related to the City/ District/Agency, the POTW and/or the Industrial base of the area. Also, this section shall include an update on the status of any Pretreatment Compliance Inspection (PCI) tasks, Pretreatment Performance Evaluation tasks, Pretreatment Compliance Audit (PCA) tasks, Cleanup and Abatement Order (CAO) tasks, or other pretreatment-related enforcement actions required by the Board or the EPA. A more specific discussion shall be included in the section entitled, "Program Changes."

3) **Definitions**

This section shall contain a list of key terms and their definitions that the POTW uses to describe or characterize elements of its pretreatment program.

4) **Discussion of Upset, Interference and Pass Through**

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

a) a description of what occurred;

b) a description of what was done to identify the source;

c) the name and address of the IU responsible

d) the reason(s) why the incident occurred;

e) a description of the corrective actions taken; and

f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5) **Influent, Effluent and Sludge Monitoring Results**

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6) **Inspection and Sampling Program**

This section shall contain at a minimum, but is not limited to, the following information:

a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;

b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7) **Enforcement Procedures**

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Board shall also be given.

8) **Federal Categories**

This section shall contain a list of all of the federal categories that apply to the POTW. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9) **Local Standards**

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) **Compliance Activities**

a) **Inspection and Sampling Summary:** This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:

(1) the number of inspections and sampling events conducted for each SIU;

(2) the quarters in which these activities were conducted; and

(3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:

(a) in consistent compliance;

(b) in inconsistent compliance;

(c) in significant noncompliance;

(d) on a compliance schedule to achieve compliance, (include the date final compliance is required);

(e) not in compliance and not on a compliance schedule;

(f) compliance status unknown, and why not.

b) **Enforcement Summary:** This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:

(1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.

(6) Order to restrict/suspend discharge to the POTW.

(7) Order to disconnect the discharge from entering the POTW.

12) **Baseline Monitoring Report Update**

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

13) **Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/ inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

14) **Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

15) **Public Participation Summary**

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

16) **Sludge Storage and Disposal Practice**

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

17) **PCS Data Entry Form**

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18) **Other Subjects**

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX B:

REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

The semiannual pretreatment reports are due on July 31st (for pretreatment program activities conducted from January through June) and January 31st (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

1) **Influent, Effluent and Sludge Monitoring**

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the Discharger's facility.

2) **Industrial User Compliance Status**

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.

b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.

c. Indicate the compliance status of the SIU for the two quarters of the reporting period.

d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3) **POTW's Compliance with Pretreatment Program Requirements**

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

a. Date of latest PCA, PCI or PPE and report.

b. Date of the Discharger's response.

c. List of unresolved issues.

d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX C

REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of their respective treatment plant's influent, effluent and sludge at the frequency as shown in Tables 1and 3 of the Self Monitoring Program.

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in the individual POTW's NPDES permit. Any subsequent modifications of the NPDES requirements shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored in both the Discharger's NPDES permit and Pretreatment Program. Monitoring reports required by this Order shall be sent to the Pretreatment Coordinator.

1. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required test methods listed in Table 3 of the Self Monitoring Program. Any test method substitutions must have received prior written Regional Board approval. In addition, unless instructed otherwise in writing, the Discharger shall continue to monitor for those parameters at the frequency stated in Table 1. Influent and Effluent sampling locations shall be the same as those sites specified in the POTW's Self-Monitoring Program as set forth in its NPDES permit.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab sample shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

A. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times. Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

B. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.

C. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.

D. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Board upon request.

E. A tabulation of the test results shall be provided.

F. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

2. **Sludge Monitoring**

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

A. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or

B. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or

C. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Board approval.

A. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.

B. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Board upon request.

C. Test Results – Tabulate the test results and include the percent solids.

D. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/ dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.

Attachment G.
June 11, 2001 Regional Board staff report
"Staff Report, Statistical Analysis of Pooled Data from Region-Wide Ultra-clean Mercury Sampling."

Staff Report -

Statistical Analysis of Pooled Data From Regionwide Ultraclean Mercury Sampling For Municipal Dischargers

Prepared By:
Ken Katen, P.E.
California Regional Water Quality Control Board
San Francisco Bay Region
June 11, 2001

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Executive Summary

The entire San Francisco Bay Estuary is listed as being impaired by mercury, and a Total Maximum Daily Load (TMDL) with waste load allocations (WLAs) for individual point sources is being developed. Until the TMDL and WLAs are developed, mercury loadings into San Francisco Bay from individual point sources need to be held at current levels. Historically, most effluent mercury samples at municipal and industrial dischargers in the Bay Area Region were reported as below detection limits, which reduced the accuracy of mercury load estimates from these sources. In January 2000 municipal and industrial dischargers began using ultraclean sampling methods for mercury, which resulted in a much higher percentage of numerical results, with individual numerical results typically well below the older detection limits.

A number of NPDES permits for large dischargers are due for renewal in 2001. Regional Board staff performed a basic statistical analysis of pooled ultraclean mercury data from selected municipal dischargers, to evaluate the feasibility of developing regionwide interim performance-based mercury effluent limits for municipal dischargers based on ultraclean data that better reflect actual plant performance. Basic statistical analyses were used due to limitations in the underlying data set. Using basic statistical analyses is justified because municipal discharges are estimated to account for three percent (3%) of the current mercury mass loading to San Francisco Bay.

The statistical analysis used pooled data because, when the statistical study was initiated, most individual dischargers only had 12 or 13 ultraclean sample results, too few data points for reliable statistical analysis. In addition, ultraclean data from a cross section of different plants with generally similar processes, totaling approximately 400 total data points, is representative of general plant performance for the treatment categories. Also, pooling the data reduces the likelihood of penalizing plants that have implemented effective control measures and are already performing well, and rewarding other plants which may not have implemented similar measures. Finally, Regionwide effluent limits based on pooled data are more consistent and can be uniformly applied regionwide.

Data were gathered from the Region's Electronic Reporting System database, verified, and the statistical analysis was carried out to evaluate shape of data distribution, identify and evaluate relevance of data subgroups, suggest appropriate data transformations, normal-test untransformed and transformed data, and produce probability plots, whole-population percentile estimates, and confidence intervals on transformed, subgrouped data. The results of preliminary statistical analysis suggested simplified data groupings and prompted re-examination of some of the data. The final statistical analysis used the simplified groupings applied to 398 data points from 24 dischargers, with 285 data points from 18 secondary treatment plants and 113 data points from 7 advanced secondary treatment plants. Percentiles were calculated based on the final data set and treatment subgroups. Regional Board staff propose the following interim regionwide mercury effluent limits, based on the whole-population estimates of the 99.87^{th} percentile of the treatment subgroups, to be taken as monthly averages, for municipal dischargers:

Table 1. Proposed regionwide interim municipal mercury effluent limitations.

Treatment Method	Proposed Limit, ng/L
Secondary Treatment	87
Advanced Secondary Treatment	23
Mixed-regime	87 when operated as secondary 23 when operated as advanced secondary
Secondary with holding ponds	23

Treatment plant mercury performance – and its treatment data distribution – should not change unless a plant changes its treatment technology. Any percentile-based regulatory control point will indicate whether current performance is being maintained in the future. The limits proposed here are based on statistical whole-population estimates of 99.87^{th} percentile performance for municipal dischargers. The 99.87^{th} percentile is useful because it represents an upper limit that should never be exceeded, which simplifies compliance monitoring. Also, it is more conservative than the U.S. EPA guidance suggests (once every 3 years, or approximately the 99.91^{st} percentile).

As long as a plant's treatment technology and performance do not change, the data distribution of its effluent concentration samples should not change, either. Since mass load is a function of flow and concentration, unless flow increases, mass loading should not change. With implementation of mercury pollution prevention measures, reduction of inflow and infiltration, or wastewater reclamation, both effluent concentrations and loads can be expected to reduce and possibly offset flow increases due to growth.

Finally, the actual loadings estimated from the reported flows and concentrations in the ERS database project an annual average mercury mass loading of approximately 13 – 15 kilograms per year. This represents a significant difference from the earlier estimates of maximum possible loading, 45 kilograms per year [Regional Board, 2000, Table 22, Page 103], simply due to refinement of sampling and analytical techniques.

Introduction

Section 303(d) of the Clean Water Act requires each state to identify and list all of its water bodies that are water-quality impaired, and to develop Total Maximum Daily Loads (TMDL's) for each impairing constituent in each impaired water body. The entire San Francisco Bay estuary (the Bay) is currently listed as impaired by mercury, and staff of the San Francisco Bay Regional Water Quality Control Board (the Regional Board) are developing a mercury TMDL for San Francisco Bay. While the TMDL is being developed, the Regional Board intends to hold mercury mass loadings in permitted discharges to current levels.

Estimating current mercury mass loadings by municipal dischargers (publicly owned treatment works – POTW's), and establishing interim performance-based effluent limits (IPBLs) for them was complicated by the relatively high detection limits available for mercury until recently. High detection limits result in a relatively large number of results reported as "non detect" (ND). By letters dated August 4, 1999, and October 22, 1999, the Regional Board required all dischargers with National Pollutant Discharger Elimination System (NPDES) permits within the San Francisco Bay Region to begin sampling for mercury using ultra-clean sampling techniques starting in January 2000. Ultra-clean sampling techniques attain detection limits much lower than previously used methods, typically between 1 and 2 nanograms per liter (ng/L), compared to 200 ng/L. This resulted in fewer ND's (i.e., "<200 ng/L") than previous sampling efforts using the higher detection limits. Most POTW's and industrial dischargers began gathering low-detection-limit data in January 2000. Some of these dischargers – both POTW's and industrial dischargers – use the Region's electronic reporting system (ERS) to report the results of their ongoing monitoring programs, including low-detection-limit mercury data. In other cases, the discharger's data are hand-input into the ERS by Regional Board staff.

Typically, an IPBL is discharger specific, utilizes the last three years data, and is based on enough data points to produce a reasonable statistical estimate of current performance. As noted above, most of the POTW's reporting via the ERS only had about a dozen ultraclean mercury data points at the inception of the statistical study (since risen to about 15 each). That sample size is too small for a reliable statistical analysis for individual POTW's. Staff then considered the possibility of using the more than 400 data points pooled from all the POTW's to see if a "regional" IPBL could be developed that would apply to all the POTW's.

Staff applied a series of statistical tests aimed at answering the following questions:

- Is pooling the ultraclean data from various municipal dischargers statistically valid?

- Should the data be divided into subgroups and, if so, based on which factors?

- Can statistical analysis of pooled data guide development of regionwide IPBLs for mercury from municipal dischargers?

- Would establishing regionwide IPBLs hold all POTWs at current performance and be protective?

Procedures

Data Development and Analysis

In April 2001, staff gathered POTW-derived ultra-clean mercury data that also had associated effluent flow data from the ERS database. The mercury concentration data were originally reported in units of micrograms per liter (µg/L). A microgram is 1,000 nanograms. For ease of viewing, the mercury concentration data were converted to ng/L by multiplying the originally reported value by 1,000.

Next, the raw data (the preliminary data set) were checked for duplicates or blanks, which were removed, and to identify high values that might be outliers. Outliers – as indicated by examining boxplots of the data, see Figures 1 and 2, below - were verified, corrected, or removed based on further inquiries to the reporting dischargers. If an outlier was verified, it remained in the preliminary data set; if it resulted from a transcription or similar clerical error, it was corrected; and if it was associated with problems in the collection or analysis of the samples, it was removed from the preliminary data set. Results reported as below the detection limit (nondetects ND) were retained. This verified preliminary data set is reproduced in Appendix A.

Staff used MiniTab™, Release 13.30 to produce plots and conduct the statistical analysis of the data. The initial statistical analysis was aimed at determining

- if the preliminary data set consisted of one homogeneous data set, or multiple subsets;
- if multiple subsets, then how many and which variable defined the subsets; and
- the distribution of the data set(s).

Preliminary Data Analysis

Staff initially evaluated flow and concentration data. Flow data did not appear to follow any known data distribution and were not considered further in this analysis. Staff then produced and inspected boxplots of concentration data for all dischargers in the preliminary data set, as depicted in Figures 2 and 3, below. A key to the reading the boxplots is shown in Figure 1, below. The boxplots visually present the median, the middle 50 percent of the data (the interquartile range - IQR), the general extent of data, and potential outliers for each of the discharger data sets contained in the preliminary data set, in a format that made comparing their basic qualities easier.

Figure 1. Key to reading boxplots.

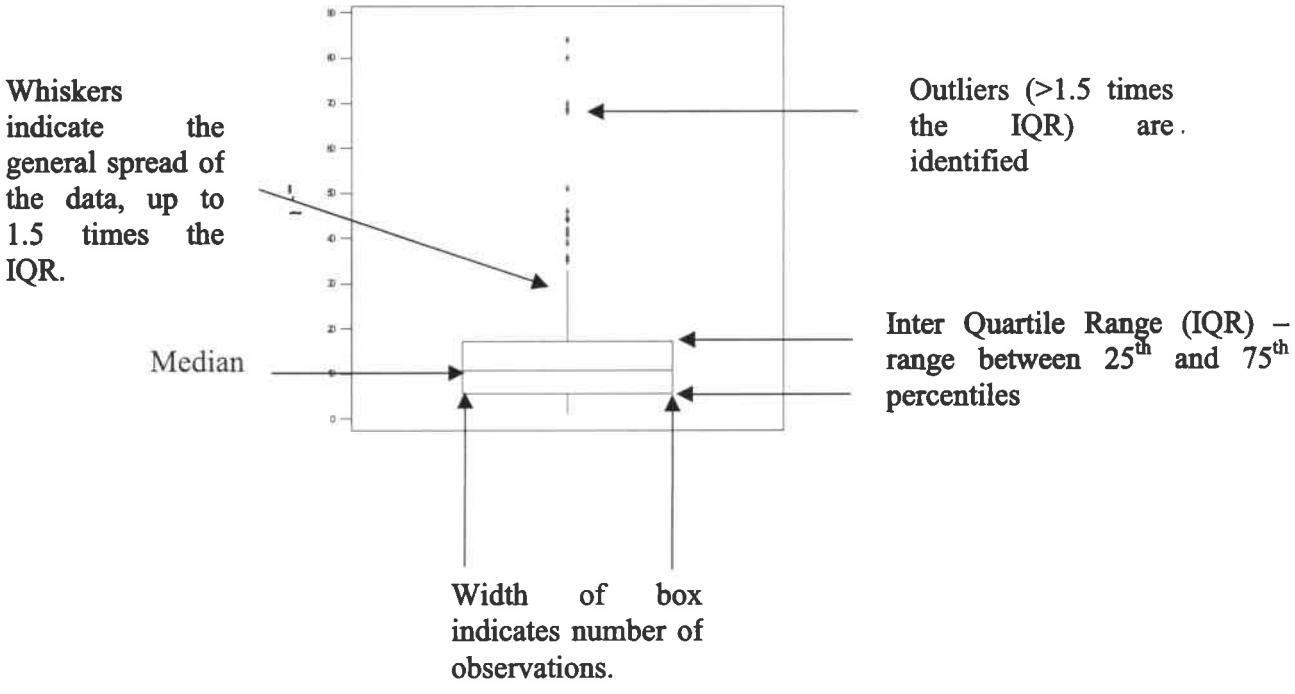
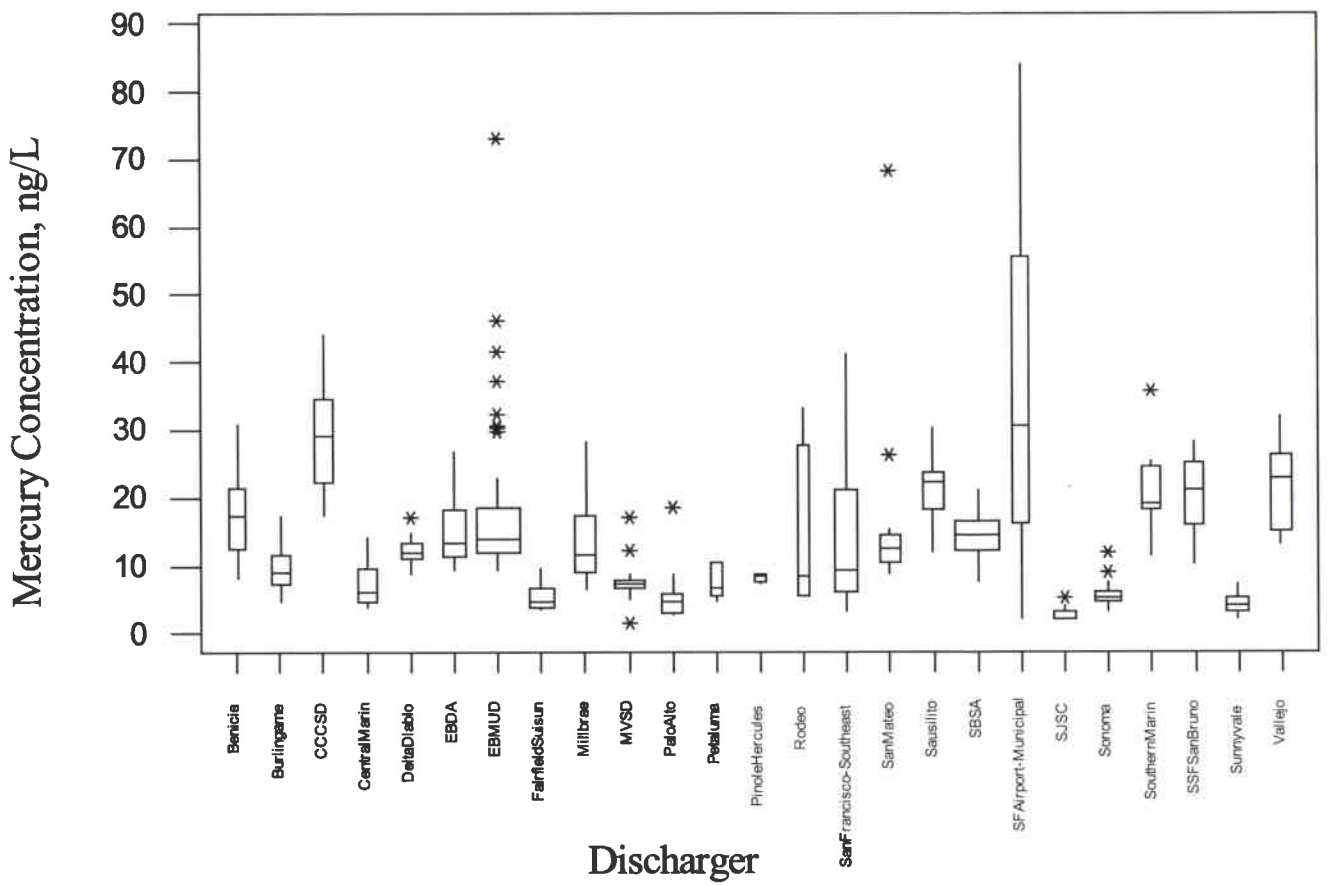


Figure 2. Boxplots of data in preliminary pooled data set, by discharger.



Inspection of the boxplots of all the preliminary pooled data suggested that it would be useful to group the data into subsets. Dischargers were categorized by treatment type, as listed in the Regional Board's 1995 *Water Quality Control Plan, San Francisco Bay Region (Region 2)* (Basin Plan) as amended [Table 4-9, pg. 4-74]. Regional Board staff verified the process classifications by checking the process descriptions contained in the current National Pollutant Discharge Elimination System (NPDES) permit for each discharger in the data set. The initial categories used were:

- full secondary treatment year round, by activated sludge and/or trickling filters;
- secondary treatment with occasional wet weather bypass, and
- advanced secondary treatment by activated sludge and/or trickling filters followed by filtration (later expanded to include secondary treatment consisting of large ponds).

Figure 3. Boxplots of preliminary pooled data set, by treatment type.

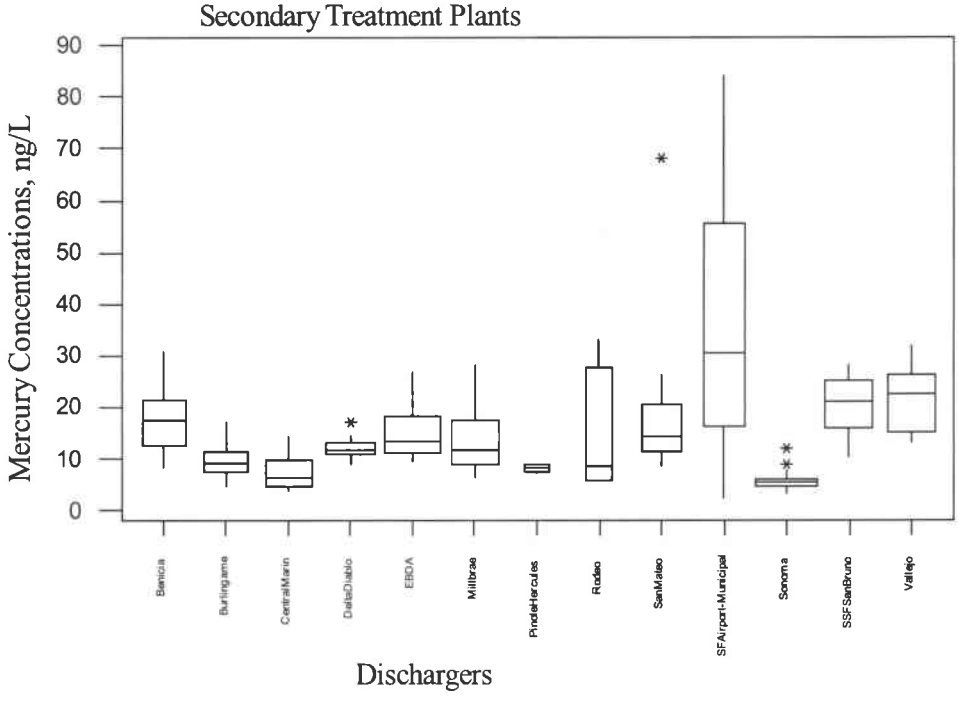
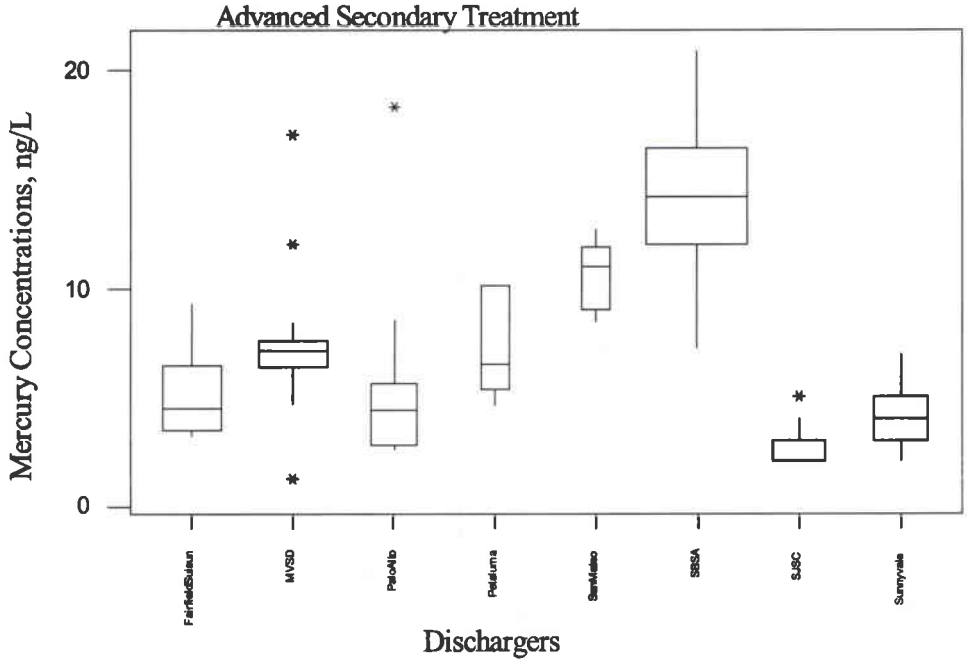
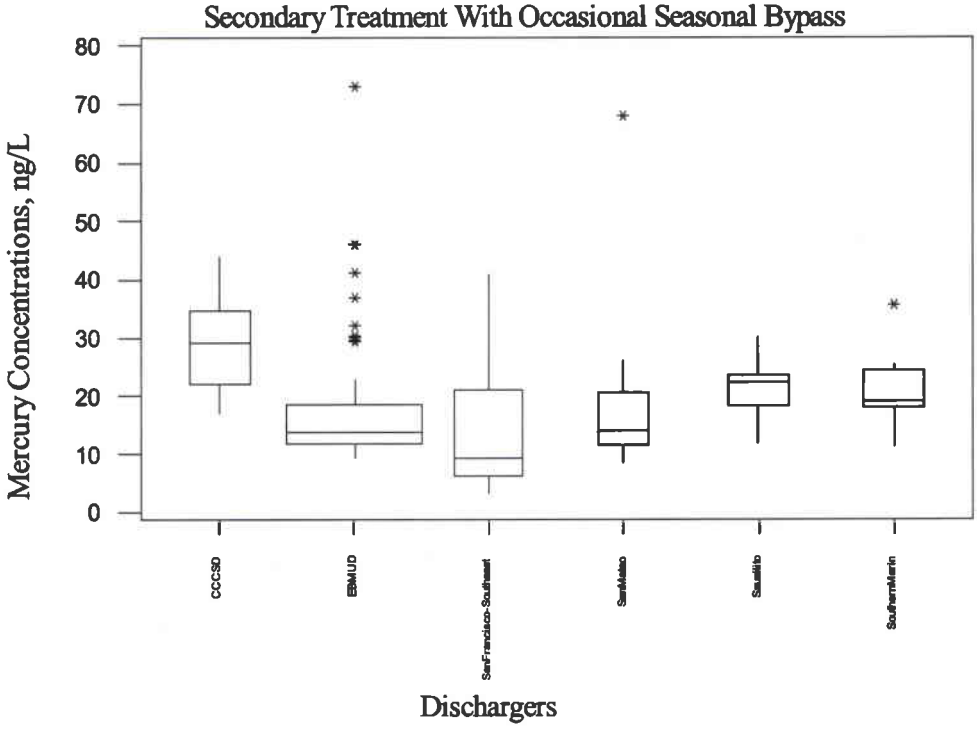


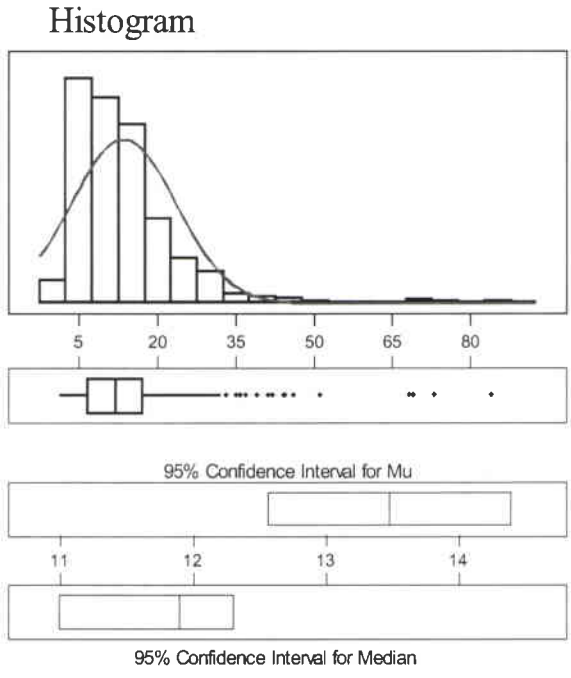
Figure 3. (Continued) Boxplots of preliminary pooled data set, by treatment type.





Before analyzing by subsets, staff examined the descriptive statistics of the preliminary pooled data, as shown in Figure 4, below, to make a preliminary evaluation of the data's distribution.

Figure 4. Descriptive statistics, mercury concentrations, preliminary pooled data set, original units.



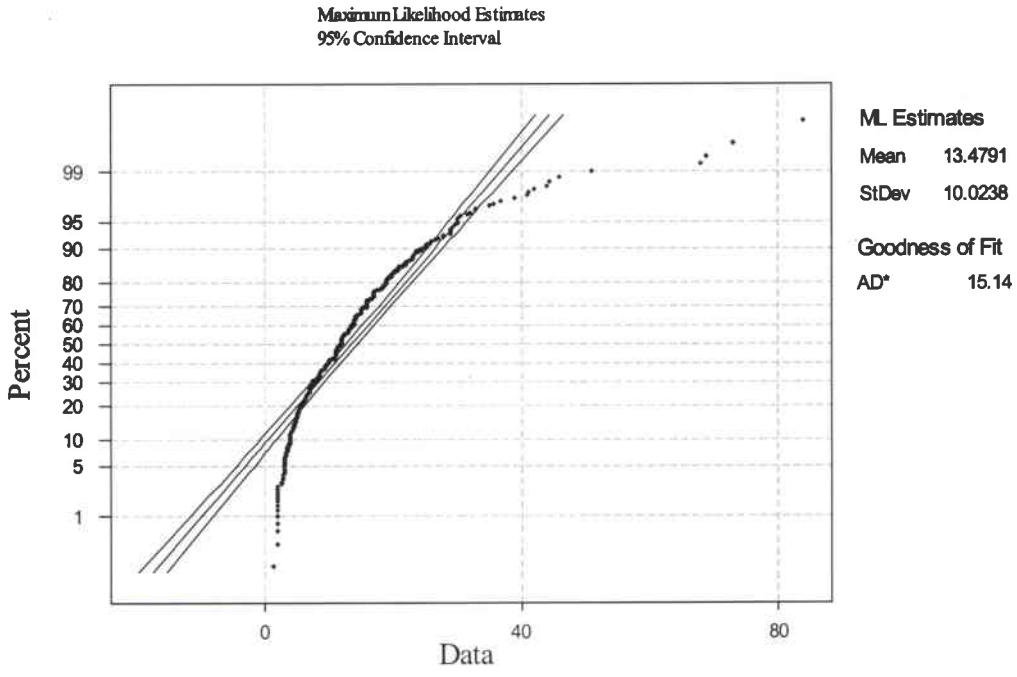
Variable:
Mercury Concentration, ng/L

Anderson-Darling Normality Test	
A-Squared:	15.064
P-Value:	0.000
Mean	13.4791
StDev	10.0346
Variance	100.693
Skewness	2.54042
Kurtosis	11.3088
N	465
Minimum	1.2000
1st Quartile	6.6500
Median	11.9000
3rd Quartile	17.0000
Maximum	84.0000
95% Confidence Interval for Mu	
12.5646	14.3935
95% Confidence Interval for Sigma	
9.4284	10.7247
95% Confidence Interval for Median	
11.0000	12.3000

The histogram and projected normal curve in Figure 4, above, indicate that concentration data in original units (ng/L) are not normally distributed, which is confirmed by the Anderson-Darling statistic (A-Squared) and the p-value. The Anderson-Darling statistic should generally be less than 1.035 for a normal distribution. The p-value indicates the probability that the data are normally distributed – if the p-value is less than 0.05, then the data cannot be assumed to be normal. The Anderson-Darling statistic is 15.064 and the p-value is estimated as 0.000, which are strong indications that the data in original units are not normally distributed The non-normality of the data was confirmed by inspecting a probability plot of the original pooled data set, as shown in Figure 5, below.

MiniTab™ allows the user to select either the Most Likely Estimate (MLE) or the Least Squares method when calculating the coordinates used to project a probability line. The Most Likely Estimate (MLE) method was selected as being appropriate for this data set.

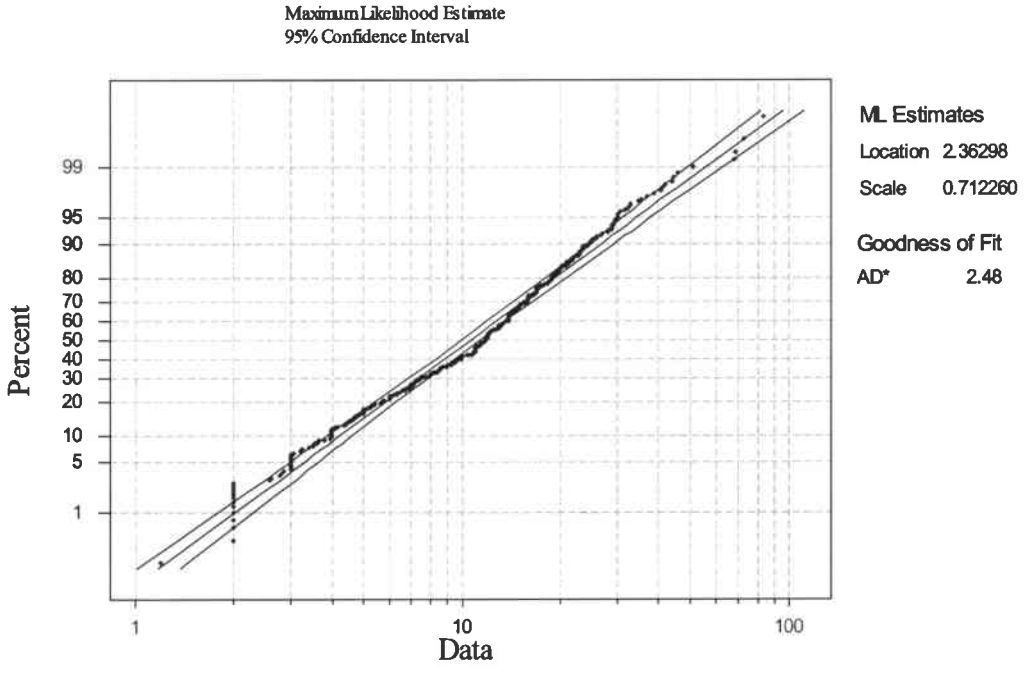
Figure 5. Preliminary probability plot of all data, in original units.



As noted above, an Anderson-Darling statistic above 1.035 strongly indicates that the data are not normally distributed. The Anderson-Darling statistic for the probability plot of the untransformed data is 15.14, a strong indication that the untransformed data are not normally distributed. This is further confirmed visually by the shape of the probability plot, which closely resembles a natural-logarithmic (ln) curve.

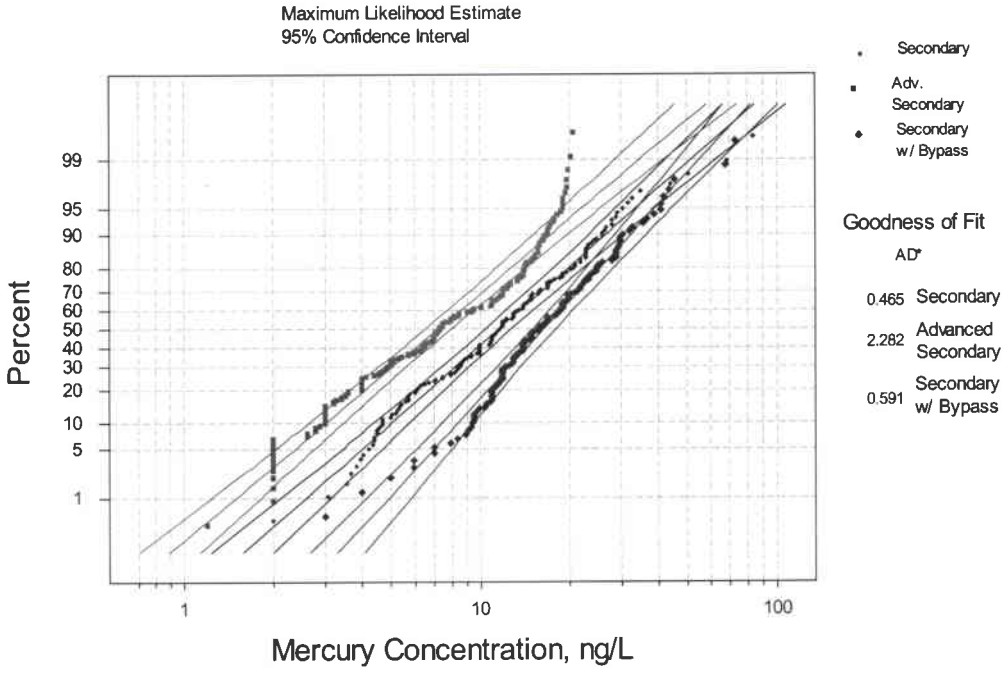
Next, a probability plot of the ln-transformed data (ln-normal probability plot) was produced. This plot is depicted in Figure 6, below. It is much more linear than the probability plot in original units, but the Anderson-Darling statistic is still too high – 2.48 vs. 1.035 – to accept the hypothesis that the ln-transformed data are normally distributed (ln-normal).

Figure 6. Ln-normal probability plot of all preliminary data.



Next, ln-normal probability plots were developed for the data grouped by treatment types as described above as shown in Figure 7, below.

Figure 7. Ln- normal probability plots of mercury concentrations, grouped by treatment type.



The ln-normal probability plots for mercury concentration data grouped by type of treatment appear more linear. The Anderson-Darling statistics for the individual ln-normal probability plots for secondary treatment and secondary treatment with bypass are both well below 1.0385, which indicates that the data are probably ln-normally distributed within each of those groups. The Anderson-Darling statistic for the ln-normal probability plot of the advanced secondary treatment group is still too high to accept the hypothesis that those data are ln-normally distributed. This is confirmed by the shape of the ln-transformed probability plot for that group of data.

Data Reevaluation and Refinement

Based on the preliminary statistical analysis, staff re-evaluated and refined the original classifications. The initial data set was more closely examined to investigate similarities and anomalies suggested by the probability plots of data grouped by type of treatment, and to simplify any proposed effluent limits based on the outcome of the final statistical analysis. The following conclusions were reached:

1. Secondary treatment and secondary treatment with occasional wet weather bypass could be combined. The similarity of their respective ln-transformed probability plots suggested the possibility of simplifying the analysis and IPBL development by recombining the two data subsets. In staff's judgment, this is appropriate because

bypasses only occur intermittently, during wet weather, and are limited in number and duration. This assumption is supported by the final statistical analysis, below.

2. One advanced secondary treatment plant was provisionally removed from the data set because the data from this plant were not similar to either secondary or advanced secondary treatment (see Figure 3, above). Regional Board staff will work with this discharger to determine what is causing this dissimilarity. That plant's mercury concentration data were removed from the data set and were not further considered in this analysis.

3. Another plant operates with filtration during dry weather and without filtration during wet weather months, per its NPDES permit. This plant's mercury concentrations were similar to advanced secondary treatment plants' concentrations when the filtration was being operated, and were similar to the secondary treatment plants' mercury concentrations when the filtration is not operated (see Figure 3, above). Accordingly, this plant's data were split between the secondary and advanced secondary classifications depending on the mode of operation, as determined by comparing the date of the sample to the NPDES permit conditions.

4. Data from one secondary treatment plant that employs large holding ponds were similar to data from advanced secondary treatment plants, and the plant's data were included in the advanced secondary treatment classification.

The final verified and corrected data set contains 398 records, with 8 mercury concentrations reported as nondetected (ND). The ND's represent approximately 2 percent of the preliminary pooled data set, which was not a significant percentage. Therefore, no measures were taken to estimate probable value distributions for the ND concentration data. The final pooled data set is reproduced in Appendix B.

Final Statistical Analysis

The final data set was analyzed again using the MiniTab™ functions described above. First, staff plotted the final data set as boxplots arranged by discharger and grouped by type of treatment, as presented in Figures 8 and 9, below. The histogram of the final pooled concentration data was developed, as shown in Figure 10, below. This histogram is very similar to the histogram for the preliminary pooled data, and indicates that the overall combined data still appear to be ln-normally distributed.

Ln-normal probability plots were developed for the two data subsets: secondary treatment and advanced secondary treatment, as shown in Figure 11, below. The Anderson-Darling goodness of fit statistic for each probability plot is well within the range expected for an ln-normal distribution.

Final Statistical Analysis – Graphical Results

Figure 8. Boxplots of secondary treatment plants in final pooled data set, by discharger.

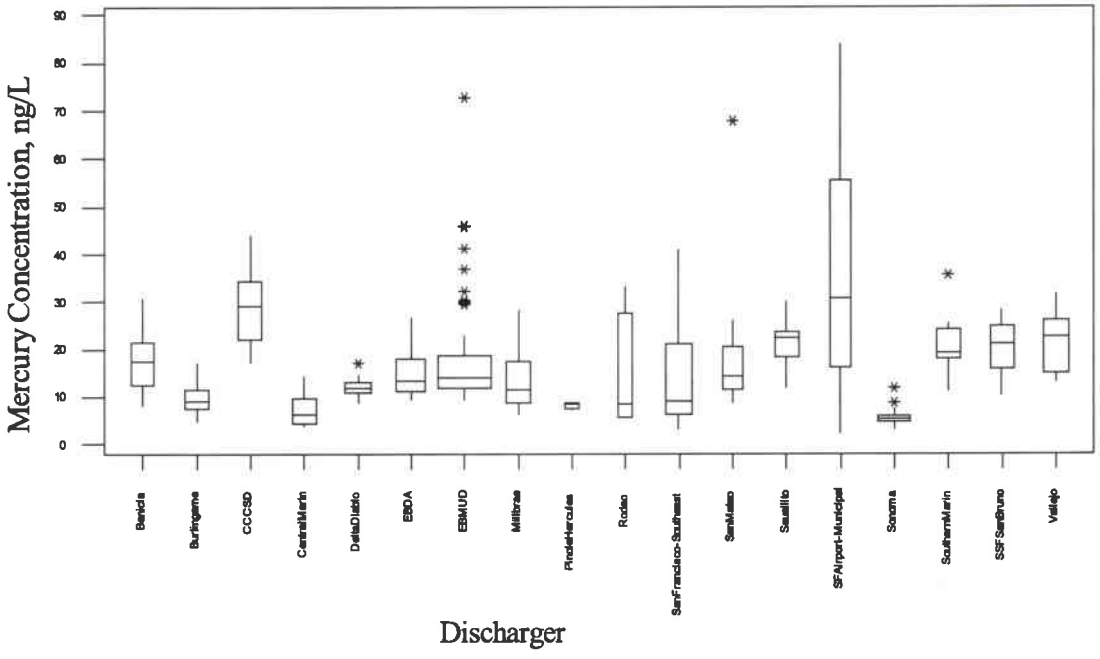


Figure 9. Boxplots of advanced secondary treatment plants in final pooled data set, by discharger.

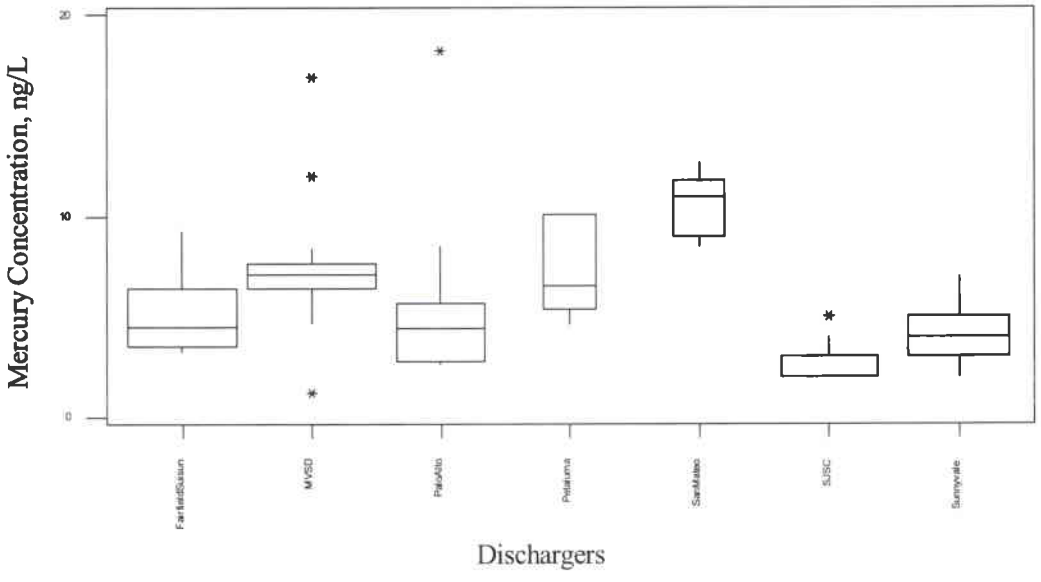


Figure 10. Histogram of final data set, all data.

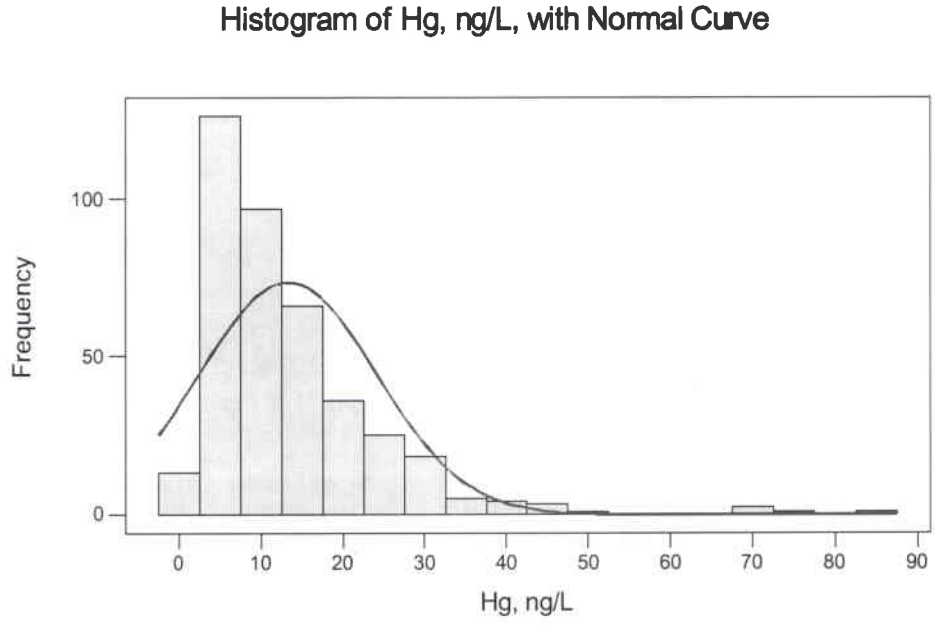
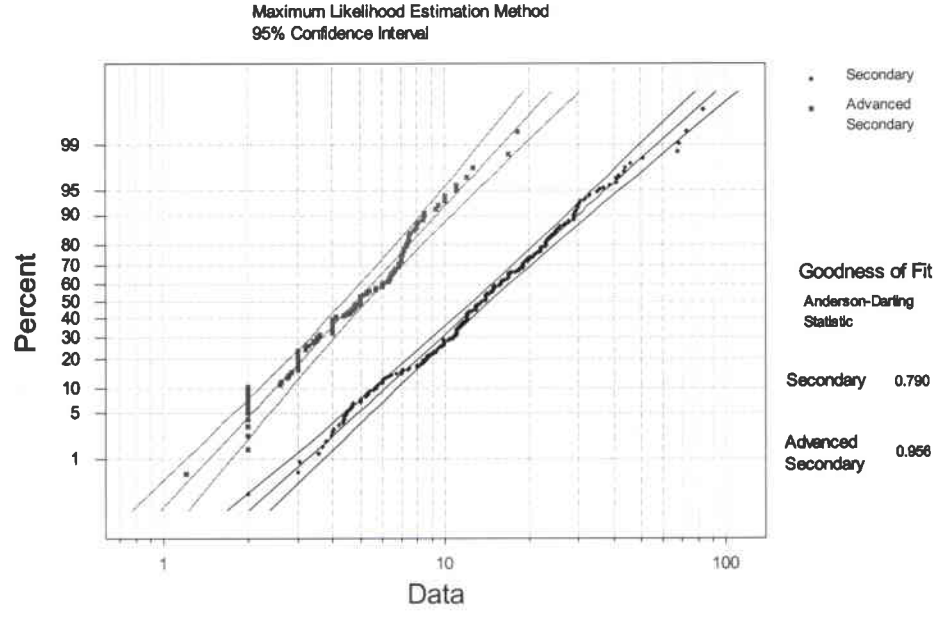


Figure 11. Ln-plotted probability plots of final data, by treatment type.



Applicability of Data Subgroups

As a final check on the suitability of the division of the final data set into two subgroups based on treatment technology, staff used MiniTab™ to run Mood's Median Test on the two subgroup data sets. The results were $\chi^2 = 123.56$, p=0.000, with the medians for secondary and advanced secondary being 13.7 and 5.0, respectively. The χ^2 and p-values indicate that there is sufficient evidence to reject the hypothesis that the two data subsets are similar, as confirmed by the difference in their medians. This confirmed that it was valid to divide the two subgroups by treatment type, and therefore it is appropriate to base the IBPLs on this division.

Percentiles

MiniTab™ computes percentile tables for probability plots it produces. The percentile tables include the percent, the estimated data value (percentile) in original units, and a lower and upper 95 percent confidence limit for each estimated percentile, also in original units. The percentiles and confidence intervals are estimated for the entire population, based on the sample represented by the data set. The assumptions behind this extrapolation are valid as long as the data are a good fit to the distribution chosen for the probability plot. As discussed above, the data, grouped by treatment, appear to be a good fit for an ln-normal distribution.

Confidence intervals of ln-transformed data can be re-exponentiated to produce similar intervals in original units. The re-exponentiated confidence intervals are called *tolerance intervals* to distinguish them from confidence intervals calculated in original units. Therefore, the percentile estimates in Tables 2 and 3, below, include lower and upper 95 percent tolerance limits.

In addition to the standard percentiles, MiniTab™ permits the user to specify additional percentiles for explicit estimation. Staff added the 99.87^{th} percentile for estimation in this analysis, due to its history as a regulatory control point (see Discussion, below).

Precision and Significant Figures

The tables of percentiles for the final data analysis are reproduced as Tables 2 and 3, below. The values in Tables 2 and 3 contain more decimal places (to the 0.0001 ng/L) than would be supported by the original data. This would represent false precision were these results used in the proposed interim limits, since most dischargers report ultraclean mercury data to the nearest nanogram per liter. Therefore, 99.87^{th} percentile values from the tables were rounded to the nearest whole nanogram per liter.

Table 2. Percentiles for secondary treatment.

Percent	Percentile, ng/L	Lower 95% Tolerance Limit, ng/L	Upper 95% Tolerance Limit, ng/L
0.10	2.0104	1.6919	2.389
1.00	3.2238	2.8078	3.701
2.00	3.8156	3.3620	4.330
3.00	4.2462	3.7682	4.785
4.00	4.6018	4.1051	5.159
5.00	4.9130	4.4008	5.485
6.00	5.1944	4.6688	5.779
7.00	5.4543	4.9168	6.051
8.00	5.6980	5.1497	6.305
9.00	5.9292	5.3708	6.546
10.00	6.1502	5.5824	6.776
20.00	8.0725	7.4257	8.776
30.00	9.8216	9.0978	10.603
40.00	11.6133	10.7966	12.492
50.00	13.5825	12.6417	14.593
60.00	15.8855	14.7684	17.087
70.00	18.7835	17.3993	20.278
80.00	22.8532	21.0220	24.844
90.00	29.9962	27.2270	33.047
91.00	31.1144	28.1844	34.349
92.00	32.3765	29.2610	35.824
93.00	33.8235	30.4905	37.521
94.00	35.5160	31.9226	39.514
95.00	37.5500	33.6354	41.920
96.00	40.0890	35.7619	44.940
97.00	43.4469	38.5559	48.958
98.00	48.3500	42.6024	54.873
99.00	57.2252	49.8401	65.704
99.87	87.4044	73.8246	103.482
99.90	91.7666	77.2284	109.042

Table 3. Percentiles for advanced secondary treatment.

Percent	Percentile, ng/L	Lower 95% Tolerance Limit, ng/L	Upper 95% Tolerance Limit, ng/L
0.10	0.9752	0.7755	1.2264
1.00	1.4477	1.2049	1.7395
2.00	1.6669	1.4089	1.9722
3.00	1.8229	1.5554	2.1364
4.00	1.9498	1.6753	2.2693
5.00	2.0595	1.7793	2.3839
6.00	2.1577	1.8726	2.4863
7.00	2.2477	1.9583	2.5799
8.00	2.3314	2.0382	2.6669
9.00	2.4103	2.1135	2.7488
10.00	2.4852	2.1851	2.8266
20.00	3.1202	2.7925	3.4864
30.00	3.6765	3.3210	4.0701
40.00	4.2298	3.8393	4.6601
50.00	4.8220	4.3834	5.3045
60.00	5.4971	4.9896	6.0563
70.00	6.3244	5.7128	7.0015
80.00	7.4520	6.6693	8.3266
90.00	9.3560	8.2262	10.6409
91.00	9.6469	8.4590	11.0016
92.00	9.9732	8.7188	11.4082
93.00	10.3448	9.0129	11.8735
94.00	10.7761	9.3522	12.4168
95.00	11.2900	9.7537	13.0683
96.00	11.9252	10.2462	13.8795
97.00	12.7553	10.8838	14.9487
98.00	13.9489	11.7901	16.5031
99.00	16.0610	13.3673	19.2974
99.87	22.8908	18.2907	28.6477
99.90	23.8427	18.9597	29.9832

Proposed Interim Mercury Effluent Limitations

Based on the statistical analysis of pooled low-detection-limit mercury data for the representative dischargers selected, the following are proposed as interim regionwide mercury effluent limits, taken as monthly averages, for municipal dischargers:

Table 4. Proposed interim performance-based mercury effluent limits.

Type of Treatment	Proposed Interim Mercury Limit, ng/L
Secondary Treatment	87
Advanced secondary Treatment	23
Mixed-regime	87 when operated as secondary 23 when operated as advanced secondary
Secondary with holding ponds	23

Discussion

Validity of Approach

As noted in the Introduction, above, an IPBL is typically discharger specific, utilizes the last three years data, and is based on enough data points to produce a reasonable statistical estimate of current performance. For the reasons outlined in the Introduction, that was not feasible for the ultraclean mercury data generally available for individual POTW's in the Region. The approach outlined in this report appears to be valid for the following reasons:

- Final data subsets appear to be well represented by ln-normal distributions, as shown by the Anderson-Darling goodness of fit statistics in the final statistical analysis.

- Division of the data into subsets by type of treatment appears appropriate, again based on the Anderson-Darling goodness of fit statistics for the two projected probability lines (each subset provides an approximately homogeneous, ln-normally distributed group), and as indicated by the results of the Mood's Median test applied to the two subsets (the two sets are statistically dissimilar).

- The IPBLs are proposed as limits not to be exceeded, based on the 99.87^{th} percentile of actual performance data for each subgroup, which is a standard approach for setting effluent limitations, and is more conservative than the once-every-three-years (approximately 99.91^{st} percentile) frequency suggested by U.S. EPA.

Using pooled data is valid because:

- Only about one year's ultraclean data were available for this statistical analysis, and each discharger's individual data set was too small for reliable statistical analysis.

- one year of ultraclean data from a cross section of different plants with similar processes, with 285 data points for secondary treatment and 113 for advanced secondary treatment is representative of plants' performance in each category.

- pooling the data reduces the likelihood of penalizing plants that have implemented effective control measures and are already performing well as compared to other plants that may not have implemented similar measures (see Protection of Water Quality, below).

- pooling the data results in a more consistent set of interim mercury effluent limits that can be applied uniformly regionwide.

- pre-2000 performance data included a high percentage of non-detects (ND's), and the effluent limits based on those data were typically 210 nanograms per liter, rather than the lower limits proposed in this report.

Percentiles and Regulatory Control Points

The proposed interim performance based effluent limits are based on the 99.87th percentile of the respective data groupings. The 99.87th percentile has historically been used in environmental regulation as an upper limit, as it represents a number that should not be exceeded more than once per 769 samples:

$$Likelihood\ \ of\ of\ exceedence\ = (1-.9987)=\left(\frac{1}{769}\right).$$

This number is more conservative than the number given in U.S. EPA guidance that effluent limitations will be protective as long as they are not exceeded more than once every three years, which corresponds to approximately the 99.91th percentile, based on

$$Likelihood\ of\ exceedence=\left(\frac{1}{3*365}\right)=\left(\frac{1}{1095}\right)\approx(1-.9991)$$

Since MiniTab™ estimates percentiles for the entire population, rather than the observed sample, the 99.87th percentile numbers may be greater than the observed data. This is an acceptable regulatory control point because the percentiles (including the 99.87th percentile) and the underlying data distribution from which they are calculated are both products of the underlying treatment technology. Although other data distribution shapes could be imagined that would have similar 99.87th percentile values, the shape of this data distribution should not change as long as treatment processes do not change. Should operational performance degrade, the data distribution would be expected to shift upward, taking the 99.87th percentile of the data up with it. This would produce more frequent violations of the interim effluent limit.

Regulatory controls are sometimes based on other percentiles than the 99.87th; in those cases, the regulatory language envisions a certain number of exceedences. It could be argued that some lower IPBL, perhaps based on a 12-month moving median, or some other, lower percentile should be used instead. The moving median approach would be

valid if applied to individual POTW's, and is premature at this point due to the lack of individual data points. Lower-percentile control points would require additional statistical evaluations by case handlers (and discharger staff) to evaluate compliance by determining the number of exceedences per number of sampling events (2 out of 10 for 80^{th} percentile, for example). Automating this compliance tracking would require reprogramming the ERS to monitor numbers of exceedences for a particular number of sampling events. It is more straightforward to monitor compliance with upper limit controls – the proposed IPBLs are easily interpreted from a compliance perspective and place no additional load on staff or the ERS.

Other possible data groupings

This statistical analysis is based on data groupings by treatment type, subject to the simplifications discussed in the Data Refinement and Reevaluation section, above. Although data groupings by other variables are possible, the data to investigate them are not currently available. This statistical analysis indicates that grouping by treatment type is adequate and appropriate at this time. Other data groupings may be investigated in the future if the data become available.

Performance Reevaluation

The preliminary statistical analysis indicated one treatment plant had mercury concentration data significantly different from plants in either treatment category (see Data Reevaluation and Refinement section, above). This plant recently had its NPDES permit renewed, prior to this statistical analysis, and its NPDES permit includes an IPBL for mercury. Regional Board staff will work with that discharger to identify the cause(s) of this difference, and will determine if its NPDES permit should be reopened to change the mercury IPBL.

Protection of Water Quality

This statistical approach has resulted in IPBLs that are significantly lower than the previous limits – 87 or 23 nanograms per liter versus 210 nanograms per liter for most deepwater discharges – and are still representative of overall plant performance regionwide. It is reasonable to expect that this will result in maintaining the current performance by the POTWs in each of the two groups until the mercury TMDL and its waste load allocations are developed.

Many POTWs have implemented sophisticated pollution prevention measures for mercury (collecting mercury thermometers, collecting fluorescent lamp tubes, and working with medical/dental facilities to insure mercury containing wastes are not discharged to collection systems). However, to date, not all POTWs have implemented these programs since mercury was not a compliance issue in the past. Continued implementation of existing and/or additional mercury pollution prevention measures will be the prerequisite to have an IPBL in lieu of final limit in the permit. The Regional Board staff expects NPDES permits to be one mechanism to ensure all POTW's to implement baseline pollution prevention programs. This is reflected in the positions of

the Bay Area Clean Water Agencies and the Bay Area Pollution Prevention Group. POTW groups have also sponsored SB 633 (Sher), The California Mercury Reduction Act of 2001, which will remove additional sources from the environment. Taken together, all these measures will ensure that current performance of POTW's in the Region is maintained or improved in the interim until the TMDL is developed.

Summary

This statistical analysis provided the following answers to the questions stated in the Introduction, above

- *Is pooling the ultraclean data from various municipal dischargers statistically valid?*

  Pooled data, divided into appropriate subgroups (see next bulleted item) is statistically valid.

- *Should the data be divided into subgroups and, if so, based on which factors?*

  Dividing data into subgroups based on treatment technology produced statistically acceptable results, based on goodness-of-fit tests applied to projected probability plots of the subgrouped data.

- *Can statistical analysis of pooled data guide development of regionwide interim performance-based effluent limits (IPBLs) for mercury from municipal dischargers?*

  The goodness-of-fit statistics for the last round of ln-plotted probability plots indicate that the whole-population percentile estimates calculated for those plots can be used to as the basis for regulatory control points (limits).

- *Would establishing regionwide IPBLs hold all POTWs at current performance and be protective?*

  Explicit mass calculations are outside the scope of this statistical analysis. However, as discussed in the Protection of Water Quality section above, consistently controlling for any percentile from a data distribution will control the entire data distribution. Thus, compliance with the IPBLs proposed in this report would hold POTWs at current performance. To the extent that the IPBLs motivate less-well-performing plants to implement pollution prevention measures and source controls, they should result in improved performance from those plants. Total annual loading can be estimated in future years to see if this holds true. Considering the relatively small contribution of mercury loads from the POTWs to overall mercury loading to the Bay, it is unlikely that TMDL/WLA would require additional load reduction beyond the pollution prevention and source controls that are required by permits.

References Considered In Conducting This Analysis

1. California Regional Water Quality Control Board, San Francisco Bay Region *San Francisco Bay Basin (Region 2). Water Quality Control Plan.* 1995 and subsequent amendments.

2. California Regional Water Quality Control Board, San Francisco Bay Region, *Watershed Management of Mercury in the San Francisco Bay Estuary: A Total Maximum Daily Load Report to U.S. EPA.* April 1, 2000.

3. Helsel, D.R., and Hirsch, R.M. *Statistical Methods in Water Resources.* 2000.

4. Krebs, C.J. *Ecological Methodology.* 2000.

5. MiniTab Corporation. MiniTab™ Release 13.30 online documentation, 2001.

6. MiniTab Corporation, MiniTab™ Release 13.30, personal communication with MiniTab support technician, May 21, 2001.

Appendix A: Preliminary Verified Data Set

Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
Benicia	2	Solano	1/10/00	2.7	30.6
Benicia	2	Solano	2/16/00	4.51	17.4
Benicia	2	Solano	4/4/00	3.29	15
Benicia	2	Solano	5/18/00	3.01	12
Benicia	2	Solano	6/13/00	3.26	17
Benicia	2	Solano	7/12/00	2.82	23
Benicia	2	Solano	8/8/00	2.64	19
Benicia	2	Solano	9/28/00	2.48	22
Benicia	2	Solano	10/18/00	2.76	19
Benicia	2	Solano	11/15/00	2.76	13
Benicia	2	Solano	12/14/00	3.42	11
Benicia	2	Solano	1/25/01	3.55	8
Burlingame	2	San Mateo	1/6/00	3.518	7.48
Burlingame	2	San Mateo	2/2/00	4.413	7.1
Burlingame	2	San Mateo	3/1/00	5.733	8.56
Burlingame	2	San Mateo	4/17/00	4.599	11.3
Burlingame	2	San Mateo	5/5/00	3.758	13.3
Burlingame	2	San Mateo	7/21/00	3.843	17
Burlingame	2	San Mateo	8/8/00	3.499	4.49
Burlingame	2	San Mateo	9/13/00	3.607	11.4
Burlingame	2	San Mateo	10/4/00	4.254	8.27
Burlingame	2	San Mateo	11/6/00	4.005	6.2
Burlingame	2	San Mateo	12/5/00	4.062	10
Burlingame	2	San Mateo	1/6/01	3.79	9.3
CCCSD	2B	Contra Costa	1/5/00	39.7	19
CCCSD	2B	Contra Costa	2/3/00	46.9	ND
CCCSD	2B	Contra Costa	3/2/00	64.9	25
CCCSD	2B	Contra Costa	4/5/00	47.6	17
CCCSD	2B	Contra Costa	5/4/00	43.8	22
CCCSD	2B	Contra Costa	6/12/00	41.3	28
CCCSD	2B	Contra Costa	7/7/00	40.8	29
CCCSD	2B	Contra Costa	8/3/00	41.1	29
CCCSD	2B	Contra Costa	9/7/00	40	29
CCCSD	2B	Contra Costa	10/4/00	39.4	39
CCCSD	2B	Contra Costa	11/3/00	41.2	42
CCCSD	2B	Contra Costa	12/6/00	39.7	22
CCCSD	2B	Contra Costa	1/23/01	41.5	44
CCCSD	2B	Contra Costa	2/8/01	40.2	30
CentralMarin	2	Marin	2/2/00	13.6	6.71
CentralMarin	2	Marin	3/8/00	23.5	14.1
CentralMarin	2	Marin	4/5/00	9.3	9.71
CentralMarin	2	Marin	5/3/00	8.7	8.34
CentralMarin	2	Marin	6/7/00	8.4	6.04
CentralMarin	2	Marin	7/6/00	8.3	4.47
CentralMarin	2	Marin	8/2/00	8.1	3.8
CentralMarin	2	Marin	9/6/00	7.9	4.2
CentralMarin	2	Marin	10/4/00	7.8	3.65
CentralMarin	2	Marin	11/8/00	8.2	12.2
CentralMarin	2	Marin	12/6/00	8.3	9.31
CentralMarin	2	Marin	1/3/01	8.4	5.6
CentralMarin	2	Marin	2/7/01	9.5	5
DeltaDiablo	2	Contra Costa	1/4/00	13.15	10
DeltaDiablo	2	Contra Costa	6/6/00	13.9	8.6

Appendix A: Preliminary Verified Data Set

Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
DeltaDiablo	2	Contra Costa	6/19/00	13.09	11.6
DeltaDiablo	2	Contra Costa	8/1/00	14.12	12
DeltaDiablo	2	Contra Costa	9/13/00	13.8	ND
DeltaDiablo	2	Contra Costa	9/17/00	13.4	8.66
DeltaDiablo	2	Contra Costa	9/20/00	13.9	10.8
DeltaDiablo	2	Contra Costa	10/4/00	14.4	11
DeltaDiablo	2	Contra Costa	11/1/00	14.3	12.3
DeltaDiablo	2	Contra Costa	11/15/00	13.1	10.7
DeltaDiablo	2	Contra Costa	12/5/00	13.7	14.5
DeltaDiablo	2	Contra Costa	12/19/00	14.4	11
DeltaDiablo	2	Contra Costa	1/3/01	14.3	13
DeltaDiablo	2	Contra Costa	1/16/01	12.4	13
DeltaDiablo	2	Contra Costa	2/5/01	13.3	14
DeltaDiablo	2	Contra Costa	2/20/01	13.6	17
EBDA	2	Alameda	1/5/00	74.31	19.8
EBDA	2	Alameda	1/19/00	79.08	26.7
EBDA	2	Alameda	2/2/00	83.56	18.7
EBDA	2	Alameda	2/16/00	98.52	15
EBDA	2	Alameda	3/1/00	95.89	ND
EBDA	2	Alameda	3/15/00	89.81	9.1
EBDA	2	Alameda	4/5/00	73.18	18
EBDA	2	Alameda	4/19/00	78.46	10
EBDA	2	Alameda	5/3/00	70.57	14
EBDA	2	Alameda	5/17/00	75.51	10
EBDA	2	Alameda	6/7/00	70.96	12
EBDA	2	Alameda	6/21/00	74.65	11
EBDA	2	Alameda	7/5/00	66.54	10
EBDA	2	Alameda	7/19/00	71.89	13.2
EBDA	2	Alameda	8/2/00	73.43	15.8
EBDA	2	Alameda	8/16/00	68.68	11.2
EBDA	2	Alameda	9/5/00	70.52	11.4
EBDA	2	Alameda	10/4/00	70.32	13.6
EBDA	2	Alameda	11/1/00	85.87	11.8
EBDA	2	Alameda	12/6/00	74.3	21
EBMUD	2B	Alameda	12/8/99	68.4	13.2
EBMUD	2B	Alameda	12/21/99	63.7	13.7
EBMUD	2B	Alameda	12/28/99	64.5	18
EBMUD	2B	Alameda	1/9/00	63.2	14.2
EBMUD	2B	Alameda	1/13/00	66.6	18.4
EBMUD	2B	Alameda	1/19/00	80.9	16.9
EBMUD	2B	Alameda	1/26/00	95.1	36.9
EBMUD	2B	Alameda	2/4/00	78.1	11.5
EBMUD	2B	Alameda	2/10/00	114.6	11.6
EBMUD	2B	Alameda	2/15/00	144.3	73
EBMUD	2B	Alameda	2/24/00	130.5	41.2
EBMUD	2B	Alameda	3/5/00	151.1	30.4
EBMUD	2B	Alameda	3/9/00	148.9	32.1
EBMUD	2B	Alameda	3/15/00	81.3	12.2
EBMUD	2B	Alameda	3/19/00	79.1	11
EBMUD	2B	Alameda	3/29/00	72.1	19.9
EBMUD	2B	Alameda	4/5/00	72	29.6
EBMUD	2B	Alameda	4/12/00	82	19.2
EBMUD	2B	Alameda	4/20/00	72	22.7
EBMUD	2B	Alameda	4/27/00	70	14.2
EBMUD	2B	Alameda	5/4/00	66	9.8
EBMUD	2B	Alameda	5/10/00	76	12.6
EBMUD	2B	Alameda	5/14/00	72	14.1
EBMUD	2B	Alameda	5/24/00	69	21.6

Appendix A: Preliminary Verified Data Set

Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
EBMUD	2B	Alameda	6/1/00	70	9.6
EBMUD	2B	Alameda	6/8/00	70	12.1
EBMUD	2B	Alameda	6/11/00	69	11.2
EBMUD	2B	Alameda	6/21/00	68	29.4
EBMUD	2B	Alameda	6/27/00	69	9.4
EBMUD	2B	Alameda	7/6/00	69	15.8
EBMUD	2B	Alameda	7/12/00	69	14
EBMUD	2B	Alameda	7/20/00	67	9.35
EBMUD	2B	Alameda	7/26/00	71	16.4
EBMUD	2B	Alameda	8/3/00	68	9.16
EBMUD	2B	Alameda	8/9/00	72	9.54
EBMUD	2B	Alameda	8/13/00	64	13.5
EBMUD	2B	Alameda	8/23/00	67	11.9
EBMUD	2B	Alameda	8/24/00	68	10.8
EBMUD	2B	Alameda	8/29/00	68	12.9
EBMUD	2B	Alameda	9/6/00	63	20.3
EBMUD	2B	Alameda	9/13/00	67	10.4
EBMUD	2B	Alameda	9/20/00	65	9.55
EBMUD	2B	Alameda	9/24/00	66	11
EBMUD	2B	Alameda	10/5/00	64	18.3
EBMUD	2B	Alameda	10/15/00	68	14.8
EBMUD	2B	Alameda	10/19/00	65	18.5
EBMUD	2B	Alameda	10/24/00	64	12
EBMUD	2B	Alameda	11/2/00	69	12
EBMUD	2B	Alameda	11/7/00	66	11
EBMUD	2B	Alameda	11/17/00	68	13
EBMUD	2B	Alameda	11/19/00	70	12
EBMUD	2B	Alameda	11/29/00	81	16
EBMUD	2B	Alameda	12/6/00	69	15
EBMUD	2B	Alameda	12/13/00	82	12
EBMUD	2B	Alameda	12/19/00	67	13
EBMUD	2B	Alameda	12/28/00	69	11
EBMUD	2B	Alameda	1/4/01	66	30
EBMUD	2B	Alameda	1/9/01	72	13
EBMUD	2B	Alameda	1/18/01	71	10
EBMUD	2B	Alameda	1/24/01	75	14
EBMUD	2B	Alameda	1/28/01	75	12
EBMUD	2B	Alameda	2/4/01	72	15
EBMUD	2B	Alameda	2/15/01	83	16
EBMUD	2B	Alameda	2/23/01	134	46
EBMUD	2B	Alameda	2/28/01	85	16
FairfieldSuisun	2A	Solano	2/9/00	16.395	6.91
FairfieldSuisun	2A	Solano	2/17/00	29.996	6.35
FairfieldSuisun	2A	Solano	3/8/00	24.595	3.25
FairfieldSuisun	2A	Solano	3/15/00	18.057	4.54
FairfieldSuisun	2A	Solano	4/4/00	16.172	6.6
FairfieldSuisun	2A	Solano	4/11/00	17.167	5.4
FairfieldSuisun	2A	Solano	5/11/00	16.426	3.6
FairfieldSuisun	2A	Solano	5/16/00	15.694	3.4
FairfieldSuisun	2A	Solano	6/14/00	13.633	3.6
FairfieldSuisun	2A	Solano	6/21/00	16.735	9.3
FairfieldSuisun	2A	Solano	7/5/00	12.71	3.5
FairfieldSuisun	2A	Solano	7/13/00	16.335	4.1
FairfieldSuisun	2A	Solano	8/3/00	12.804	5.3
FairfieldSuisun	2A	Solano	8/9/00	14.225	6.3
FairfieldSuisun	2A	Solano	9/6/00	13.072	3.2
FairfieldSuisun	2A	Solano	9/14/00	13.455	6.7
FairfieldSuisun	2A	Solano	11/9/00	10.425	3.4

Appendix A: Preliminary Verified Data Set

Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
FairfieldSuisun	2A	Solano	11/15/00	16.204	3.5
FairfieldSuisun	2A	Solano	12/9/00	13.936	4.4
FairfieldSuisun	2A	Solano	12/14/00	16.061	3.2
FairfieldSuisun	2A	Solano	1/3/01	14.698	4.8
FairfieldSuisun	2A	Solano	1/10/01	15.626	6.9
Millbrae	2	San Mateo	1/5/00	1.71	20.4
Millbrae	2	San Mateo	2/2/00	2.02	23.2
Millbrae	2	San Mateo	3/8/00	3.52	6.1
Millbrae	2	San Mateo	4/5/00	1.86	14.2
Millbrae	2	San Mateo	5/3/00	1.82	16.1
Millbrae	2	San Mateo	6/7/00	1.88	15.1
Millbrae	2	San Mateo	7/12/00	1.74	10
Millbrae	2	San Mateo	8/2/00	1.76	11
Millbrae	2	San Mateo	9/13/00	1.79	8.9
Millbrae	2	San Mateo	10/11/00	1.76	12
Millbrae	2	San Mateo	11/14/00	1.66	8.4
Millbrae	2	San Mateo	12/13/00	1.79	6.3
Millbrae	2	San Mateo	1/17/01	1.77	8.8
Millbrae	2	San Mateo	2/21/01	3.43	28
MVSD	2A	Contra Costa	2/9/00	1.854	8
MVSD	2A	Contra Costa	8/2/00	1.769	4.7
MVSD	2A	Contra Costa	8/9/00	1.778	5.3
MVSD	2A	Contra Costa	8/16/00	1.736	4.9
MVSD	2A	Contra Costa	8/22/00	1.738	1.2
MVSD	2A	Contra Costa	9/13/00	1.747	8.4
MVSD	2A	Contra Costa	10/4/00	1.674	6.4
MVSD	2A	Contra Costa	10/11/00	1.693	6.4
MVSD	2A	Contra Costa	10/18/00	1.75	7.4
MVSD	2A	Contra Costa	10/23/00	1.723	7.5
MVSD	2A	Contra Costa	11/2/00	1.732	17
MVSD	2A	Contra Costa	11/9/00	1.781	12
MVSD	2A	Contra Costa	11/17/00	1.824	8
MVSD	2A	Contra Costa	11/30/00	1.838	7
MVSD	2A	Contra Costa	12/4/00	1.731	8.1
MVSD	2A	Contra Costa	12/6/00	1.738	7
MVSD	2A	Contra Costa	12/11/00	1.811	7.3
MVSD	2A	Contra Costa	12/12/00	1.762	6.5
MVSD	2A	Contra Costa	12/18/00	1.822	7.6
MVSD	2A	Contra Costa	12/19/00	1.756	6.9
MVSD	2A	Contra Costa	12/27/00	1.777	7.5
MVSD	2A	Contra Costa	12/28/00	1.774	7.2
MVSD	2A	Contra Costa	1/2/01	1.776	7.3
MVSD	2A	Contra Costa	1/3/01	1.79	7.8
MVSD	2A	Contra Costa	1/9/01	1.814	7.1
MVSD	2A	Contra Costa	1/10/01	2.66	7
MVSD	2A	Contra Costa	1/16/01	1.818	6.7
MVSD	2A	Contra Costa	1/17/01	1.761	7.1
MVSD	2A	Contra Costa	1/24/01	1.83	7.5
MVSD	2A	Contra Costa	1/30/01	1.779	5.7
MVSD	2A	Contra Costa	1/31/01	1.779	5.7
PaloAlto	2A	Santa Clara	1/12/00	25.94357	4
PaloAlto	2A	Santa Clara	2/9/00	27.85798	5.11
PaloAlto	2A	Santa Clara	3/8/00	39.28131	2.85
PaloAlto	2A	Santa Clara	4/12/00	28.8104	2.59
PaloAlto	2A	Santa Clara	5/10/00	27.2606	2.61
PaloAlto	2A	Santa Clara	6/7/00	20.23016	2.78
PaloAlto	2A	Santa Clara	7/12/00	26.43544	4.1
PaloAlto	2A	Santa Clara	8/9/00	26.27452	2.77

Appendix A: Preliminary Verified Data Set

Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
PaloAlto	2A	Santa Clara	9/13/00	27.38244	4.84
PaloAlto	2A	Santa Clara	10/18/00	26.37206	18.3
PaloAlto	2A	Santa Clara	11/15/00	26.51216	8.52
PaloAlto	2A	Santa Clara	12/6/00	24.23864	7.16
PaloAlto	2A	Santa Clara	1/9/01	25.69047	4.76
PaloAlto	2A	Santa Clara	2/6/01	27.86786	5.02
Petaluma	2A	Sonoma	1/1/00	0	6.54
Petaluma	2A	Sonoma	2/1/00	6.37	10.1
Petaluma	2A	Sonoma	3/1/00	8.557	10.1
Petaluma	2A	Sonoma	11/17/00	5.24	4.6
Petaluma	2A	Sonoma	1/12/01	8.75	6.1
PinoleHercules	2	Contra Costa	3/8/00	4.63	7.97
PinoleHercules	2	Contra Costa	6/7/00	2.11	8.4
PinoleHercules	2	Contra Costa	9/11/00	2.06	8.6
PinoleHercules	2	Contra Costa	12/11/00	2.52	7
Rodeo	2	Contra Costa	3/6/00	1.56	10.8
Rodeo	2	Contra Costa	6/5/00	0.86	5.4
Rodeo	2	Contra Costa	9/6/00	0.761	33
Rodeo	2	Contra Costa	12/5/00	0.702	5.7
SanFrancisco-Southeast	2B	San Francisco	9/1/00	79.2	33
SanFrancisco-Southeast	2B	San Francisco	9/3/00	60.4	29
SanFrancisco-Southeast	2B	San Francisco	9/20/00	75.9	41
SanFrancisco-Southeast	2B	San Francisco	9/28/00	64.1	25
SanFrancisco-Southeast	2B	San Francisco	11/3/00	64.2	7
SanFrancisco-Southeast	2B	San Francisco	11/9/00	66.8	17
SanFrancisco-Southeast	2B	San Francisco	11/17/00	67.9	5
SanFrancisco-Southeast	2B	San Francisco	11/21/00	97.4	11
SanFrancisco-Southeast	2B	San Francisco	12/2/00	66.9	3
SanFrancisco-Southeast	2B	San Francisco	12/16/00	68.4	4
SanFrancisco-Southeast	2B	San Francisco	12/23/00	67.5	7
SanFrancisco-Southeast	2B	San Francisco	1/7/01	62	6
SanFrancisco-Southeast	2B	San Francisco	1/14/01	62.9	9
SanFrancisco-Southeast	2B	San Francisco	1/21/01	64.2	8
SanFrancisco-Southeast	2B	San Francisco	2/5/01	64.1	6
SanFrancisco-Southeast	2B	San Francisco	2/12/01	114.1	14
SanFrancisco-Southeast	2B	San Francisco	2/26/01	84.8	15
SanMateo	2B	San Mateo	1/4/00	11.18	68
SanMateo	2B	San Mateo	2/8/00	12.95	26
SanMateo	2B	San Mateo	3/7/00	20.5	14
SanMateo	2B	San Mateo	4/2/00	14.24	15
SanMateo	2A	San Mateo	5/6/00	12.67	11
SanMateo	2A	San Mateo	6/6/00	12.22	9.5
SanMateo	2A	San Mateo	7/5/00	11.71	8.5
SanMateo	2A	San Mateo	8/7/00	11.74	11
SanMateo	2A	San Mateo	9/12/00	11.41	12.7
SanMateo	2B	San Mateo	10/3/00	11.66	8.4
SanMateo	2B	San Mateo	11/7/00	12.12	13.5
SanMateo	2B	San Mateo	12/5/00	11.76	10.5
SanMateo	2B	San Mateo	1/7/01	13.38	12
SanMateo	2B	San Mateo	2/7/01	11.76	14
Sausilito	2B	Marin	1/2/00	1.598	22.4
Sausilito	2B	Marin	2/2/00	1.369	21
Sausilito	2B	Marin	3/1/00	2.114	16.8
Sausilito	2B	Marin	4/3/00	1.305	21.5
Sausilito	2B	Marin	5/4/00	1.393	15.2
Sausilito	2B	Marin	6/5/00	1.44	25.3
Sausilito	2B	Marin	7/11/00	1.387	30
Sausilito	2B	Marin	8/3/00	1.296	11.7

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Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
Sausilito	2B	Marin	9/6/00	1.178	19.5
Sausilito	2B	Marin	10/3/00	1.286	22.1
Sausilito	2B	Marin	12/10/00	1.517	23.4
Sausilito	2B	Marin	1/1/01	1.385	23.5
Sausilito	2B	Marin	2/1/01	1.385	23.5
SBSA	2A	San Mateo	1/1/00	16.8	12.7
SBSA	2A	San Mateo	1/7/00	17.9	17.2
SBSA	2A	San Mateo	1/11/00	18.7	17.3
SBSA	2A	San Mateo	1/13/00	18.1	14.3
SBSA	2A	San Mateo	1/19/00	21	11.7
SBSA	2A	San Mateo	1/25/00	37.6	9.6
SBSA	2A	San Mateo	2/3/00	21.87	12
SBSA	2A	San Mateo	2/6/00	21.31	11.1
SBSA	2A	San Mateo	2/12/00	33.46	14.4
SBSA	2A	San Mateo	2/18/00	24.26	14
SBSA	2A	San Mateo	2/25/00	26.39	14
SBSA	2A	San Mateo	3/1/00	26.92	14.1
SBSA	2A	San Mateo	3/7/00	24.73	15.5
SBSA	2A	San Mateo	3/14/00	23.16	13.5
SBSA	2A	San Mateo	3/20/00	21.89	18.8
SBSA	2A	San Mateo	3/25/00	20.24	16.3
SBSA	2A	San Mateo	3/27/00	20.57	19.8
SBSA	2A	San Mateo	4/5/00	19.93	17.9
SBSA	2A	San Mateo	4/12/00	20.29	16.4
SBSA	2A	San Mateo	4/18/00	20.62	14.2
SBSA	2A	San Mateo	4/24/00	20.23	14
SBSA	2A	San Mateo	5/1/00	19.4	19.9
SBSA	2A	San Mateo	5/6/00	19.16	16
SBSA	2A	San Mateo	5/12/00	19.46	14.2
SBSA	2A	San Mateo	5/18/00	19.61	15.8
SBSA	2A	San Mateo	5/23/00	19.56	13.4
SBSA	2A	San Mateo	5/30/00	19.94	15
SBSA	2A	San Mateo	6/5/00	20.13	16.9
SBSA	2A	San Mateo	6/12/00	19.69	12.1
SBSA	2A	San Mateo	6/17/00	18.73	12
SBSA	2A	San Mateo	6/23/00	19.05	16.4
SBSA	2A	San Mateo	6/25/00	19.36	15.8
SBSA	2A	San Mateo	7/5/00	19.99	19
SBSA	2A	San Mateo	7/11/00	19.16	19.2
SBSA	2A	San Mateo	7/17/00	19.43	12.5
SBSA	2A	San Mateo	7/25/00	19.05	15.5
SBSA	2A	San Mateo	7/29/00	18.47	16.8
SBSA	2A	San Mateo	8/4/00	18.76	17.8
SBSA	2A	San Mateo	8/10/00	18.2	11.9
SBSA	2A	San Mateo	8/16/00	17.68	12
SBSA	2A	San Mateo	8/22/00	18.63	19.2
SBSA	2A	San Mateo	8/27/00	17.82	7.99
SBSA	2A	San Mateo	9/4/00	18.47	11.8
SBSA	2A	San Mateo	9/9/00	18.45	14
SBSA	2A	San Mateo	9/15/00	18.3	13.8
SBSA	2A	San Mateo	9/20/00	18.58	11
SBSA	2A	San Mateo	9/26/00	18.68	12.3
SBSA	2A	San Mateo	10/3/00	18.07	11.4
SBSA	2A	San Mateo	10/9/00	18.28	12.4
SBSA	2A	San Mateo	10/15/00	18.2	10.9
SBSA	2A	San Mateo	10/21/00	18.42	13.4
SBSA	2A	San Mateo	10/27/00	22.33	11.3
SBSA	2A	San Mateo	11/3/00	19.38	20.9

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Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
SBSA	2A	San Mateo	11/8/00	19.21	19.5
SBSA	2A	San Mateo	11/14/00	18.91	20.3
SBSA	2A	San Mateo	11/20/00	18.86	19.8
SBSA	2A	San Mateo	11/26/00	18.25	15.1
SBSA	2A	San Mateo	12/2/00	18.43	15.8
SBSA	2A	San Mateo	12/8/00	18.4	15.8
SBSA	2A	San Mateo	12/14/00	19.49	15.3
SBSA	2A	San Mateo	12/20/00	18.68	13.4
SBSA	2A	San Mateo	12/26/00	17.55	11
SBSA	2A	San Mateo	1/1/01	17.19	9.07
SBSA	2A	San Mateo	1/11/01	30.47	7.28
SBSA	2A	San Mateo	1/13/01	20.69	8.19
SBSA	2A	San Mateo	1/19/01	18.58	14.3
SBSA	2A	San Mateo	1/25/01	25.42	16
SFAirport-Municipal	2	San Mateo	1/3/00	0.89	69
SFAirport-Municipal	2	San Mateo	2/22/00	1.42	84
SFAirport-Municipal	2	San Mateo	4/10/00	0.83	35
SFAirport-Municipal	2	San Mateo	5/8/00	1.04	51
SFAirport-Municipal	2	San Mateo	6/5/00	0.87	24
SFAirport-Municipal	2	San Mateo	7/10/00	0.97	44.4
SFAirport-Municipal	2	San Mateo	8/7/00	1.08	17
SFAirport-Municipal	2	San Mateo	9/11/00	0.9	13
SFAirport-Municipal	2	San Mateo	11/13/00	0.79	26
SFAirport-Municipal	2	San Mateo	12/11/00	0.85	2
SJSC	2A	Santa Clara	1/20/00	127.5	5
SJSC	2A	Santa Clara	2/9/00	128.2	3
SJSC	2A	Santa Clara	3/22/00	131	3
SJSC	2A	Santa Clara	4/6/00	127.4	3
SJSC	2A	Santa Clara	5/2/00	126.9	2
SJSC	2A	Santa Clara	6/8/00	128	3
SJSC	2A	Santa Clara	7/19/00	118.1	2
SJSC	2A	Santa Clara	7/20/00	118.4	2
SJSC	2A	Santa Clara	8/17/00	116.6	2
SJSC	2A	Santa Clara	9/6/00	118.4	4
SJSC	2A	Santa Clara	9/7/00	118.3	3
SJSC	2A	Santa Clara	10/3/00	118.2	2
SJSC	2A	Santa Clara	10/4/00	119.1	2
SJSC	2A	Santa Clara	11/14/00	125	2
SJSC	2A	Santa Clara	11/15/00	123.6	2
SJSC	2A	Santa Clara	12/7/00	120.2	4
SJSC	2A	Santa Clara	1/17/01	120.3	2
Sonoma	2	Sonoma	1/1/00	3.174	4.38
Sonoma	2	Sonoma	1/10/00	3.066	5.02
Sonoma	2	Sonoma	1/18/00	5.785	5.37
Sonoma	2	Sonoma	1/24/00	5.785	5.24
Sonoma	2	Sonoma	1/31/00	5.111	5.8
Sonoma	2	Sonoma	2/7/00	4.213	7.44
Sonoma	2	Sonoma	2/14/00	10.789	11.7
Sonoma	2	Sonoma	2/22/00	8.108	8.65
Sonoma	2	Sonoma	2/28/00	9.086	4.66
Sonoma	2	Sonoma	3/6/00	6.791	6.01
Sonoma	2	Sonoma	3/13/00	5.423	6.5
Sonoma	2	Sonoma	3/20/00	4.584	3.55
Sonoma	2	Sonoma	3/27/00	3.608	4.58
Sonoma	2	Sonoma	4/3/00	3.011	5.72
Sonoma	2	Sonoma	4/10/00	3.449	4.67
Sonoma	2	Sonoma	4/17/00	7.658	5.75
Sonoma	2	Sonoma	4/24/00	3.469	4.04

Appendix A: Preliminary Verified Data Set

Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
Sonoma	2	Sonoma	5/1/00	3.295	5.22
Sonoma	2	Sonoma	5/8/00	3.858	4.39
Sonoma	2	Sonoma	5/15/00	4.604	3.95
Sonoma	2	Sonoma	12/4/00	2.786	5.33
Sonoma	2	Sonoma	12/11/00	3.365	3.04
Sonoma	2	Sonoma	12/18/00	3.157	4.7
Sonoma	2	Sonoma	12/26/00	2.724	4.36
SouthernMarin	2B	Marin	1/27/00	4.14	24.5
SouthernMarin	2B	Marin	3/16/00	3.22	35.7
SouthernMarin	2B	Marin	4/5/00	2.37	18.8
SouthernMarin	2B	Marin	5/2/00	2.64	25.2
SouthernMarin	2B	Marin	6/9/00	2.51	11
SouthernMarin	2B	Marin	7/13/00	2.41	19
SouthernMarin	2B	Marin	8/3/00	2.46	19
SouthernMarin	2B	Marin	9/6/00	2.4	16
SouthernMarin	2B	Marin	10/18/00	2.44	19
SouthernMarin	2B	Marin	11/5/00	2.85	17
SouthernMarin	2B	Marin	12/20/00	2.85	20
SouthernMarin	2B	Marin	1/3/01	2.52	24
SouthernMarin	2B	Marin	2/14/01	3.67	20
SSFSanBruno	2	San Mateo	1/1/00	8.31	27
SSFSanBruno	2	San Mateo	2/2/00	10.3	21
SSFSanBruno	2	San Mateo	3/7/00	13.01	28
SSFSanBruno	2	San Mateo	4/4/00	9.91	21
SSFSanBruno	2	San Mateo	5/2/00	9.94	23
SSFSanBruno	2	San Mateo	6/1/00	10.02	10
SSFSanBruno	2	San Mateo	7/6/00	10.12	16
SSFSanBruno	2	San Mateo	8/3/00	10.12	17
SSFSanBruno	2	San Mateo	9/6/00	10.07	23
SSFSanBruno	2	San Mateo	10/3/00	9.98	12
SSFSanBruno	2	San Mateo	11/3/00	10.13	15
SSFSanBruno	2	San Mateo	12/13/00	10.28	24.4
SSFSanBruno	2	San Mateo	1/10/01	17.56	26
SSFSanBruno	2	San Mateo	2/1/01	9.84	19
Vallejo	2	Solano	1/4/00	11.3	29.1
Vallejo	2	Solano	1/24/00	27.69	31.7
Vallejo	2	Solano	2/1/00	13.8	23.4
Vallejo	2	Solano	2/11/00	3.2	29.3
Vallejo	2	Solano	3/1/00	20.3	12.9
Vallejo	2	Solano	3/5/00	3.03	14.7
Vallejo	2	Solano	4/3/00	12.6	20.8
Vallejo	2	Solano	5/2/00	13.6	15
Vallejo	2	Solano	6/13/00	12.8	16
Vallejo	2	Solano	7/11/00	12	23
Vallejo	2	Solano	8/10/00	11.4	14
Vallejo	2	Solano	9/13/00	12.3	23
Vallejo	2	Solano	10/4/00	11.2	25
Vallejo	2	Solano	11/8/00	10.2	22
Sunnyvale	2A	Santa Clara	1/11/00	15.9	6
Sunnyvale	2A	Santa Clara	1/23/00	17.68	5
Sunnyvale	2A	Santa Clara	2/9/00	22.79	ND
Sunnyvale	2A	Santa Clara	2/24/00	23.26	ND
Sunnyvale	2A	Santa Clara	3/8/00	19.79	5
Sunnyvale	2A	Santa Clara	3/26/00	18.09	4
Sunnyvale	2A	Santa Clara	4/13/00	13.1	5
Sunnyvale	2A	Santa Clara	4/18/00	13.84	4
Sunnyvale	2A	Santa Clara	5/11/00	11.96	3
Sunnyvale	2A	Santa Clara	5/25/00	13.53	ND

Appendix A: Preliminary Verified Data Set

Discharger	Trtmnt	County	Date	Q, mgd	Hg, ng/L
Sunnyvale	2A	Santa Clara	6/14/00	13.27	4
Sunnyvale	2A	Santa Clara	6/27/00	7.05	ND
Sunnyvale	2A	Santa Clara	7/18/00	15.74	ND
Sunnyvale	2A	Santa Clara	7/25/00	17.02	7
Sunnyvale	2A	Santa Clara	8/8/00	11.98	2
Sunnyvale	2A	Santa Clara	8/15/00	9.17	3
Sunnyvale	2A	Santa Clara	9/20/00	9.76	3
Sunnyvale	2A	Santa Clara	9/26/00	7.37	4
Sunnyvale	2A	Santa Clara	10/12/00	15.97	4
Sunnyvale	2A	Santa Clara	10/25/00	13.76	3
Sunnyvale	2A	Santa Clara	11/5/00	13.59	3
Sunnyvale	2A	Santa Clara	11/20/00	16.6	4
Sunnyvale	2A	Santa Clara	12/13/00	12.96	2
Sunnyvale	2A	Santa Clara	12/19/00	13.56	6

Appendix B: Final Verified Data Set

Discharger	Treatment	County	Date	Q, mgd	C_Ng/L
Benicia	2	Solano	1/10/00	2.7	30.6
Benicia	2	Solano	2/16/00	4.5	17.4
Benicia	2	Solano	4/4/00	3.3	15
Benicia	2	Solano	5/18/00	3.0	12
Benicia	2	Solano	6/13/00	3.3	17
Benicia	2	Solano	7/12/00	2.8	23
Benicia	2	Solano	8/8/00	2.6	19
Benicia	2	Solano	9/28/00	2.5	22
Benicia	2	Solano	10/18/00	2.8	19
Benicia	2	Solano	11/15/00	2.8	13
Benicia	2	Solano	12/14/00	3.4	11
Benicia	2	Solano	1/25/01	3.6	8
Burlingame	2	San Mateo	1/6/00	3.5	7.48
Burlingame	2	San Mateo	2/2/00	4.4	7.1
Burlingame	2	San Mateo	3/1/00	5.7	8.56
Burlingame	2	San Mateo	4/17/00	4.6	11.3
Burlingame	2	San Mateo	5/5/00	3.8	13.3
Burlingame	2	San Mateo	7/21/00	3.8	17
Burlingame	2	San Mateo	8/8/00	3.5	4.49
Burlingame	2	San Mateo	9/13/00	3.6	11.4
Burlingame	2	San Mateo	10/4/00	4.3	8.27
Burlingame	2	San Mateo	11/6/00	4.0	6.2
Burlingame	2	San Mateo	12/5/00	4.1	10
Burlingame	2	San Mateo	1/6/01	3.8	9.3
CCCSD	2	Contra Costa	1/5/00	39.7	19
CCCSD	2	Contra Costa	2/3/00	46.9	<16
CCCSD	2	Contra Costa	3/2/00	64.9	25
CCCSD	2	Contra Costa	4/5/00	47.6	17
CCCSD	2	Contra Costa	5/4/00	43.8	22
CCCSD	2	Contra Costa	6/12/00	41.3	28
CCCSD	2	Contra Costa	7/7/00	40.8	29
CCCSD	2	Contra Costa	8/3/00	41.1	29
CCCSD	2	Contra Costa	9/7/00	40.0	29
CCCSD	2	Contra Costa	10/4/00	39.4	39
CCCSD	2	Contra Costa	11/3/00	41.2	42
CCCSD	2	Contra Costa	12/6/00	39.7	22
CCCSD	2	Contra Costa	1/23/01	41.5	44
CCCSD	2	Contra Costa	2/8/01	40.2	30
CentralMarin	2	Marin	2/2/00	13.6	6.71
CentralMarin	2	Marin	3/8/00	23.5	14.1
CentralMarin	2	Marin	4/5/00	9.3	9.71
CentralMarin	2	Marin	5/3/00	8.7	8.34
CentralMarin	2	Marin	6/7/00	8.4	6.04
CentralMarin	2	Marin	7/6/00	8.3	4.47
CentralMarin	2	Marin	8/2/00	8.1	3.8
CentralMarin	2	Marin	9/6/00	7.9	4.2
CentralMarin	2	Marin	10/4/00	7.8	3.65
CentralMarin	2	Marin	11/8/00	8.2	12.2

CentralMarin	2	Marin	12/6/00	8.3	9.31
CentralMarin	2	Marin	1/3/01	8.4	5.6
CentralMarin	2	Marin	2/7/01	9.5	5
DeltaDiablo	2	Contra Costa	1/4/00	13.2	10
DeltaDiablo	2	Contra Costa	6/6/00	13.9	8.6
DeltaDiablo	2	Contra Costa	6/19/00	13.1	11.6
DeltaDiablo	2	Contra Costa	8/1/00	14.1	12
DeltaDiablo	2	Contra Costa	9/13/00	13.8	<16.5
DeltaDiablo	2	Contra Costa	9/17/00	13.4	8.66
DeltaDiablo	2	Contra Costa	9/20/00	13.9	10.8
DeltaDiablo	2	Contra Costa	10/4/00	14.4	11
DeltaDiablo	2	Contra Costa	11/1/00	14.3	12.3
DeltaDiablo	2	Contra Costa	11/15/00	13.1	10.7
DeltaDiablo	2	Contra Costa	12/5/00	13.7	14.5
DeltaDiablo	2	Contra Costa	12/19/00	14.4	11
DeltaDiablo	2	Contra Costa	1/3/01	14.3	13
DeltaDiablo	2	Contra Costa	1/16/01	12.4	13
DeltaDiablo	2	Contra Costa	2/5/01	13.3	14
DeltaDiablo	2	Contra Costa	2/20/01	13.6	17
EBDA	2	Alameda	1/5/00	74.3	19.8
EBDA	2	Alameda	1/19/00	79.1	26.7
EBDA	2	Alameda	2/2/00	83.6	18.7
EBDA	2	Alameda	2/16/00	98.5	15
EBDA	2	Alameda	3/1/00	95.9	<13.8
EBDA	2	Alameda	3/15/00	89.8	9.1
EBDA	2	Alameda	4/5/00	73.2	18
EBDA	2	Alameda	4/19/00	78.5	10
EBDA	2	Alameda	5/3/00	70.6	14
EBDA	2	Alameda	5/17/00	75.5	10
EBDA	2	Alameda	6/7/00	71.0	12
EBDA	2	Alameda	6/21/00	74.7	11
EBDA	2	Alameda	7/5/00	66.5	10
EBDA	2	Alameda	7/19/00	71.9	13.2
EBDA	2	Alameda	8/2/00	73.4	15.8
EBDA	2	Alameda	8/16/00	68.7	11.2
EBDA	2	Alameda	9/5/00	70.5	11.4
EBDA	2	Alameda	10/4/00	70.3	13.6
EBDA	2	Alameda	11/1/00	85.9	11.8
EBDA	2	Alameda	12/6/00	74.3	21
EBMUD	2	Alameda	12/8/99	68.4	13.2
EBMUD	2	Alameda	12/21/99	63.7	13.7
EBMUD	2	Alameda	12/28/99	64.5	18
EBMUD	2	Alameda	1/9/00	63.2	<20
EBMUD	2	Alameda	1/13/00	66.6	<20
EBMUD	2	Alameda	1/19/00	80.9	<20
EBMUD	2	Alameda	1/26/00	95.1	31
EBMUD	2	Alameda	2/4/00	78.1	<20
EBMUD	2	Alameda	2/10/00	114.6	<20
EBMUD	2	Alameda	2/15/00	144.3	70
EBMUD	2	Alameda	2/24/00	130.5	31
EBMUD	2	Alameda	3/5/00	151.1	30
EBMUD	2	Alameda	3/9/00	148.9	30

EBMUD	2	Alameda	3/15/00	81.3	<20
EBMUD	2	Alameda	3/19/00	79.1	<20
EBMUD	2	Alameda	3/29/00	72.1	<20
EBMUD	2	Alameda	4/5/00	72.0	<20
EBMUD	2	Alameda	4/12/00	82.0	<20
EBMUD	2	Alameda	4/20/00	72.0	23
EBMUD	2	Alameda	4/27/00	70.0	20
EBMUD	2	Alameda	5/4/00	66.0	80
EBMUD	2	Alameda	5/10/00	76.0	<20
EBMUD	2	Alameda	5/14/00	72.0	<20
EBMUD	2	Alameda	5/24/00	69.0	26
EBMUD	2	Alameda	6/1/00	70.0	<20
EBMUD	2	Alameda	6/8/00	70.0	<20
EBMUD	2	Alameda	6/11/00	69.0	<20
EBMUD	2	Alameda	6/21/00	68.0	<20
EBMUD	2	Alameda	6/27/00	69.0	<20
EBMUD	2	Alameda	7/6/00	69.0	15.8
EBMUD	2	Alameda	7/12/00	69.0	14
EBMUD	2	Alameda	7/20/00	67.0	9.35
EBMUD	2	Alameda	7/26/00	71.0	16.4
EBMUD	2	Alameda	8/3/00	68.0	9.16
EBMUD	2	Alameda	8/9/00	72.0	9.54
EBMUD	2	Alameda	8/13/00	64.0	13.5
EBMUD	2	Alameda	8/23/00	67.0	11.9
EBMUD	2	Alameda	8/24/00	68.0	10.8
EBMUD	2	Alameda	8/29/00	68.0	12.9
EBMUD	2	Alameda	9/6/00	63.0	20.3
EBMUD	2	Alameda	9/13/00	67.0	10.4
EBMUD	2	Alameda	9/20/00	65.0	9.55
EBMUD	2	Alameda	9/24/00	66.0	11
EBMUD	2	Alameda	10/5/00	64.0	18.3
EBMUD	2	Alameda	10/15/00	68.0	14.8
EBMUD	2	Alameda	10/19/00	65.0	18.5
EBMUD	2	Alameda	10/24/00	64.0	12
EBMUD	2	Alameda	11/2/00	69.0	12
EBMUD	2	Alameda	11/7/00	66.0	11
EBMUD	2	Alameda	11/17/00	68.0	13
EBMUD	2	Alameda	11/19/00	70.0	12
EBMUD	2	Alameda	11/29/00	81.0	16
EBMUD	2	Alameda	12/6/00	69.0	15
EBMUD	2	Alameda	12/13/00	82.0	12
EBMUD	2	Alameda	12/19/00	67.0	13
EBMUD	2	Alameda	12/28/00	69.0	11
EBMUD	2	Alameda	1/4/01	66.0	30
EBMUD	2	Alameda	1/9/01	72.0	13
EBMUD	2	Alameda	1/18/01	71.0	10
EBMUD	2	Alameda	1/24/01	75.0	14
EBMUD	2	Alameda	1/28/01	75.0	12
EBMUD	2	Alameda	2/4/01	72.0	15
EBMUD	2	Alameda	2/15/01	83.0	16
EBMUD	2	Alameda	2/23/01	134.0	46
EBMUD	2	Alameda	2/28/01	85.0	16

FairfieldSuisun	2A	Solano	2/9/00	16.4	6.91
FairfieldSuisun	2A	Solano	2/17/00	30.0	6.35
FairfieldSuisun	2A	Solano	3/8/00	24.6	3.25
FairfieldSuisun	2A	Solano	3/15/00	18.1	4.54
FairfieldSuisun	2A	Solano	4/4/00	16.2	6.6
FairfieldSuisun	2A	Solano	4/11/00	17.2	5.4
FairfieldSuisun	2A	Solano	5/11/00	16.4	3.6
FairfieldSuisun	2A	Solano	5/16/00	15.7	3.4
FairfieldSuisun	2A	Solano	6/14/00	13.6	3.6
FairfieldSuisun	2A	Solano	6/21/00	16.7	9.3
FairfieldSuisun	2A	Solano	7/5/00	12.7	3.5
FairfieldSuisun	2A	Solano	7/13/00	16.3	4.1
FairfieldSuisun	2A	Solano	8/3/00	12.8	5.3
FairfieldSuisun	2A	Solano	8/9/00	14.2	6.3
FairfieldSuisun	2A	Solano	9/6/00	13.1	3.2
FairfieldSuisun	2A	Solano	9/14/00	13.5	6.7
FairfieldSuisun	2A	Solano	11/9/00	10.4	3.4
FairfieldSuisun	2A	Solano	11/15/00	16.2	3.5
FairfieldSuisun	2A	Solano	12/9/00	13.9	4.4
FairfieldSuisun	2A	Solano	12/14/00	16.1	3.2
FairfieldSuisun	2A	Solano	1/3/01	14.7	4.8
FairfieldSuisun	2A	Solano	1/10/01	15.6	6.9
Millbrae	2	San Mateo	1/5/00	1.7	20.4
Millbrae	2	San Mateo	2/2/00	2.0	23.2
Millbrae	2	San Mateo	3/8/00	3.5	6.1
Millbrae	2	San Mateo	4/5/00	1.9	14.2
Millbrae	2	San Mateo	5/3/00	1.8	16.1
Millbrae	2	San Mateo	6/7/00	1.9	15.1
Millbrae	2	San Mateo	7/12/00	1.7	10
Millbrae	2	San Mateo	8/2/00	1.8	11
Millbrae	2	San Mateo	9/13/00	1.8	8.9
Millbrae	2	San Mateo	10/11/00	1.8	12
Millbrae	2	San Mateo	11/14/00	1.7	8.4
Millbrae	2	San Mateo	12/13/00	1.8	6.3
Millbrae	2	San Mateo	1/17/01	1.8	8.8
Millbrae	2	San Mateo	2/21/01	3.4	28
MVSD	2	Contra Costa	2/9/00	1.9	8
MVSD	2	Contra Costa	8/2/00	1.8	4.7
MVSD	2	Contra Costa	8/9/00	1.8	5.3
MVSD	2	Contra Costa	8/16/00	1.7	4.9
MVSD	2	Contra Costa	8/22/00	1.7	1.2
MVSD	2	Contra Costa	9/13/00	1.7	8.4
MVSD	2	Contra Costa	10/4/00	1.7	6.4
MVSD	2	Contra Costa	10/11/00	1.7	6.4
MVSD	2	Contra Costa	10/18/00	1.8	7.4
MVSD	2	Contra Costa	10/23/00	1.7	7.5
MVSD	2	Contra Costa	11/2/00	1.7	17
MVSD	2	Contra Costa	11/9/00	1.8	12
MVSD	2	Contra Costa	11/17/00	1.8	8
MVSD	2	Contra Costa	11/30/00	1.8	7
MVSD	2	Contra Costa	12/4/00	1.7	8.1
MVSD	2	Contra Costa	12/6/00	1.7	7

MVSD	2	Contra Costa	12/11/00	1.8	7.3
MVSD	2	Contra Costa	12/12/00	1.8	6.5
MVSD	2	Contra Costa	12/18/00	1.8	7.6
MVSD	2	Contra Costa	12/19/00	1.8	6.9
MVSD	2	Contra Costa	12/27/00	1.8	7.5
MVSD	2	Contra Costa	12/28/00	1.8	7.2
MVSD	2	Contra Costa	1/2/01	1.8	7.3
MVSD	2	Contra Costa	1/3/01	1.8	7.8
MVSD	2	Contra Costa	1/9/01	1.8	7.1
MVSD	2	Contra Costa	1/10/01	2.7	7
MVSD	2	Contra Costa	1/16/01	1.8	6.7
MVSD	2	Contra Costa	1/17/01	1.8	7.1
MVSD	2	Contra Costa	1/24/01	1.8	7.5
MVSD	2	Contra Costa	1/30/01	1.8	5.7
MVSD	2	Contra Costa	1/31/01	1.8	5.7
PaloAlto	2A	Santa Clara	1/12/00	25.9	4
PaloAlto	2A	Santa Clara	2/9/00	27.9	5.11
PaloAlto	2A	Santa Clara	3/8/00	39.3	2.85
PaloAlto	2A	Santa Clara	4/12/00	28.8	2.59
PaloAlto	2A	Santa Clara	5/10/00	27.3	2.61
PaloAlto	2A	Santa Clara	6/7/00	20.2	2.78
PaloAlto	2A	Santa Clara	7/12/00	26.4	4.1
PaloAlto	2A	Santa Clara	8/9/00	26.3	2.77
PaloAlto	2A	Santa Clara	9/13/00	27.4	4.84
PaloAlto	2A	Santa Clara	10/18/00	26.4	18.3
PaloAlto	2A	Santa Clara	11/15/00	26.5	8.52
PaloAlto	2A	Santa Clara	12/6/00	24.2	7.16
PaloAlto	2A	Santa Clara	1/9/01	25.7	4.76
PaloAlto	2A	Santa Clara	2/6/01	27.9	5.02
Petaluma	2A	Sonoma	1/1/00	-	6.54
Petaluma	2A	Sonoma	2/1/00	6.4	10.1
Petaluma	2A	Sonoma	3/1/00	8.6	10.1
Petaluma	2A	Sonoma	11/17/00	5.2	4.6
Petaluma	2A	Sonoma	1/12/01	8.8	6.1
PinoleHercules	2	Contra Costa	3/8/00	4.6	7.97
PinoleHercules	2	Contra Costa	6/7/00	2.1	8.4
PinoleHercules	2	Contra Costa	9/11/00	2.1	8.6
PinoleHercules	2	Contra Costa	12/11/00	2.5	7
Rodeo	2	Contra Costa	3/6/00	1.6	10.8
Rodeo	2	Contra Costa	6/5/00	0.9	5.4
Rodeo	2	Contra Costa	9/6/00	0.8	33
Rodeo	2	Contra Costa	12/5/00	0.7	5.7
SanFrancisco-Southeast	2	San Francisco	9/1/00	79.2	33
SanFrancisco-Southeast	2	San Francisco	9/3/00	60.4	29
SanFrancisco-Southeast	2	San Francisco	9/20/00	75.9	41
SanFrancisco-Southeast	2	San Francisco	9/28/00	64.1	25
SanFrancisco-Southeast	2	San Francisco	11/3/00	64.2	7
SanFrancisco-Southeast	2	San Francisco	11/9/00	66.8	17
SanFrancisco-Southeast	2	San Francisco	11/17/00	67.9	5
SanFrancisco-Southeast	2	San Francisco	11/21/00	97.4	11
SanFrancisco-Southeast	2	San Francisco	12/2/00	66.9	3
SanFrancisco-Southeast	2	San Francisco	12/16/00	68.4	4

SanFrancisco-Southeast	2	San Francisco	12/23/00	67.5	7
SanFrancisco-Southeast	2	San Francisco	1/7/01	62.0	6
SanFrancisco-Southeast	2	San Francisco	1/14/01	62.9	9
SanFrancisco-Southeast	2	San Francisco	1/21/01	64.2	8
SanFrancisco-Southeast	2	San Francisco	2/5/01	64.1	6
SanFrancisco-Southeast	2	San Francisco	2/12/01	114.1	14
SanFrancisco-Southeast	2	San Francisco	2/26/01	84.8	15
SanMateo	2	San Mateo	1/4/00	11.2	68
SanMateo	2	San Mateo	2/8/00	13.0	26
SanMateo	2	San Mateo	3/7/00	20.5	14
SanMateo	2	San Mateo	4/2/00	14.2	15
SanMateo	2A	San Mateo	5/6/00	12.7	11
SanMateo	2A	San Mateo	6/6/00	12.2	9.5
SanMateo	2A	San Mateo	7/5/00	11.7	8.5
SanMateo	2A	San Mateo	8/7/00	11.7	11
SanMateo	2A	San Mateo	9/12/00	11.4	12.7
SanMateo	2	San Mateo	10/3/00	11.7	8.4
SanMateo	2	San Mateo	11/7/00	12.1	13.5
SanMateo	2	San Mateo	12/5/00	11.8	10.5
SanMateo	2	San Mateo	1/7/01	13.4	12
SanMateo	2	San Mateo	2/7/01	11.8	14
Sausilito	2	Marin	1/2/00	1.6	22.4
Sausilito	2	Marin	2/2/00	1.4	21
Sausilito	2	Marin	3/1/00	2.1	16.8
Sausilito	2	Marin	4/3/00	1.3	21.5
Sausilito	2	Marin	5/4/00	1.4	15.2
Sausilito	2	Marin	6/5/00	1.4	25.3
Sausilito	2	Marin	7/11/00	1.4	30
Sausilito	2	Marin	8/3/00	1.3	11.7
Sausilito	2	Marin	9/6/00	1.2	19.5
Sausilito	2	Marin	10/3/00	1.3	22.1
Sausilito	2	Marin	12/10/00	1.5	23.4
Sausilito	2	Marin	1/1/01	1.4	23.5
Sausilito	2	Marin	2/1/01	1.4	23.5
SFAirport-Municipal	2	San Mateo	1/3/00	0.9	69
SFAirport-Municipal	2	San Mateo	2/22/00	1.4	84
SFAirport-Municipal	2	San Mateo	4/10/00	0.8	35
SFAirport-Municipal	2	San Mateo	5/8/00	1.0	51
SFAirport-Municipal	2	San Mateo	6/5/00	0.9	24
SFAirport-Municipal	2	San Mateo	7/10/00	1.0	44.4
SFAirport-Municipal	2	San Mateo	8/7/00	1.1	17
SFAirport-Municipal	2	San Mateo	9/11/00	0.9	13
SFAirport-Municipal	2	San Mateo	11/13/00	0.8	26
SFAirport-Municipal	2	San Mateo	12/11/00	0.9	2
SJSC	2A	Santa Clara	1/20/00	127.5	5
SJSC	2A	Santa Clara	2/9/00	128.2	3
SJSC	2A	Santa Clara	3/22/00	131.0	3
SJSC	2A	Santa Clara	4/6/00	127.4	3
SJSC	2A	Santa Clara	5/2/00	126.9	2
SJSC	2A	Santa Clara	6/8/00	128.0	3
SJSC	2A	Santa Clara	7/19/00	118.1	2
SJSC	2A	Santa Clara	7/20/00	118.4	2

SJSC	2A	Santa Clara	8/17/00	116.6	2
SJSC	2A	Santa Clara	9/6/00	118.4	4
SJSC	2A	Santa Clara	9/7/00	118.3	3
SJSC	2A	Santa Clara	10/3/00	118.2	2
SJSC	2A	Santa Clara	10/4/00	119.1	2
SJSC	2A	Santa Clara	11/14/00	125.0	2
SJSC	2A	Santa Clara	11/15/00	123.6	2
SJSC	2A	Santa Clara	12/7/00	120.2	4
SJSC	2A	Santa Clara	1/17/01	120.3	2
Sonoma	2	Sonoma	1/1/00	3.2	4.38
Sonoma	2	Sonoma	1/10/00	3.1	5.02
Sonoma	2	Sonoma	1/18/00	5.8	5.37
Sonoma	2	Sonoma	1/24/00	5.8	5.24
Sonoma	2	Sonoma	1/31/00	5.1	5.8
Sonoma	2	Sonoma	2/7/00	4.2	7.44
Sonoma	2	Sonoma	2/14/00	10.8	11.7
Sonoma	2	Sonoma	2/22/00	8.1	8.65
Sonoma	2	Sonoma	2/28/00	9.1	4.66
Sonoma	2	Sonoma	3/6/00	6.8	6.01
Sonoma	2	Sonoma	3/13/00	5.4	6.5
Sonoma	2	Sonoma	3/20/00	4.6	3.55
Sonoma	2	Sonoma	3/27/00	3.6	4.58
Sonoma	2	Sonoma	4/3/00	3.0	5.72
Sonoma	2	Sonoma	4/10/00	3.4	4.67
Sonoma	2	Sonoma	4/17/00	7.7	5.75
Sonoma	2	Sonoma	4/24/00	3.5	4.04
Sonoma	2	Sonoma	5/1/00	3.3	5.22
Sonoma	2	Sonoma	5/8/00	3.9	4.39
Sonoma	2	Sonoma	5/15/00	4.6	3.95
Sonoma	2	Sonoma	12/4/00	2.8	5.33
Sonoma	2	Sonoma	12/11/00	3.4	3.04
Sonoma	2	Sonoma	12/18/00	3.2	4.7
Sonoma	2	Sonoma	12/26/00	2.7	4.36
SouthernMarin	2	Marin	1/27/00	4.1	24.5
SouthernMarin	2	Marin	3/16/00	3.2	35.7
SouthernMarin	2	Marin	4/5/00	2.4	18.8
SouthernMarin	2	Marin	5/2/00	2.6	25.2
SouthernMarin	2	Marin	6/9/00	2.5	11
SouthernMarin	2	Marin	7/13/00	2.4	19
SouthernMarin	2	Marin	8/3/00	2.5	19
SouthernMarin	2	Marin	9/6/00	2.4	16
SouthernMarin	2	Marin	10/18/00	2.4	19
SouthernMarin	2	Marin	11/5/00	2.9	17
SouthernMarin	2	Marin	12/20/00	2.9	20
SouthernMarin	2	Marin	1/3/01	2.5	24
SouthernMarin	2	Marin	2/14/01	3.7	20
SSFSanBruno	2	San Mateo	1/1/00	8.3	27
SSFSanBruno	2	San Mateo	2/2/00	10.3	21
SSFSanBruno	2	San Mateo	3/7/00	13.0	28
SSFSanBruno	2	San Mateo	4/4/00	9.9	21
SSFSanBruno	2	San Mateo	5/2/00	9.9	23
SSFSanBruno	2	San Mateo	6/1/00	10.0	10

SSFSanBruno	2	San Mateo	7/6/00	10.1	16
SSFSanBruno	2	San Mateo	8/3/00	10.1	17
SSFSanBruno	2	San Mateo	9/6/00	10.1	23
SSFSanBruno	2	San Mateo	10/3/00	10.0	12
SSFSanBruno	2	San Mateo	11/3/00	10.1	15
SSFSanBruno	2	San Mateo	12/13/00	10.3	24.4
SSFSanBruno	2	San Mateo	1/10/01	17.6	26
SSFSanBruno	2	San Mateo	2/1/01	9.8	19
Sunnyvale	2A	Santa Clara	1/11/00	15.9	6
Sunnyvale	2A	Santa Clara	1/23/00	17.7	5
Sunnyvale	2A	Santa Clara	2/9/00	22.8 <4	
Sunnyvale	2A	Santa Clara	2/24/00	23.3 <3	
Sunnyvale	2A	Santa Clara	3/8/00	19.8	5
Sunnyvale	2A	Santa Clara	3/26/00	18.1	4
Sunnyvale	2A	Santa Clara	4/13/00	13.1	5
Sunnyvale	2A	Santa Clara	4/18/00	13.8	4
Sunnyvale	2A	Santa Clara	5/11/00	12.0	3
Sunnyvale	2A	Santa Clara	5/25/00	13.5 <2	
Sunnyvale	2A	Santa Clara	6/14/00	13.3	4
Sunnyvale	2A	Santa Clara	6/27/00	7.1 <2	
Sunnyvale	2A	Santa Clara	7/18/00	15.7 <3	
Sunnyvale	2A	Santa Clara	7/25/00	17.0	7
Sunnyvale	2A	Santa Clara	8/8/00	12.0	2
Sunnyvale	2A	Santa Clara	8/15/00	9.2	3
Sunnyvale	2A	Santa Clara	9/20/00	9.8	3
Sunnyvale	2A	Santa Clara	9/26/00	7.4	4
Sunnyvale	2A	Santa Clara	10/12/00	16.0	4
Sunnyvale	2A	Santa Clara	10/25/00	13.8	3
Sunnyvale	2A	Santa Clara	11/5/00	13.6	3
Sunnyvale	2A	Santa Clara	11/20/00	16.6	4
Sunnyvale	2A	Santa Clara	12/13/00	13.0	2
Sunnyvale	2A	Santa Clara	12/19/00	13.6	6
Vallejo	2	Solano	1/4/00	11.3	29.1
Vallejo	2	Solano	1/24/00	27.7	31.7
Vallejo	2	Solano	2/1/00	13.8	23.4
Vallejo	2	Solano	2/11/00	3.2	29.3
Vallejo	2	Solano	3/1/00	20.3	12.9
Vallejo	2	Solano	3/5/00	3.0	14.7
Vallejo	2	Solano	4/3/00	12.6	20.8
Vallejo	2	Solano	5/2/00	13.6	15
Vallejo	2	Solano	6/13/00	12.8	16
Vallejo	2	Solano	7/11/00	12.0	23
Vallejo	2	Solano	8/10/00	11.4	14
Vallejo	2	Solano	9/13/00	12.3	23
Vallejo	2	Solano	10/4/00	11.2	25
Vallejo	2	Solano	11/8/00	10.2	22

Attachment H.
Discharger's January 18, 2002
Feasibility Study for Selected Constituents

The City of Burlingame

Office Of Environmental
Compliance - 1103 Airport Blvd
(650)-342-3727

City Hall - 501 Primrose Road
Burlingame, California 94010-3997

Corporation Yard
1361 North Carolan Ave

January 18, 2002

Ms. Loretta Barsamian
Executive Officer
San Francisco Regional Water
Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attention: Mr. Ken Katen, P.E.

Dear Ms. Barsamian:

Subject: Updated Feasibility Study and Request For Compliance Schedule for City of Burlingame, NPDES Permit No. CA0037788

The enclosed feasibility study and related requests for compliance schedules and interim limits are submitted to the Regional Water Quality Control Board (RWQCB) by the City of Burlingame to demonstrate this agency's inability to consistently comply with proposed final water quality-based effluent limits for the following constituents of concern (COCs): copper, mercury, alpha-BHC, and dieldrin. This is an update to the 12/7/01 Feasibility Study to incorporate changes requested in the RWQCB's 12/11/01 comments from Ms. Selina Louie.

BACKGROUND

This study of the feasibility of achieving compliance with proposed final effluent limits for copper, mercury, alpha-BHC, and dieldrin is being provided in response to the water quality-based effluent limits that are stated in the documentation for the RWQCB's 11/7/01 draft Tentative Order for the renewal of NPDES Permit No. CA0037788 for the City of Burlingame Wastewater Treatment Plant. The requirement for feasibility studies as a way to document the need for interim effluent limits was first suggested on May 3, 2001, and further defined in a May 11, 2001, meeting between representatives of Bay area dischargers, the RWQCB, the U. S. Environmental Protection Agency (USEPA), and the State Water Resources Control Board (SWRCB). Five Bay area dischargers submitted feasibility studies to the RWQCB in May and had their permits adopted in June, with effluent limits based on those studies. It is the City's understanding that those studies were sufficient to prove inability to comply with the proposed final water quality-based effluent limits. Hence, this analysis is generally based on those previous examples.

It is the City's understanding that the City must demonstrate that it is infeasible to meet the final effluent limits for the four COCs listed above in order to be granted a compliance schedule and interim effluent limits in the renewed NPDES permit. If the City believes it is infeasible to meet a

California Toxic Rule (CTR)/State Implementation Policy (SIP) water quality-based effluent limit, then the SIP procedures should be followed. Similarly, water quality-based effluent limits based on the Basin Plan should follow procedures outlined in the 1995 Basin Plan. The RWQCB will determine if a compliance schedule and interim limits are appropriate, based on the discharger's submittal. If the RWQCB agrees that immediate compliance is infeasible, and that all the conditions are met, a compliance schedule and interim limit can be established on a constituent-by-constituent basis. Accordingly, if the RWQCB believes that a compliance schedule and interim limits are not justified by this submittal for one or more of the COCs, the City requests that the RWQCB hold the adoption of the Tentative Order (TO) in abeyance until additional data can be provided to allow full consideration of the City's inability to immediately comply with the subject final water quality-based effluent limits.

There are two bases for the feasibility analysis: 1) the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (known as the SIP - March 2000) which establishes statewide policy for NPDES permitting, and 2) the RWQCB's Basin Plan, 1995. The SIP provides for the situation where an existing NPDES discharger cannot immediately comply with an effluent limitation derived from a California Toxics Rule (CTR) criterion. The SIP allows for the adoption of interim effluent limits and a schedule to achieve compliance with a water quality-based effluent limit in such cases. To qualify for interim limits and a compliance schedule, the discharger must request and/or demonstrate that it is appropriate to establish interim requirements for implementation of CTR criterion.

The term "infeasible" is defined in the SIP as "not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

The SIP requires that the following information be submitted to the RWQCB to support a finding of infeasibility:

- Documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
- Documentation of source control and/or pollution minimization efforts currently underway or completed;
- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment; and
- A demonstration that the proposed schedule is as short as practicable.

The SIP requires that interim numeric effluent limits be based on (a) current treatment facility performance or (b) limits in the existing permit, whichever is more stringent.

The SIP also requires that compliance schedules be limited to specific time periods. For constituents not on the 303(d) list, the maximum length of the compliance schedule is five years from the date of permit issuance. For constituents on the 303(d) list (where a TMDL is required to be prepared), the maximum length of the compliance schedule is 20 years from the effective date of the SIP (March 2000). To secure the TMDL-based compliance schedule, the discharger must make commitments to support and expedite development of the associated TMDL.

In similar fashion, when a NPDES discharger cannot immediately comply with an effluent limitation from a Basin Plan criterion, the Basin Plan allows the RWQCB to consider the discharger's proposals for longer compliance schedules where the revised effluent limitation will not be immediately met. The Basin Plan justification for compliance schedules is essentially the same as the SIP procedure. Both procedures require implementation of pollution prevention measures to reduce COC loadings to the maximum extent practicable as soon as possible.

CONSTITUENTS TO BE EVALUATED

The constituents for which the City requests interim effluent limits in the renewal of NPDES No. CA0037788 are shown in Table 1.

TABLE 1

CONSTITUENT	ON 303(D) LIST?	BASIS OF LIMIT	
		CTR	BASIN PLAN
Cyanide	No	√	
Mercury	Yes		√
Copper	Yes	√	
Alpha-BHC	No	√	
Dieldrin	Yes	√	

As discussed with RWQCB staff, no feasibility analysis is required for cyanide at this time due to the questionable reasonable potential status which is going to be resolved by a Bay area discharger-sponsored data collection project and site-specific objective (SSO) investigation. Consequently, the feasibility analysis for the City needs to cover only four COCs: Hg, Cu, alpha-BHC, and dieldrin.

PROPOSED WATER QUALITY-BASED EFFLUENT LIMITS AND CURRENT PLANT PERFORMANCE FOR CONSTITUENTS OF CONCERN

The RWQCB staff has transmitted proposed final water quality-based effluent limits for the City for the constituents of concern in a 11/7/01 draft Tentative Order package, which may be modified before final adoption. The proposed final effluent limits and the City's effluent quality are summarized in Table 2 for the constituents of concern. Effluent quality for metals is based on data for sampling conducted between January 1998 and July 2001. Effluent quality for the organics is based on data collected between April 1997 and July 1999.

TABLE 2				
CONSTITUENT OF CONCERN	FINAL WATER QUALITY-BASED EFFLUENT LIMITS[1]		BURLINGAME WWTP EFFLUENT QUALITY [4]	
	AMEL[2]	MDEL[3]	MEAN	MEC[6]
Copper, ug/L	13.1	23.2	8.6	17
Mercury, ug/L	0.025	0.045	0.10[7]	0.554
alpha-BHC, ug/L	0.013	0.026	(5)	0.04
Dieldrin, ug/L	0.00028	0.00014	(5)	0.08

1 final limits as stated in 11/7/01 draft Tentative Order package for City of Burlingame

2 Average monthly effluent limit

3 Maximum daily effluent limit

4 Data set timeframe for metals is January 1998-July 2001 and April 1997 through July 1999 for organics.

5 Only 1 value detected above detection limits in April 1997. 7 samples collected between April 1997 and July 1999.

6 MEC = Maximum Effluent Concentration observed in the data set [see Section 1.3 of the SIP]

7 Mean calculated assuming that undetected values were equal to the detection limit.

It is the City's understanding that the water quality-based effluent limits shown in Table 2 are calculated using procedures described in Section 1.4 of the SIP. Background values (maximum or average, as appropriate for the COC in question) were derived from Regional Monitoring Program (RMP) data collected at two Central Bay stations (Yerba Buena Island and Richardson Bay). Dilution values used in the calculation of water-quality-based effluent limits were as follows:

- Dilution = 10:1 for non-bioaccumulative pollutants (copper).
- Dilution = zero for 303(d)-listed and bioaccumulative pollutants (mercury, alpha-BHC, and dieldrin).

COMPLIANCE WITH FINAL WATER QUALITY-BASED EFFLUENT LIMITS FOR CONSTITUENTS OF CONCERN

As shown in Table 2, based upon current treatment plant performance as measured using WWTP effluent, the City is unlikely to be able to immediately comply with proposed final effluent limits for the four COCs. As a result, interim effluent limits and a compliance schedule to attempt to meet final limits should be granted in the new Burlingame NPDES permit.

Burlingame WWTP effluent characteristics for copper indicate that immediate compliance with the final effluent limits assigned to Burlingame is unlikely. The MEC concentration would result in permit violations at the proposed AMEL. Therefore, interim effluent limits for copper and a compliance schedule to attempt to meet final copper limits should be granted in the new NPDES permit.

Burlingame WWTP effluent characteristics for mercury indicate that immediate compliance with the final effluent limits assigned to Burlingame is unlikely. The MEC concentration would result in permit violations at the proposed AMEL and MDEL. Therefore, interim effluent limits for mercury

and a compliance schedule to attempt to meet final mercury limits should be granted in the new NPDES permit.

Effluent data for alpha-BHC is limited (only 7 samples) with the most recent sample taken 2 years ago in 1999. The MEC is based on the only detected value (i.e., 0.04 µg/L) of these 7 samples. This sample with a detected value dates back to 1997. With no recent data available, there is no way to determine if the City will be able to comply with the proposed effluent limit. Therefore, rather than imposing a final or interim limit, the new NPDES permit should require additional monitoring to determine the levels of alpha-BHC (if any) in the City's effluent. Until more information regarding alpha-BHC levels in the WWTP effluent is available, the City does not consider it a prudent or effective use of public funds to implement a new pollution prevention program for alpha-BHC.

Effluent data for dieldrin is limited (only 7 samples) with the most recent sample taken 2 years ago in 1999. The MEC is based on the only detected value (i.e., 0.08 µg/L) of these 7 samples. This sample with a detected value dates back to 1997. With no recent data available, there is no way to determine if the City will be able to comply with the proposed effluent limit. Therefore, rather than imposing a final or interim limit, the new NPDES permit should require additional monitoring to determine the levels of dieldrin (if any) in the City's effluent. Until more information regarding dieldrin levels in the WWTP effluent is available, the City does not consider it a prudent or effective use of public funds to implement a new pollution prevention program for dieldrin.

Interim limits requested by the City are listed in Table 3.

TABLE 3

Constituent Of Concern	Interim Effluent Limits[1]	Basis
Copper, ug/L	28.2	Plant performance (see attached memo dated 1/16/02 for calculations)
Mercury, ug/L	0.087	Pooled data for secondary treatment plants
alpha-BHC, ug/L	0.04	Maximum observed effluent concentration
Dieldrin, ug/L	0.08	Maximum observed effluent concentration

REVIEW OF FEASIBILITY TO MEET FINAL EFFLUENT LIMITS FOR THE CONSTITUENTS OF CONCERN

The remainder of this study discusses for copper, mercury, alpha-BHC, and dieldrin the City's current source identification efforts, the City's current pollution prevention efforts, and the City's proposed future pollution prevention efforts.

Burlingame's Source Identification Efforts for the COCs

Copper

Copper has been identified as a constituent of concern based on the previous permit's effluent limits. As a result, the City monitors its influent and effluent for copper monthly. In addition, copper monitoring has been conducted at four key city locations. Two locations are used to characterize commercial/industrial discharges. The other locations are in residential areas. This

monitoring has not identified any specific locations in the collection system where copper levels are higher. Other source identification efforts included monitoring and inspection of businesses that may be copper sources including auto repair facilities, printers, metal fabricators, and medical facilities.

Mercury
Mercury has not previously been identified by the City as a COC. Therefore, no specific source identification efforts have been conducted. However, the City has begun to conduct mercury pollution prevention efforts as described below.

Alpha-BHC and Dieldrin
Due to the scarcity of data and lack of a previous permit limit, these organochlorine pesticides have not previously been identified as pollutants of concern. The organics data collected as required by the 1995 permit contain mostly undetected values for these constituents. The one detected value for each constituent were detected during one sampling event in 1997. More monitoring would be necessary to determine if these are outliers or potentially representative of the City's effluent quality.

Burlingame's Prior And Existing Pollution Prevent Efforts for the COCs
The City's pollution prevention program and pretreatment program has a staff of 2. Permitted industries are food related businesses discharging mostly conventional pollutants. The service area is primarily residential. Efforts targeting the COCs are discussed below as well as some general information about the City's pollution prevention program.

Copper
In an effort to identify copper sources, City staff mailed surveys to vehicle service facilities, radiator repair shops and printers in 2000. Preliminary data was gathered to assess the extent of their source reduction activities. A waste audit inspection form for these businesses was developed to be used for site inspections planned for 2001-2002.

Mercury
While mercury has not been specifically identified as a COC for Burlingame, the pollution prevention program has recently begun working with mercury sources in general support of this regional issue. In September 2001, the City conducted a thermometer exchange program with the City of Millbrae. During this event, 1400 thermometers were collected as well as approximately 10 pounds of free mercury, 5 switches and 10 thermostats. In addition, plans are underway to develop a permanent mercury collection program, a fluorescent bulb collection program and to establish a fluorescent bulb storage facility at the treatment plant.

Alpha-BHC and Dieldrin
These constituents have not been previously identified as COCs and therefore, no pollution prevention efforts have been conducted or planned targeting these constituents.

Other noteworthy features of the City's existing pollution prevention program include:
- The City has worked successfully with it's permitted industries to achieve significant reductions in pollutant discharges including:

- See's Candies substantially reduced their BOD and TSS discharges through recycling and pretreatment. Concentration wastewater from equipment cleaning activities is collected and hauled to a local yeast cultivator for reuse. An automatic chemical feed pump was installed to minimize the impact of accidental spills and releases to the sanitary sewer.
- Burlingame has worked with other local businesses to install chemical feed systems to reduce spills and minimize accidental releases.
- Two local businesses, Color Copy and Peninsula Hospital have eliminated the need for film/ photoprocessing by switching to digital systems. Both businesses have eliminated their need for silver recovery and substantially reduced their solvent waste streams as a result.

- The City conducts a grease trap/ interceptor inspection program. In 2000, for example, 138 inspections were conducted. Businesses have a high compliance rate with 90% of the businesses meeting the cleaning and documentation requirements.

- The City plays an active role in the San Mateo County Stormwater Pollution Prevention Program conducting stormwater inspections and illicit discharge inspections in Burlingame, and participating in the Commercial/Industrial Illicit Discharge Subcommittee and the Watershed and Monitoring Subcommittee.

- The City has promoted and coordinated the Bay Front Clean Up for the past three years. This local cleanup day is coordinated by the City's Environmental Compliance Office and Public Works. Local businesses volunteer for the event by distributed flyers and posters and donating refreshments. Students and children are involved in the event through the Parks and Recreation Department. In addition to collecting trash and recyclable materials, this event is used as an educational opportunity through the distribution of pollution prevention brochures. In 2001, participation in the event (held during Pollution Prevention Week) doubled and trash collection volume tripled compared to 2000's totals.

- In addition to the Bay Front Clean Up, the City's pollution prevention program conducts a number of public outreach activities including:
  - Handing out P2 materials at Burlingame Art in the Park in June.
  - Conducting plant tours for local groups including the Chamber of Commerce Business Division in 2001.

- Pollution Prevention Program staff participates in the Bay Area Hazardous Waste Reduction Committee.

- The City cosponsors the Water Awareness Poster Contest with the Bay Area Water Users Association.

Burlingame's Proposed Pollution Prevention Actions for the COCs

Copper

The City is planning to follow-up on the surveys conducted in 2000 by conducting site inspections of the printers, auto repair and radiator repair facilities in Burlingame to be completed in 2002. The

City will compile outreach materials and inspection checklists developed by the BAPPG and individual Bay area agencies for these businesses. Outreach materials will be modified as necessary and distributed during the site visits. Checklists will be compared to the one developed by the City and the City will modify its checklist to incorporate information from other checklists as appropriate. The checklists will be used to assess the extent of BMP implementation at each facility. Businesses will be encouraged to become zero discharge facilities as appropriate. Follow-up visits will be conducted approximately 6 months after the initial visits to determine progress. The same checklist will be used for the follow-up visits to allow the City to measure the effectiveness of this portion of the program.

Other activities targeting copper sources will include determining if copper sulfate root control products are used in the service area and contacting other Peninsula POTWs regarding the quality of the water supply. The use and sale of copper sulfate as a root control product and as a cooling tower additive has been banned in the 9 Bay Area counties. The City will visit hardware stores in the service area to verify that copper sulfate containing products are no longer sold. The City will also review any cooling tower additives in use by its permitted industries to verify that they do not contain copper sulfate or tributyl tin (which has also been banned for this use). If use or sale of copper sulfate is identified at any local stores or permitted industries, the City will conduct follow-up visits within 6 months to verify that copper sulfate is no longer in use. The City will contact other Peninsula agencies and the San Francisco Water Department to determine if there are opportunities to reduce the corrosivity of the water supply.

Mercury

As mentioned above, the City is developing a permanent mercury collection program and plans to establish a fluorescent bulb collection facility at the treatment plant in 2002. Number of items collected and people participating in collection events will be tracked to measure the effectiveness of this effort. The City will also survey dentists regarding amalgam waste management practices and will distribute dental outreach materials developed by the BAPPG. The City will contact other local agencies and the California Dental Association to investigate opportunities to jointly approach the local dental society as a first step to working with local dentists. Following outreach efforts, the City will conduct follow-up site visits or a second survey to assess the effectiveness of its efforts with dentists.

Alpha-BHC and Dieldrin

The City will conduct quarterly monitoring of its influent and effluent for organochlorine pesticides in an effort to determine if they are present in the City's discharges and if there are possible influent sources of the constituents.

Future Actions During the Term of the New Permit Related to General Pollution Prevention Activities

The City's pollution prevention program will continue to participate in public events in the service area such as Burlingame Art in the Park and it will continue to coordinate the Bay Front Clean Up during Pollution Prevention Week.

The City will begin to participate more regularly in BAPPG meetings and related activities oriented towards the reduction of Cu and Hg loads to the Bay in an effort to network with other agencies and to identify opportunities for joint projects.

The City will support increased monitoring of effluent and ambient Bay receiving waters for priority pollutants, which include Cu and Hg, as required by the SIP.

The City will continue to participate in the San Mateo County Stormwater Pollution Prevention Program.

The City will also continue its participation in BAHWRC.

The City will increase it efforts to enhance pollution prevention awareness among its own staff.

The City will review the P2 Task/Activity Outline Form developed by Fairfield-Suisun and use it for the City's program as appropriate.

Future City Actions During the Term of the New Permit Related Only to Cu Pollution Prevention Activities

The City will seek to identify additional controllable non-residential and residential copper sources in the Burlingame service area - including copper water line corrosion, cooling towers, swimming pools and spas.

As noted above, the City will contact other local agencies to identify opportunities to address corrsosivity of the water supply.

As noted above, the City will also verify that copper sulfate containing products are no longer being used or sold in the service area. The City will also conduct inspections of vehicle service facilities and printers to assess BMP implementation, distribute outreach materials, and encourage zero discharge operation as appropriate.

Future City Actions During the Term of the New Permit Related Only to Hg Pollution Prevention Activities

The City will update the inventory of dentist offices and, within the limits of available staff time, conduct field inspections of mercury waste disposal methods. These visits will also be used to distribute brochures, such as those regarding BMPs from the BAPPG and other sources, regarding proper disposal methods for mercury wastes. Information will be collected using the BAPPG's dental inspection checklist.

The City will obtain a copy of the BAPPG's 1-hour long September 2001 PowerPoint presentation to the Northern California Dental Association ["Environmentally Responsible Dentistry: Amalgam Management Techniques"] and determine if it can be adapted for use at local dentist trade group meetings in the service area. As noted above the City will contact other Peninsula agencies to identify opportunities for cooperative efforts when working with the local dental society.

The City will continue its efforts to establish a recycling program for discarded fluorescent lamps containing mercury and a permanent program for collecting other mercury containing consumer products.

To stay within annual budget limitations, the City proposes to phase-in the above noted enhancements to its copper and mercury pollution prevention programs over over a 30 month time period starting in the 1st quarter of 2002. The following schedule for the major new tasks is proposed:

Calendar Year That Task Will Be Conducted by the City	Proposed Major New Pollution Prevention Activity
1Q, 2002	Conduct site visits to vehicle service facilities and printers
3Q, 2002	Conduct follow-up visits to vehicle service facilities and printers
2Q, 2002	Set-up Hg pollution prevention programs including bulb recycling, thermometer recovery/exchange, thermostat recovery
3Q, 2002	Work with other local agencies to conduct presentation to local dental society
1Q, 2003	Inventory/inspections of dental offices + literature distribution
2Q, 2003	Investigate use of copper sulfate by permitted industries and sale of copper sulfate by local hardware stores.
3Q, 2003	Contact local agencies regarding opportunities to address water supply corrosivity
4Q, 2003	Conduct follow-up visits to any users or sellers of copper sulfate
1Q, 2004	Initiate other program enhancements proposed in the Feasibility Study

In addition, as discussed above the City will monitor for alpha-BHC and dieldrin in the treatment plant influent and effluent to further characterize the City's wastewater with respect to these constituents.

If you have any questions or need further information regarding the above final Feasibility Study prepared by the City of Burlingame, please contact me at (650) 342-3727.

Sincerely,

William E. Toci
Plant Manager
US Filter Operating Services, Inc.

Enclosure: Burlingame Copper IPBL Analysis dated 1/16/02

Attachment I.

Fact Sheet For

NPDES Permit And Waste Discharge Requirements

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

1515 CLAY STREET, SUITE 1400

OAKLAND, CA 94612

(510) 622 – 2300 Fax: (510) 622 - 2460

FACT SHEET

for

NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for

CITY OF BURLINGAME

Wastewater Treatment Plant

BURLINGAME, SAN MATEO COUNTY

NPDES Permit No. CA0037788

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ATTACHED TABLES

Table 1 – Discharger's Effluent Data for Conventional Parameters
Table 2 – Discharger's Effluent Data for Priority Pollutants
Table 3 – Basin Plan Water Quality Objectives and CTR Water Quality Criteria.
Table 4 – Reasonable Potential Analysis
Table 5 – Ambient Background Data for RPA and Limit Calculations.
Table 6 – Final Limit Calculations Using SIP Procedures.
Table 7 – Interim Mercury Mass-Based Limit Calculations
Table 8 – Salinity Data

I. PUBLIC NOTICE:

1. Written Comments

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Regional Board no later than 5:00 p.m. on January 21, 2002.

2. Public Hearing

- The draft permit will be considered for adoption by the Regional Board at a public hearing during the Regional Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1st floor Auditorium.
- This meeting will be held on: February 27, 2002, starting at 9:00 am.

3. Additional Information

- For additional information about this matter, interested persons should contact Regional Board staff member: Mr. Ken Katen, Phone: (510) 622-2485; email: kk@rb2.swrcb.ca.gov

This Fact Sheet contains information regarding an application for waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the City of Burlingame for discharges from the City's secondary level wastewater treatment plant. The Fact Sheet describes the factual, legal, and methodological basis for the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the limits.

II. INTRODUCTION

The City of Burlingame (the Discharger) applied to the California Regional Water Quality Control Board, San Francisco Bay Region, (the Regional Board) for reissuance of its NPDES permit for discharge of pollutants from its wastewater treatment plant (the WWTP) into State Waters.

The Discharger owns and operates the WWTP, which provides secondary level treatment of wastewater from domestic, commercial and industrial sources within the City of Burlingame (present population of about 37,000). The treatment process consists of bar screening, vortex grit removal, two primary clarifiers, biological secondary treatment via activated sludge, secondary clarification, and chlorination. Treated effluent flows via pipeline to the North Bayside System Unit (NBSU) dechlorination facility. In transit or at the NBSU dechlorination facility, treated effluent is combined with effluent from the cities of Millbrae, South San Francisco, and San Bruno and industrial and sanitary wastewater from San Francisco International Airport. The combined effluent is dechlorinated prior to discharge to Lower San Francisco Bay. Treated wastewater is discharged through the NBSU outfall to waters of Lower San Francisco Bay through a submerged deepwater outfall (lat. 37°39'55", long. 122°21'41"). The U.S. Environmental Protection Agency (the U.S. EPA) and the Regional Board have classified the WWTP as a major Discharger and a deep water discharge. The plant has an average dry weather flow design capacity of 5.5 million gallons per day (MGD) and a peak wet weather secondary treatment capacity of 16 MGD. The discharger has a primary treatment capacity of 25 MGD and disinfection capacity of 20 MGD. During wet weather operations, the aeration basins and secondary clarifiers may be bypassed, with the final effluent being a blend of disinfected, primary-treated effluent and disinfected, secondary-treated effluent.

Blending is done to avoid hydraulic overload of the activated sludge process and associated solids inventory washout. The plant presently discharges an average dry weather flow of 3.56 MGD, an annual average flow of 4.08 MGD, and maximum wet weather flow rate of 14.17 MGD (1999 data).

The receiving waters for the subject discharges are the waters of Lower San Francisco Bay. Beneficial uses for the Lower San Francisco Bay receiving water, as identified in the Basin Plan and based on known uses of the receiving waters in the vicinity of the discharge, are:

- Industrial Service Supply
- Navigation
- Water Contact Recreation
- Non-contact Water Recreation
- Ocean Commercial and Sport Fishing
- Wildlife Habitat
- Preservation of Rare and Endangered Species
- Fish Migration
- Shellfish Harvesting
- Estuarine Habitat

Receiving Water Salinity

The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance (Basin Plan, pp. 4 – 13). The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance. The receiving waters for the subject discharge are the waters of Lower San Francisco Bay. Regional Board staff evaluated RMP salinity data from the three nearest receiving water stations, Alameda, Oyster Point and San Bruno Shoal, for the period February 1996 – August 1999 (see **Table 8, attached)**. During that period, the receiving water's minimum salinity was 12 parts per thousand (ppt) its maximum salinity was 31.4 ppt, and its average salinity was 23.4 ppt. These data are all well above both the Basin Plan and CTR thresholds for salt water; therefore the limits in this Order are based on salt water criteria.

III. DESCRIPTION OF EFFLUENT

Board Order No. 95-208, as amended by Order 98-117 (collectively the previous permit), presently regulates the discharge from the WWTP. The Discharger's treated wastewater has the characteristics summarized in Table A. For all parameters except organic pollutants - other than phenol and polynuclear aromatic hydrocarbons (PAHs) – the Table A data represent at least monthly monitoring

performed from January 1998 through July 2001. For organic pollutants - other than phenol and PAHs – the previous permit required the Discharger to collect and analyze five samples for selected organic parameters during the permit's term. Those samples were collected from 1997 to1999. Results for detected organic constituents are included in Table A. All other organic constituents were not detected. The average values in Table A reflect the averages of only the detected values for each parameter. Where a parameter was only detected once, the value is included as both the average and maximum.

Table A. Summary of Effluent Data for Outfall E001

Constituent	Average	Maximum
pH, range min/max (s.u.)	7.0	8.1
BOD_5 (mg/L)	13	74 (29)[1]
TSS (mg/L)	13	101 (48)[2]
Arsenic (µg/L)	1.66	4.0
Cadmium (µg/L)	0.07	0.07
Chromium (µg/L)	1.73	4.7
Copper (µg/L)	9.0	17.0
Lead (µg/L)	2.0	4.0
Mercury (µg/L)	0.047	0.554
Nickel (µg/L)	4.6	8.7
Selenium (µg/L)	0.93	1.22
Silver (µg/L)	1.1	4.0
Zinc (µg/L)	38.7	60
Cyanide (µg/L)	5.0	20.5
Phenols (µg/L)	17	48
Total Polynuclear Aromatic Hydrocarbons (µg/L)	5.0[3]	5.0[3]
Total Oil and Grease (mg/L)	47	210
Chloroform (µg/L)	3.6	6.0
Methylene Chloride (µg/L)	9.2	9.2
Toluene (µg/L)	0.5	0.5
Alpha-BHC (µg/L)	0.04	0.04
Dieldrin (µg/L)	0.075	0.075

Footnotes for Table A:

1. Maximum BOD of 74 mg/L reported in January 1999, possibly an unusually high result (next highest was 29 mg/L).

2. Maximum TSS of 101 mg/L reported in January 1999, possibly an unusually high result (next highest was 48 mg/L)

3. During the period January 1997 to December 1999, total PAHs were detected in the Discharger's effluent at 0.28 µg/L, 5.0 µg/L, 0.25 µg/L, and 0.20 µg/L in March 1997, July 1997, January 1998 and May 1998, respectively. Average total PAHs are not calculated for this period.

IV. GENERAL RATIONALE

The following documents are the bases for the requirements contained in the proposed Order, and are referred to under the specific rationale section of this Fact Sheet.

- Federal Water Pollution Control Act, as amended (the CWA).
- Code Federal of Regulations, Title 40 - Parts 122-129 (40 CFR Parts 122 - 129) - Protection of Environment, Chapter 1, Environmental Protection Agency, Subchapter D, Water Programs.
- The Regional Board's *Water Quality Control Plan, San Francisco Bay Basin(Region 2)* (the Basin Plan). The Basin Plan defines beneficial uses and contains WQOs for waters of the State within the San Francisco Bay region, including Lower San Francisco Bay. The Regional Board adopted the Basin Plan on June 21, 1995 , State Water Resources Control Board (the State Board) approved it on July 20, 1995 the Office of Administrative Law approved it on November 13, 1995.
- California Toxics Rule (the CTR), Federal Register, Vol. 65, No. 97, May 18, 2000 .
- National Toxics Rule (the NTR) 57 FR 60848, December 22, 1992, as amended .
- The State Board's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Policy, or SIP).
- the U.S. EPA's 1986 *Quality Criteria for Water, 440/5-86-001*,.
- The U.S. EPA's January 1986 *Ambient Water Quality Criteria for Bacteria – 1986*, 440/5-84-002,.

V. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the proposed Order are discussed as follows:

1. Recent Plant Performance

Section 402(o) of the CWA and 40 CFR 122.44(l) require that water quality-based effluent limits (WQBELs) in re-issued permits be at least as stringent as in the previous permit. The SIP specifies that interim effluent limitations, if required, must be based on current treatment facility performance or on existing permit limitations whichever is more stringent. Regional Board staff used best professional judgment (BPJ) to evaluate recent plant performance. Effluent monitoring data collected from 1998 to 2001 are considered representative of recent plant performance, based on the following rationale:

- It accounts for flow variation due to wet and dry years; and
- For most of the organic pollutants, 3 years of data were used as this provides an adequate set of effluent data for determining their reasonable potential.

2. Impaired Water Bodies in 303(d) List

The U.S. EPA Region 9 office approved the State's 303(d) list of impaired waterbodies on May 12, 1999. The list was prepared in accordance with Section 303(d) of the CWA to identify specific water bodies where it is not expected water quality standards will be met after implementation of technology-based effluent limitations on point sources. The current 303(d) list includes Lower San Francisco Bay as impaired by copper, mercury, nickel, exotic species, total PCBs, dioxin and furan compounds, chlordane, DDT, dieldrin, diazinon, and dioxin-like PCBs.

The SIP requires final effluent limits for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDL) and wasteload allocation (WLA) results. The SIP and federal regulations also require that final concentration limits be included for all pollutants demonstrated to have reasonable potential to cause or contribute to exceedence of water quality objectives (have reasonable potential). The SIP requires permits to establish interim performance-based concentration limits (concentration-based IPBLs), and performance-based mass limits for bioaccumulative pollutants, where the Discharger has demonstrated infeasibility to meet the final WQBELs, together with a compliance schedule for attainment of the final WQBELs. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control in these cases.

3.Basis for Prohibitions

a) Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the Basin Plan, previous permit and BPJ.

b) Prohibition A.2 (10:1 dilution): This prohibition is based on the Basin Plan. The Basin Plan prohibits discharges not receiving 10:1 dilution (Chapter 4, Discharge Prohibition No. 1). The Basin Plan also identifies exceptions that may be granted under certain conditions.

c) Prohibition A.3 (no bypass): This prohibition is based on the Basin Plan. The Basin Plan prohibits the discharge of partially treated and untreated wastes (Chapter 4, Discharge Prohibition No.15). This prohibition is based on general concepts contained in Sections 13260 through 13264 of the California Water Code that relate to the discharge of waste to State waters without filing for and being issued a permit. Under certain circumstances, as stated in 40 CFR 122.41(m)(4), the facilities may bypass waste streams in order to prevent loss of life, personal injury, or severe property damage, or if there were no feasible alternatives to the bypass and the Discharger submitted notices of the anticipated bypass.

d) Prohibition A.4 (flow limit): This prohibition is based on the reliable treatment capacity of the plant. Exceedence of the treatment plant's average dry weather flow design capacity of 5.5 MGD may result in lowering the reliability of achieving compliance with water quality requirements, unless the Discharger demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR 122.41(l).

e) Prohibition A.5 (no stormwater pollution, toxic and deleterious substances, contamination): This prohibition is based on the Basin Plan to protect beneficial uses of the receiving water from un-permitted discharges, and the intent of sections 13260 through 13264 of the California Water Code relating to the discharge of waste to State Waters without filing for and being issued a permit.

4. Basis for Effluent Limitations

a) Effluent Limitations B.1 (Discharges to Lower San Francisco Bay; listed below):

Permit Limit	Parameter	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
B.1.a.	Biochemical Oxygen Demand (BOD)	mg/L	30	45	--	--
B.1.b.	Total Suspended Solids (TSS)	mg/L	30	45	--	--
B.1.c.	Oil & Grease	mg/L	10	--	20	--
B.1.d.	Settleable Matter	ml/L-hr	0.1	--	0.2	--
B.1.e.	Total Chlorine Residual[1]	mg/L	--	--	--	0.0
B.2.	pH	>6.0, <9.0				
B.3.	BOD and TSS Removal	% Monthly average, minimum 85% removal				
B.4.	Fecal Coliform[2]	MPN/100 ml	200	--	400	

Footnotes to effluent limitations:

1. Requirement defined as below the limit of detection in the latest edition of "Statistical Methods for Examination of Water and Wastewater." Compliance with this limitation must be demonstrated at the NBSU joint dechlorination facility.

2. The fecal coliform limits are imposed as a 5-day geometric mean limit of 200 MPN/100mL and 90th percentile limit of 400 MPN/100mL as effluent limits.

b) Effluent Limitation B.1.a-e limits are technology-based limits representative of and intended to ensure adequate and reliable secondary level wastewater treatment. These limits are based on the Basin Plan (Chapter 4, page 4-8, and Table 4-2, at page 4-69). These limits are unchanged from the existing permit, except for the addition of oil and grease. All limits apply independently to the discharge to Lower San Francisco Bay.

c) BOD and TSS, 30 mg/L monthly average and 45 mg/L weekly average (Effluent Limitation B.1.a and b): These are standard secondary treatment requirements, and existing permit effluent limitations that are based on Basin Plan requirements, derived from federal requirements (40 CFR 133.102). With the exception of January 1999, the facility has demonstrated compliance by existing plant performance.

d) Oil & Grease, Settleable Matter and Total Chlorine Residual: Standard secondary treatment requirements, and existing permit effluent limitations, based on Basin Plan requirements.

e) Effluent Limitation B.2 (pH): The pH limit is based on the Basin Plan (Table 4-2, pg. 4 – 69) and the excursion allowance is based on 40 CFR 133.102, which applies to indirect industrial dischargers. Based on Regional Board staff's best professional judgement, the excursion allowance is extended to the Discharger.

f) Effluent Limitation B.3 (BOD and TSS monthly average 85 percent removal): These are standard secondary treatment requirements (Table 4-2, pg. 4 – 69), and existing permit effluent limitations based on Basin Plan requirements, derived from federal requirements (40 CFR 133.102; definition in 133.101). Compliance has been demonstrated by existing plant performance for ordinary flows (dry weather flows and most wet weather flows). During the past 3 years, the Discharger has consistently met these removal efficiency limits.

g) Effluent Limitation B.4 (Fecal Coliform): The purpose of this effluent limitation is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters.

Effluent limits are based on water quality objectives for bacteriological parameters for receiving water beneficial uses. Water quality objectives are given in terms of parameters which serve as surrogates for pathogenic organisms. The traditional parameter in this regard is coliform bacteria, either as total coliform or as fecal coliform. The Basin Plan's Table 4-2 (pg. 4 – 69) and its footnotes allow fecal coliform limitations to be substituted for total coliform limitations provided that the Discharger conclusively demonstrates "through a program approved by the Regional Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving waters". Order No. 98-117 amended the Discharger's permit and those of other Dischargers through the NBSU to replace total coliform limits with fecal coliform limits. Based on limited contact recreation in the vicinity of the discharge, this order provides a 5 day geometric mean fecal coliform WQO of 200 MPN/100mL and 90th percentile limit of 400 MPN/100mL. Studies have shown that fecal coliform levels in the wastewater discharge do not affect the historic south Foster City shellfish harvesting area.

h) Effluent Limitation B.5 (Whole Effluent Toxicity) The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limits are necessary to ensure that this objective is protected. The acute toxicity limit is based on the Basin Plan (Table 4-4, pg. 4 – 70).

i) Effluent Limitation B.6 (Chronic Toxicity): The chronic toxicity limit is based on the Basin Plan's narrative toxicity definition on Page 3 – 4, and is consistent with the SIP requirements. The Discharger performed two screening phases of chronic toxicity monitoring prior to the application of permit renewal. The results of the Phase II study indicated that mysid shrimp appeared to be the most sensitive species.

j) Effluent Limitation B.7 (Toxic Substances):

1. Reasonable Potential Analysis (RPA):

a. 40 CFR 122.44(d)(1)(i) specifies that permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard" (have reasonable potential). Thus, the fundamental step in determining whether or not a WQBEL is required is to assess a pollutant's reasonable potential of causing or contributing to an excursion above its applicable water quality objective or criterion. The following section describes the reasonable potential analysis and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.

i) *WQOs and WQCs*: The RPA involves the comparison of effluent data with appropriate WQOs including narrative toxicity objectives in the Basin Plan and the applicable WQCs in the CTR/NTR (collectively WCOs). The Basin Plan objectives and CTR criteria are shown in **Table 3, attached (WQOs and WQCs)**.

ii) *Methodology*: RPA is conducted using the method and procedures prescribed in Section 1.3 of the SIP. Board staff and the Discharger have analyzed the effluent data to determine if the discharge has reasonable potential. **Table 4, attached**

(Reasonable Potential Analysis), shows the step-wise process described in Section 1.3 of the SIP.

b. *Effluent and background data*: The RPA is based on effluent data collected by the Discharger since 1998 for metals, mercury, and cyanide and on organic pollutant effluent data collected from 1997 through 2000, as depicted in **Table 2, attached (Priority Pollutant Data)**, attached to this Fact Sheet. Water-quality data collected from San Francisco Bay at the Yerba Buena Island and Richardson Bay monitoring stations through the Regional Monitoring Program in 1993-1998 were reviewed to determine the maximum observed background values - see Table 5, attached (Ambient Background).

i. RPA determination: The RPA results are shown in Table B, below (as well as in Table 3 (RPA), attached to this Fact Sheet).For comparison, the previous Permit's effluent limitations for toxic pollutants are depicted in Table D, below. Pollutants with reasonable potential were copper, nickel, mercury, silver, zinc, cyanide, alpha-BHC, 4,4-DDE, and dieldrin.

Table B. Summary of Reasonable Potential Results

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Governing WQO (ug/L)	Maximum Background (µg/L)	RPA Results[2]
2	Arsenic	4.0	36	2.22	N
4	Cadmium	0.07	9.3	0.13	N
5b	Chromium (VI)	4.7	50	4.4	N
6	**Copper**	**17.0**	**3.7**	**2.45**	**Y**
7	Lead	4.0	5.6	2.38	N
8	**Mercury**	**0.554**	**0.025**	**0.0064**	**Y**
9	**Nickel**	**8.7**	**7.1**	**5.9**	**Y**
10	Selenium	1.22	5	0.19	N
11	**Silver**	**4.0**	**2.3**	**0.068**	**Y**
13	**Zinc**	**60.0**	**58**	**13.3**	**Y**
14	**Cyanide**	**20.5**	**1**	**1.0**	**Y**
16	2,3,7,8-TCDD (Dioxin)	NA	1.4E-08	NA	Ub,Ud
17	Acrolein	NA	780	NA	Ub,Ud
18	Acrylonitrile	NA	0.66	NA	Ub,Ud
19	Benzene	1.3	71	NA	Ub
20	Bromoform	0.5	360	NA	Ub
21	Carbon Tetrachloride	1.0	4.4	NA	Ub
22	Chlorobenzene	1.0	21000	NA	Ub
23	Chlordibromomethane	0.5	34	NA	Ub
24	Chloroethane	1.0	N/A	NA	Ub, Uo
25	2-Chloroethylvinyl Ether	1.0	N/A	NA	Ub, Uo
26	Chloroform	6.0	N/A	NA	Ub, Uo
27	Dichlorobromomethane	0.5	46	NA	Ub
28	1,1-Dichloroethane	1.0	N/A	NA	Ub, Uo
29	1,2-Dichloroethane	1.0	99	NA	Ub
30	1,1-Dichloroethylene	NA	3.2	NA	Ub,Ud
31	1,2-Dichloropropane	1.0	39	NA	Ub
32	1,3-Dichloropropylene	U	1700	NA	Ub,Ud
33	Ethylbenzene	1.0	29000	NA	Ub

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Governing WQO (ug/L)	Maximum Background (µg/L)	RPA Results[2]
34	Methyl Bromide	NA	4000	NA	Ub,Ud
35	Methyl Chloride	NA	N/A	NA	Ub,Uo,Ud
36	Methylene Chloride	9.2	1600	NA	Ub
37	1,1,2,2-Tetrachloroethane	1.0	11	NA	Ub
38	Tetrachloroethylene	NA	8.85	NA	Ub,Ud
39	Toluene	0.5	200000	NA	Ub
40	1,2-Trans-Dichloroethylene	NA	140000	NA	Ub,Ud
41	1,1,1-Trichloroethane	1.0	N/A	NA	Ub, Uo
42	1,1,2-Trichloroethane	1.0	42	NA	Ub
43	Trichloroethylene	NA	81	NA	Ub,Ud
44	Vinyl Chloride	1.0	525	NA	Ub
45	Chlorophenol	5.0	400	NA	Ub
46	2,4-Dichlorophenol	5.0	790	NA	Ub
47	2,4-Dimethylphenol	5.0	2300	NA	Ub
48	2-Methyl-4,6-Dinitrophenol	NA	765	NA	Ub,Ud
49	2,4-Dinitrophenol	10.0	14000	NA	Ub
50	2-Nitrophenol	5.0	NA	NA	Ub, Uo
51	4-Nitrophenol	10.0	NA	NA	Ub, Uo
52	3-Methyl-4-Chlorophenol	NA	NA	NA	Ub,Uo,Ud
53	Pentachlorophenol	1.0	7.9	NA	Ub
55	2,4,6-Trichlorophenol	1.0	6.5	NA	Ub
56	Acenaphthene[3]	5.0	2700	0.0015	N
57	Acenephthylene[3]	5.0	NA	0.00053	Uo
58	Anthracene[3]	5.0	110000	0.0005	N
59	Benzidine	20.0	0.00054	NA	Ub,U(dl)
60	Benzo(a)Anthracene[3]	5.0	0.049	0.0053	U(dl)
61	Benzo(a)Pyrene	NA	0.049	0.0025	Ud
62	Benzo(b)Fluoranthene[3]	5.0	0.049	0.0046	U(dl)
63	Benzo(ghi)Perylene[3]	5.0	NA	0.006	Uo
64	Benzo(k)Fluoranthene[3]	5.0	0.049	0.0015	U(dl)
65	Bis(2-Chloroethoxy)Methane	5.0	NA	NA	Ub, Uo
66	Bis(2-Chloroethyl)Ether[3]	5.0	1.4	NA	Ub,U(dl)
67	Bis(2-Chloroisopropyl)Ether	5.0	170000	NA	Ub
68	Bis(2-Ethylhexyl)Phthalate	25.0	5.9	NA	Ub,U(dl)
69	4-Bromophenyl Phenyl Ether	5.0	NA	NA	Ub, Uo
70	Butylbenzyl Phthalate	5.0	5200	NA	Ub
71	2-Chloronaphthalene	5.0	4300	NA	Ub
72	4-Chlorophenyl Phenyl Ether	5.0	NA	NA	Ub, Uo
73	Chrysene[3]	5.0	0.049	0.0041	U(dl)
74	Dibenzo(a,h)Anthracene[3]	5.0	0.049	0.0006	U(dl)
75	1,2 Dichlorobenzene	1.0	17000	NA	Ub
76	1,3 Dichlorobenzene	1.0	2600	NA	Ub
77	1,4 Dichlorobenzene	1.0	2600	NA	Ub
78	3,3[1]-Dichlorobenzidine	25.0	0.077	NA	Ub, U(dl)
79	Diethyl Phthalate	5.0	120000	NA	Ub
80	Dimethyl Phthalate	5.0	2900000	NA	Ub
81	Di-n-Butyl Phthalate	25.0	12000	NA	Ub

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Governing WQO (ug/L)	Maximum Background (µg/L)	RPA Results[2]
82	2,4-Dinitrotoluene	5.0	9.1	NA	Ub
83	2,6-Dinitrotoluene	5.0	NA	NA	Ub,Uo
84	Di-n-Octyl Phthalate	5.0	NA	NA	Ub,Uo
85	1,2-Diphenylhydrazine	NA	0.54	NA	Ub, Ud
86	Fluoranthene[3]	**1.0**	370	0.007	N
87	Fluorene[3]	5.0	14000	0.002078	N
88	Hexachlorobenzene	0.02	0.00077	NA	Ub, U(dl)
89	Hexachlorobutadiene	25.0	50	NA	Ub
90	Hexachlorocyclopentadiene	5.0	17000	NA	Ub
91	Hexachloroethane	5.0	8.9	NA	Ub
92	Indeno(1,2,3-cd) Pyrene[3]	5.0	0.049	0.004	U(dl)
93	Isophorone	25.00	600	NA	Ub
94	Naphthalene[3]	5.0	NA	0.00229	Uo
95	Nitrobenzene	5.0	1900	NA	Ub
96	N-Nitrosodimethylamine	25.0	8.1	NA	Ub, U(dl)
97	N-Nitrosodi-n-Propylamine	5.0	1.4	NA	Ub, U(dl)
98	N-Nitrosodiphenylamine	5.0	16	NA	Ub
99	Phenanthrene[3]	5.0	NA	0.0061	Uo
100	Pyrene[3]	5.0	11000	0.0051	N
101	1,2,4-Trichlorobenzene	5.0	NA	NA	Ub, Uo
102	Aldrin	0.01	0.00014	NA	Ub, U(dl)
103	**alpha-BHC**	**0.04**	**0.013**	**NA**	**Y**
104	beta-BHC	0.01	0.046	NA	Ub
105	gamma-BHC	0.01	0.063	NA	Ub
106	delta-BHC	NA	NA	NA	Ub,Uo,Ud
107	Chlordane	0.02	0.00059	0.00018	U(dl)
108	4,4-DDT	0.01	0.00059	0.000066	U(dl)
109	**4,4-DDE**	**0.01**	**0.00059**	**0.00069**	**Y**
110	4,4-DDD	0.01	0.00084	0.000313	U(dl)
111	**Dieldrin**	**0.08**	**0.00014**	**0.000264**	**Y**
112	alpha-Endosulfan	0.01	0.0087	0.000031	U(dl)
113	beta-Endosulfan	0.01	0.0087	0.000069	U(dl)
114	Endosulfan Sulfate	0.01	240	0.000011	N
115	Endrin	0.01	0.0023	0.000016	U(dl)
116	Endrin Aldehyde	0.01	0.81	NA	Ub
117	Heptachlor	0.01	0.00021	0.000019	U(dl)
118	Heptchlor Epoxide	0.01	0.00011	0.000094	U(dl)
119-125	PCBs	NA	0.00017	NA	Ub, Ud
126	Toxaphene	0.10	0.0002	NA	Ub, U(dl)
	Tributyltin	NA	0.01	NA	Ub,Ud

1) Maximum Effluent Concentration (MEC) in bold is the actual detected MEC, otherwise the MEC shown is the minimum detection level (if any of reported DLs < WQO).

NA = Not Available (there is not monitoring data for this constituent).

2) RP =Yes, if either MEC or Background > WQO.
RP = No, if both MEC or background < WQO.

RP = Ud (undetermined due to lack of effluent monitoring data).
RP = Ub (undetermined due to lack of background data) if MEC < WQO and background is not available.
RP = U(dl) (undetermined due to high detection levels)
RP = Uo (undetermined if no objective promulgated).

3) For these PAHs, individual constituent monitoring was not required by the previous order. A maximum effluent concentration of 5.0 µg/L was reported for total PAHs in July 1997. Individual PAH results are summarized in Table C, below.

Table C. Polynuclear Aromatic Hydrocarbons

CTR Number	Constituent	WQO[1], µg/L	MEC[2], µg/L	Background, µg/L	RP[3]
60	Benzo(a)Anthracene	0.049	N/A	0.0053	U
61	Benzo(a)Pyrene	0.049	N/A	0.0025	U
62	Benzo(b)Fluoranthene	0.049	N/A	0.0046	U
64	Benzo(k)Fluoranthene	0.049	N/A	0.0015	U
73	Chrysene	0.049	N/A	0.0041	U
74	Dibenzo(a,h)Anthracene	0.049	N/A	0.0006	U
92	Indeno(1,2,3-cd) Pyrene	0.049	N/A	0.004	U

Footnotes for Table C:

1. WQO based on the numeric WQO for protection of human health through consumption of organisms only.
2. PAH data for individual PAH compounds are not available for the period January 1997 to December 1999.
3. U = Undetermined. All RPA results are undetermined due to lack of data on individual PAH compounds.

Table D. Previous Permit Limits for Toxic Pollutants

Constituent CTR #	Constituent Name	Monthly Average, µg/L	Daily Average, µg/L
2	Arsenic	---	200
4	Cadmium	---	30
5b	Chromium (VI)	---	110
6	Copper	---	37
7	Lead	---	53
8	Mercury	0.21	1
9	Nickel	---	65
10	Selenium	---	50
11	Silver	---	23
13	Zinc	---	580
14	Cyanide	---	10
	PAHs	0.31	150
	Phenols		500

ii. *Organic constituents with limited data*: Reasonable potential could not be determined for a majority of the organic priority or toxic pollutants due to

- applicable WQOs are lower than current analytical techniques can measure,
- applicable WQOs or WQCs, or
- adequate background data are absent.

iii. *Pollutant Monitoring.* The Discharger is required to initiate or continue monitoring for those pollutants in this category using analytical methods that provide the best practicable detection limits. If detection limits improve such that it becomes feasible to evaluate compliance with applicable water quality criteria, these pollutants' RPAs will be reevaluated to determine if there is a need to add numeric effluent limits to the permit, or to continue monitoring. Additional sampling for Constituents in the SIP is addressed in the Regional Board staff's August 6, 2001 letter "Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (the August 6, 2001 letter). As required by the letter, the Discharger is required to initiate or continue to monitor for those pollutants in this category using analytical methods that provide the best detection limits reasonably feasible. If detection limits improve to the point where it is feasible to evaluate compliance with applicable water quality criteria, these pollutants' RPA will be reevaluated in the future to determine whether there is a need to add numeric effluent limits to the permit or to continue monitoring.

iv. *Pollutants with no reasonable potential:* The Order does not contain WQBELs for constituents that do not have reasonable potential. However, monitoring for those pollutants is still required, as specified in the Order's Self-Monitoring Program and the Regional Board's August 6, 2001 letter formally requiring (pursuant to Section 13267 of the California Water Code) the Discharger to conduct ambient background monitoring for those constituents not currently sampled by the RMP and to provide this technical information to the Regional Board. If concentrations or mass loads of these constituents are found to have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to the receiving water's quality.

v. *Permit Reopener:* The permit includes a reopener provision to allow adding numeric effluent limits for any constituent that in the future exhibits reasonable potential. That determination will be made by the Regional Board, based on monitoring results.

2. Final Water Quality-Based Effluent Limits (WQBELs): The final effluent limitations in the Permit's Table 7, attached, Toxic Substances, are water quality-based. They were developed and set for the toxic and priority pollutants that were determined to have reasonable potential. Final effluent limitations were calculated based on appropriate WQOs, background concentrations at two central bay monitoring locations (Yerba Buena Island and Richardson Bay), a maximum dilution ratio of 10:1 (for non-bioaccumulative pollutants), and the appropriate procedures specified in Section 1.4 of the SIP (See Table 6, attached of this Fact Sheet). For the purpose of the Proposed Order, final WQBELs refer to all non-interim effluent limitations. The WQO used for each pollutant with RP is indicated in Table E, below, as well as in Table 3, attached (WQOs).

Table E. Water Quality Objectives/Criteria for Pollutants with RP

Pollutant	Chronic WQO (µg/L)	Acute WQO (µg/L)	Basis of Lowest WQO Used in RP
Copper	3.7	5.8	CTR
Mercury	0.025	2.1	Basin Plan
Nickel	7.1	140	Basin Plan
Silver	-	2.3	Basin Plan
Zinc	58	170	Basin Plan
Cyanide	1	5	CTR/Basin Plan
alpha-BHC	0.013	-	CTR
4,4-DDE	0.00059	-	CTR
Dieldrin	0.00014	-	CTR

3. Interim Limits: In this Order, an interim performance-based limit (IPBL) was derived for cyanide because adequate ambient background data to compute final WQBELs' for cyanide are not available. Section 2.2.1 of the SIP requires interim effluent concentration limitations to be based on either the existing limit or the recent plant performance, whichever is more stringent. This Permit continues the previous permit's cyanide limitation of 10.0 µg/L as the interim limit, until the conclusion of the cyanide data-gathering period referenced in the Permit.

   This Order also sets interim limits for copper, mercury, alpha-BHC and dieldrin based on the Discharger's January 18, 2002 Feasibility Study, which demonstrated that immediate compliance with the WQBELs for those pollutants is infeasible. The interim limit for copper is an IPBL based on statistical analysis of the WWTP's plant performance, and the interim limit for mercury is based on a statistical analysis of pooled ultraclean mercury data for POTWs throughout the San Francisco Bay Region. The interim limits for alpha-BHC and dieldrin are based on the Maximum Effluent Concentrations (MECs) for those pollutants because there was only one sample collected for each of them, and only one quantified result for each. These data were inadequate to conduct a statistical analysis of plant performance. Further, the previous permit did not contain limits for these two pollutants. Therefore, based on Regional Board staff's best professional judgement, and consistent with the approach used in similar situations for other NBSU dischargers, the MECs for these two pollutants are used as the interim limits.

4. Compliance Schedules and Infeasibility Analysis

   If the Discharger is unable to immediately comply with the WQBELs contained in this Permit, it is required to demonstrate its infeasibility to immediately comply with these limits by demonstrating the extent to which past pollution prevention efforts have been implemented, as well as measurements of the efforts' effectiveness and future plans for focused pollution prevention efforts.

5. Further Discussion and Rationale for Mercury WQBELs and Mass-Based Effluent Limitations

   As shown in the attached Table 6, attached (Limits), the calculated final average monthly and daily maximum effluent limits for mercury are 0.022 µg/L and 0.038 µg/L, respectively. Due to the limited data set of ultraclean mercury results for this Discharger, it is not possible to accurately predict its ability to immediately comply with these WQBELs. Therefore, based on Regional Board staff's Best Professional Judgement, it is appropriate to set an IPBL for mercury of 0.087 µg/L, based on the statistical analysis of pooled ultraclean mercury for POTWs, as described in the June 11, 2001 staff report referenced in the Order.

The Order also includes an interim mercury mass-based effluent limitation of 0.135 kilograms per month. This mass-based effluent limitation is calculated as shown in Table 7, attached (Mercury Mass Limit), and is based on facility flow and mercury concentration data collected between January 1998 and December 2000. This mass-based effluent limitation will maintain current loadings until a TMDL is established. The final mass -based effluent limitation will likely be based on the WLA contained in the mercury TMDL.

5. Basis for Receiving Water Limitations

a) Receiving water limitations C.1 and C.2 (conditions to be avoided): These limits are based on the previous Order and the narrative/numerical objectives contained in Chapters 2 and 3 of the Basin Plan

b) Receiving water limitation C.3 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

6. Basis for Self Monitoring Program Requirements

The SMP includes monitoring for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. For the most part, the monitoring is the same as required by the previous Order, including the amended requirements for fecal coliform. The BOD influent monitoring frequency for the WWTP is three times per week and TSS monitoring for the influent is five times per week because the Regional Board believes that these levels of performance monitoring are appropriate for large municipal treatment facilities. Current knowledge indicates that TSS is a better indicator of proper functioning for solids removal than settleable solids and therefore, based on Regional Board staff's best professional judgement, settleable matter monitoring is reduced from five times per week in the previous permit to monthly in this one. In addition, the influent BOD and TSS monitoring frequencies are now consistent with effluent monitoring for these parameters. This will allow better evaluation of percent removal efficiency. Monthly metals, mercury, and cyanide monitoring is consistent with the previous order. Monitoring for 4,4-DDE, dieldrin, and alpha-BHC is required to demonstrate compliance with effluent limits. Diazinon and dioxin monitoring are required because these pollutants are listed as causing impairment in Lower San Francisco Bay. Finally, previous monitoring for toxic organic pollutants is replaced by more comprehensive monitoring as demonstrated by participation in the Regional Ambient Monitoring Program.

7. Basis for Sludge Management Practices

These requirements are based on Table 4.1 of the Basin Plan, and 40 CFR 503.

8. Basis for Provisions

a) Provisions 1. (Permit compliance and rescission of previous permit): Time of compliance is based on 40 CFR 122. The basis of the order superseding and rescinding the previous permit order is 40 CFR 122.46.

b) Provision 2. (Cyanide Study and Schedule): This provision, based on SIP Section 1.2 ("Data Requirements and Adjustments") and SIP Section 5.2 ("Site-Specific Objectives"), requires the Discharger to characterize background ambient cyanide concentrations and to participate in developing a site-specific objective for cyanide.

c) Provision 3. (Effluent Characterization Study): This provision is based on the SIP.

d) Provision 4. (Ambient Background Receiving Water Study): This provision is based on the Basin Plan and the SIP.

e) Provision 5. (Pollutant Prevention and Pollutant Minimization Program): This provision is based on the Basin Plan (pp 4 – 25 and 4 – 26) and the SIP (section 2.1, Compliance Schedule).

f) Provision 6. (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limits for acute toxicity will be demonstrated. Conditions include the use of 96-hour bioassays, flow-through bioassays for discharges to Lower San Francisco Bay, the use of fathead minnows and three-spine stickleback as the test species, and use of approved test methods as specified. On February 28, 2003, the Discharger shall change from 3rd to 4th Edition U.S. EPA protocols. These conditions are based on the effluent limits for acute toxicity given in the Basin Plan, Chapter 4, and BPJ.

g) Provision 7. (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocol by which compliance with the Basin Plan narrative water quality objective for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as 'triggers' for initiating accelerated monitoring and toxicity reduction evaluation(s). These conditions apply to the discharges to Lower San Francisco Bay and the numerical values for chronic toxicity evaluation are based on a minimum initial dilution ratio of 10:1. This provision also requires the Discharger to conduct a screening phase monitoring requirement and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may also have been changed during the life of the permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative water quality objective for toxicity, Basin Plan effluent limits for chronic toxicity (Basin Plan, Chapter 4), U.S. EPA and SWRCB Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.

h) Provision 8. (Facility Operations during Wet Weather Conditions): The purpose of these provisions is to ensure that wastewater collection system and treatment facilities are operated in a manner to provide optimal control and treatment of wastewater during wet weather conditions. They are based on BPJ and the Basin Plan.

i) Provisions 9. (Regional Monitoring Program): This provision, which requires the Discharger to continue to participate in the Regional Monitoring Program, is based on the previous Order and the Basin Plan.

j) Provision 10. (Pretreatment Program): The Discharger has implemented and is maintaining a U.S. EPA approved pretreatment program in accordance with Federal pretreatment regulations (40 CFR 403) and the requirements specified in Attachment F "Pretreatment Requirements" and its revisions thereafter.

k) Provision 11. (Optional Mass Offset): This option is provided to encourage the Discharger to implement aggressive reduction of mass loads to Lower San Francisco Bay.

l) Provision 12. (Copper and Nickel Translator Study): This provision allows the Discharger to conduct an optional copper translator study, based on SIP Section 1.4 ("Translator for Metals and

Selenium") and BPJ. This provision is based on the need to gather site-specific information in order to apply a different translator from the default translator specified in the CTR and SIP. Without site-specific data, the default translator of 0.83 has been used with the CTR criterion to obtain a total copper objective of 3.7 µg/L.

m) Provision 13. (Wastewater Facilities, Review and Evaluation, and Status Reports): These provisions are based on the previous Order and the Basin Plan.

n) Provision 14. (Operations and Maintenance Manual, Review and Status Reports): These provisions are based on the Basin Plan, requirements of 40 CFR 122 and the previous permit.

o) Provision 15. (Contingency Plan). The Contingency Plan provision is based on the requirements stipulated in Board Resolution No. 74-10 and the previous permit.

p) Provisions 16. (Annual Status Reports): The Annual Status Reports are based on the previous permit and the Basin Plan.

q) Provision 17. (303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): This provision requires participation in the development of a TMDL or site-specific objective for copper, nickel, mercury, 4,4-DDE, and dieldrin. By January 31 of each year, the Discharger shall submit an update to the Regional Board to document progress made on source control and pollutant minimization measures and development of TMDL or site-specific objective. Regional Board staff shall review the status of TMDL development. The order may be reopened in the future to reflect any changes required by TMDL development.

r) Provision 18. (New Water Quality Objectives): This provision allows future modification of the permit and permit effluent limits as necessary in response to updated water quality objectives that may be established in the future. This provision is based on 40 CFR 123.

s) Provision 19. (Self-Monitoring Program Requirement): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are given in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits (including the Order) issued by the Regional Board. In addition to containing definitions of terms, it specifies general sampling/analytical protocols and the requirements of reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains sampling program specific for the Discharger's WWTP. It defines the sampling stations and frequency, pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Additional constituents, for which no effluent limitations are established, are also required to be monitored to provide data for future determination of their reasonable potential of exceeding the applicable WQOs or WQCs in the receiving water.

t) Provision 20. (Standard Provisions and Reporting Requirements): The purpose of this provision is require compliance with the standard provisions and reporting requirements given in this Board's document titled, Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993, or any amendments thereafter. This document is included as part of the permit as an attachment of the permit. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in 'Standard Provisions', the specifications given in the permit shall

apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.

u) Provisions 21, 22. (Change in Control or Ownership): These provisions are based on 40 CFR 122.61.

v) Provision 23. (Permit Reopener): This provision is based on 40 CFR 123.

w) Provision 24. (NPDES Permit and U.S. EPA concurrence). This provision is based on 40 CFR 123.

x) Provisions 25, 26. (Permit Expiration and Reapplication): These provisions are based on 40 CFR 122.46 (a)

VI. WRITTEN COMMENTS

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Regional Board no later than **5:00 P.M.** on **January 21, 2002.**
- Comments received after this date may not receive full consideration in the formulation of final determinations of permit conditions.
- Comments should be submitted to the Regional Board at the address given on the first page of this fact sheet, and addressed to the attention of: Mr. Ken Katen.

VII. PUBLIC HEARING

- The draft permit will be considered for adoption by the Regional Board at a public hearing during the Regional Board's regular monthly meeting to be held on: February 27, 2002, starting at 9:00 a.m.
- This meeting will be held at:

Main Floor Auditorium
Elihu Harris State Office Building
1515 Clay Street, Oakland, California

VIII. WASTE DISCHARGE REQUIREMENT APPEALS

Any person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Regional Board public hearing.

IX. ADDITIONAL INFORMATION

For additional information about this matter, interested persons should contact the following Regional Board staff member: Mr. Ken Katen, Phone number: (510) 622-2431, or by email at kk@rb2.swrcb.ca.gov.

X. ATTACHED TABLES

Table 1 – Discharger's Effluent Data for Conventional Parameters
Table 2 – Discharger's Effluent Data for Priority Pollutants
Table 3 – Basin Plan Water Quality Objectives and CTR Water Quality Criteria.
Table 4 – Reasonable Potential Analysis
Table 5 – Ambient Background Data for RPA and Limit Calculations.
Table 6 – Final Limit Calculations Using SIP Procedures.
Table 7 – Interim Mercury Mass-Based Limit Calculations
Table 8 – Salinity Data

PARAMETER	LIMIT	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98
Monitoring Point E-001									
Flow Eff Daily Minimum mgd	NA	3.37	3.67	1.72	1.72	1.38	1.31	1.11	0.84
Flow Eff Daily Maximum mgd	NA	12.66	14.77	8.28	7.92	7.78	6.93	6.52	7.11
Flow Eff Daily Average mgd	NA	7.36	9.36	4.55	4.48	4.13	3.91	3.59	3.53
Flow Eff Monthly Total Mgal	NA	228.15	262.2	140.9	134.5	128	117.4	107.8	109.5
BOD 5 Day Inf Monthly Average mg/l	NA	221	145.92	293.13	303.5	267.79	324.39	297.21	316.63
BOD 5 Day Eff Monthly Average mg/l	Max 30	5.39	8.21	8.74	8.25	6.13	5.23	5.91	8.7
BOD 5 Day Eff Monthly Removal %	Min 85	97.12	95.71	96.92	97.14	97.75	98.37	98.05	97.15
Total Suspended Solids Inf Monthly Average mg/l	NA	215.71	150.75	248.13	282.97	269.97	297.7	322	334.81
Total Suspended Solids Eff Monthly Average mg/l	Max 30	10.32	10.85	7.34	9.09	5.76	5.91	6.15	10.47
Total Suspended Solids Eff Monthly Removal %	Min 85	94.72	91.43	96.96	96.51	97.75	97.99	98.05	96.48
Oil and Grease Eff Monthly Average mg/l	NA	<5.00	<8.50	3.5	3	<3.00	10	<5.00	<5.50
Chlorine Residual Eff Instant Maximum mg/l	Max 0								
Chlorine Residual Violation In Minutes Eff Instant Max	NA								
Turbidity Eff Daily Maximum NTU	NA	5.51	6.07	4.44	5.65	4.37	4.46	5.32	7.22
pH Eff Grab Minimum unit	Min 6	7.3	7.3	7.4	7.3	7.3	7.3	7.3	7.3
pH Eff Grab Maximum unit	Max 9	7.3	7.3	7.4	7.3	7.3	7.3	7.3	7.3
Temperature Eff Daily Maximum C	NA	17.2	16.2	19.1	19.6	20.9	22.3	23.7	24.5
Fecal Coliform Eff Grab Maximum mpn/100ml	Max								
Fecal Coliform Eff 5Samp LogMean MPN/100ml	Max 200								
Fecal Coliform Eff 10Samp 90th% mpn/100ml	Max 400								
Total Coliform Eff Daily Maximum mpn/100ml	Max 2400	<67	<91	<48	<57	<223	<61	<22	<65

PARAMETER	LIMIT	Sep-98	Oct-98	Nov-98	Dec-98	Jan-99	Feb-99	Mar-99	Apr-99
Monitoring Point E-001									
Flow Eff Daily Minimum mgd	NA	0.99	1.06	1.23	1.33	1.64	2.85	1.74	1.78
Flow Eff Daily Maximum mgd	NA	7.14	7.79	8.65	7.91	8.44	10.52	8.75	9.08
Flow Eff Daily Average mgd	NA	3.53	3.55	3.92	3.91	4.59	6.28	4.65	4.71
Flow Eff Monthly Total Mgal	NA	105.9	110.1	117.5	121.32	142.3	175.8	144.1	141.2
BOD 5 Day Inf Monthly Average mg/l	NA	362.35	313.73	265.21	286	229.85	200.36	259.68	310.47
BOD 5 Day Eff Monthly Average mg/l	Max 30	7.27	6.1	5.68	7.11	14.51	6.7	6.62	7.02
BOD 5 Day Eff Monthly Removal %	Min 85	97.94	98.04	97.77	97.47	91.16	96.51	97.41	97.55
Total Suspended Solids Inf Monthly Average mg/l	NA	387.14	284.4	290.87	224.42	234.1	210	237.58	286.1
Total Suspended Solids Eff Monthly Average mg/l	Max 30	8.07	7.63	6.51	8.61	14.5	9.75	6.09	8.59
Total Suspended Solids Eff Monthly Removal %	Min 85	97.66	97.24	97.61	96.13	92.98	95.08	97.39	96.8
Oil and Grease Eff Monthly Average mg/l	NA	<38.50	7.15	<6.25	<5.75	<5.75	<8.38	<5.00	<5.00
Chlorine Residual Eff Instant Maximum mg/l	Max 0								
Chlorine Residual Violation In Minutes Eff Instant Max	NA								
Turbidity Eff Daily Maximum NTU	NA	5.7	5.84	4.65	5.57	9.59	5.97	4.48	5.94
pH Eff Grab Minimum unit	Min 6	7.3	7.4	7.3	7.3	7.3	7.3	7.3	7.3
pH Eff Grab Maximum unit	Max 9	7.3	7.4	7.3	7.3	7.3	7.3	7.3	7.3
Temperature Eff Daily Maximum C	NA	24.6	23.2	21.3	18.8	17.8	16.8	18.2	18.9
Fecal Coliform Eff Grab Maximum mpn/100ml	Max								
Fecal Coliform Eff 5Samp LogMean MPN/100ml	Max 200								
Fecal Coliform Eff 10Samp 90th% mpn/100ml	Max 400								
Total Coliform Eff Daily Maximum mpn/100ml	Max 2400	<24	<50	<31	<58	<73	<255	<48	<116

PARAMETER	LIMIT	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99
Monitoring Point E-001									
Flow Eff Daily Minimum mgd	NA	0.97	1.02	1	1.13	1.12	1.09	1.19	1.28
Flow Eff Daily Maximum mgd	NA	7.16	7.03	6.62	6.83	6.8	6.67	7.08	7.1
Flow Eff Daily Average mgd	NA	3.71	3.66	3.55	3.6	3.53	3.51	3.73	3.61
Flow Eff Monthly Total Mgal	NA	115	109.7	110.1	111.7	105.8	108.7	112	112
BOD 5 Day Inf Monthly Average mg/l	NA	391.69	292.27	346.5	340.63	329.27	324.71	319.4	333.4
BOD 5 Day Eff Monthly Average mg/l	Max 30	6.39	6.27	8.78	5.3	5.19	7.52	9.63	12.28
BOD 5 Day Eff Monthly Removal %	Min 85	98.3	97.79	97.46	98.43	98.42	97.64	96.83	96.23
Total Suspended Solids Inf Monthly Average mg/l	NA	323.9	206.24	275.88	329.23	312.24	328.13	316	322.11
Total Suspended Solids Eff Monthly Average mg/l	Max 30	6.58	6.38	6.25	6.32	5.54	8.52	10.69	12.25
Total Suspended Solids Eff Monthly Removal %	Min 85	97.91	96.88	97.92	98.05	98.21	97.39	96.6	96.28
Oil and Grease Eff Monthly Average mg/l	NA	<6.70	<5.00	6	6	<5.00	<5.00	<5.00	<6.50
Chlorine Residual Eff Instant Maximum mg/l	Max 0								
Chlorine Residual Violation In Minutes Eff Instant Max	NA								
Turbidity Eff Daily Maximum NTU	NA	5.19	4.81	4.97	4.77	4.3	5.58	6.56	7.45
pH Eff Grab Minimum unit	Min 6	7.3	7.3	7.3	7.3	7.4	7.3	7.3	7.3
pH Eff Grab Maximum unit	Max 9	7.3	7.3	7.3	7.3	7.4	7.3	7.3	7.3
Temperature Eff Daily Maximum C	NA	20.9	22.4	23.8	24	24	23.4	21.9	19.9
Fecal Coliform Eff Grab Maximum mpn/100ml	Max						<31	<38	<38
Fecal Coliform Eff 5Samp LogMean MPN/100ml	Max 200						27.3	30.1	31.4
Fecal Coliform Eff 10Samp 90th% mpn/100ml	Max 400						50	65	52
Total Coliform Eff Daily Maximum mpn/100ml	Max 2400	<28	<160	<20	24	<20			

PARAMETER	LIMIT	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00
Monitoring Point E-001									
Flow Eff Daily Minimum mgd	NA	1.62	3	2.24	1.44	1.36	1.17	1.31	1.09
Flow Eff Daily Maximum mgd	NA	9.52	11.89	8.69	7.57	7.25	7.01	6.94	6.41
Flow Eff Daily Average mgd	NA	4.83	6.81	4.89	3.95	3.84	3.7	3.66	3.67
Flow Eff Monthly Total Mgal	NA	149.62	197.53	151.6	118.51	118.94	111.08	113.34	113.84
BOD 5 Day Inf Monthly Average mg/l	NA	295.47	165.27	214.72	316.03	275.94	292.18	294.69	290.47
BOD 5 Day Eff Monthly Average mg/l	Max 30	8.56	11.98	12.92	11.39	11.02	10.29	9.54	6.05
BOD 5 Day Eff Monthly Removal %	Min 85	97	92.19	93.79	96.23	96.03	96.38	96.8	97.9
Total Suspended Solids Inf Monthly Average mg/l	NA	269.42	176.79	210.37	334.37	323.23	349.17	350.74	325.94
Total Suspended Solids Eff Monthly Average mg/l	Max 30	9.76	13.17	11.78	10.4	22.72	12.34	11.77	7.55
Total Suspended Solids Eff Monthly Removal %	Min 85	96	91.39	94.31	96.75	92.99	96.46	96.6	97.7
Oil and Grease Eff Monthly Average mg/l	NA	<5.33	8.73	8.1	10.3	<5.50	<6.50	<5.50	<7.50
Chlorine Residual Eff Instant Maximum mg/l	Max 0								
Chlorine Residual Violation In Minutes Eff Instant Max	NA								
Turbidity Eff Daily Maximum NTU	NA	6.16	7.77	7.58	9.31	13.19	8.05	7.11	4.69
pH Eff Grab Minimum unit	Min 6	7.2	7.2	7.3	7.5	7.4	7.5	7.5	7.4
pH Eff Grab Maximum unit	Max 9	7.2	7.2	7.3	7.5	7.4	7.5	7.5	7.4
Temperature Eff Daily Maximum C	NA	18.6	17.7	18.8	21	21.9	23.5	23.9	24.5
Fecal Coliform Eff Grab Maximum mpn/100ml	Max	<35	<20	<28	<39	824	<58	<1003	<22
Fecal Coliform Eff 5Samp LogMean MPN/100ml	Max 200	33.5	20	20.7	31.4	25.5	27.8	139.3	21.4
Fecal Coliform Eff 10Samp 90th% mpn/100ml	Max 400	68	<20	<20	50	<35	<46	1407	843
Total Coliform Eff Daily Maximum mpn/100ml	Max 2400								

PARAMETER	LIMIT	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01
Monitoring Point E-001									
Flow Eff Daily Minimum mgd	NA	1.12	1.25	1.24	1.35	1.39	2.43	1.99	1.44
Flow Eff Daily Maximum mgd	NA	7.05	8.23	7.88	7.41	8.6	9.68	8.56	7.52
Flow Eff Daily Average mgd	NA	3.71	4.04	3.87	3.94	4.52	6.03	4.57	4.25
Flow Eff Monthly Total Mgal	NA	111.43	125.25	116.25	122.06	139.99	168.93	141.69	127.41
BOD 5 Day Inf Monthly Average mg/l	NA	346.78	319.65	305.72	335.5	313.83	251.56	298.54	342.08
BOD 5 Day Eff Monthly Average mg/l	Max 30	8.38	8.47	7.84	9.16	9.96	9.56	9.72	7.97
BOD 5 Day Eff Monthly Removal %	Min 85	97.6	97	97	97	97	96	97	98
Total Suspended Solids Inf Monthly Average mg/l	NA	310.07	315.84	287.67	337.86	337.39	289.68	332.32	383.62
Total Suspended Solids Eff Monthly Average mg/l	Max 30	9.95	9.6	7.41	8.87	12.29	13.48	10.54	9.86
Total Suspended Solids Eff Monthly Removal %	Min 85	96.8	97	97	97	96	95	97	97
Oil and Grease Eff Monthly Average mg/l	NA	<5.00	<5.00	8	<5.00	6	<5.50	<5.00	<5.00
Chlorine Residual Eff Instant Maximum mg/l	Max 0								
Chlorine Residual Violation In Minutes Eff Instant Max	NA								
Turbidity Eff Daily Maximum NTU	NA	6.31	5.96	5.91	5.81	7.25	7.44	7.06	5.87
pH Eff Grab Minimum unit	Min 6	7.4	7.4	7.5	7.6	7.6	7.5	7.5	7.5
pH Eff Grab Maximum unit	Max 9	7.4	7.4	7.5	7.6	7.6	7.5	7.5	7.5
Temperature Eff Daily Maximum C	NA	24.3	23.1	21	19.8	18.1	16.8	18.9	19.9
Fecal Coliform Eff Grab Maximum mpn/100ml	Max	<20	<4	10	6	<6	<13	<11	16
Fecal Coliform Eff 5Samp LogMean MPN/100ml	Max 200	20	4.2	6.1	5.7	4.3	9.6	4.2	14
Fecal Coliform Eff 10Samp 90th% mpn/100ml	Max 400	<20	3	11	14	14	24	7	33
Total Coliform Eff Daily Maximum mpn/100ml	Max 2400								

PARAMETER	LIMIT	May-01	Jun-01	Jul-01
Monitoring Point E-001				
Flow Eff Daily Minimum mgd	NA	1.41	1.39	1.36
Flow Eff Daily Maximum mgd	NA	5.11	6.72	6.37
Flow Eff Daily Average mgd	NA	3.75	3.74	3.75
Flow Eff Monthly Total Mgal	NA	116.18	112.24	116.32
BOD 5 Day Inf Monthly Average mg/l	NA	360.31	326.29	361.86
BOD 5 Day Eff Monthly Average mg/l	Max 30	10.64	12.34	11.24
BOD 5 Day Eff Monthly Removal %	Min 85	97	96	97
Total Suspended Solids Inf Monthly Average mg/l	NA	353.78	345.76	404.5
Total Suspended Solids Eff Monthly Average mg/l	Max 30	12.48	18.25	11.76
Total Suspended Solids Eff Monthly Removal %	Min 85	96	95	97
Oil and Grease Eff Monthly Average mg/l	NA		<7.00	<5.00
Chlorine Residual Eff Instant Maximum mg/l	Max 0			
Chlorine Residual Violation In Minutes Eff Instant Max	NA			
Turbidity Eff Daily Maximum NTU	NA	6.85	5.57	4.78
pH Eff Grab Minimum unit	Min 6	7.4	7.4	7.3
pH Eff Grab Maximum unit	Max 9	7.4	7.4	7.3
Temperature Eff Daily Maximum C	NA	22.1	23.6	24.3
Fecal Coliform Eff Grab Maximum mpn/100ml	Max	8	<6	<2
Fecal Coliform Eff 5Samp LogMean MPN/100ml	Max 200	7.3	4	2.9
Fecal Coliform Eff 10Samp 90th% mpn/100ml	Max 400	19	12	<8
Total Coliform Eff Daily Maximum mpn/100ml	Max 2400			

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# in CTR	CONSTITUENT	Apr-97	Jul-97	Dec-97	Mar-98	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Jan-99	Feb-99
2	Arsenic					0.69	2.2	< 2	< 2	< 4	< 4	< 4	4	< 4	< 4	< 4	< 4	< 4	< 4
4	Cadmium					< 0.04	0.07	< 1	< 0.2	< 0.2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
5b	Chromium					3.8	4.7	< 2	< 2	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
6	Copper					5.3	0.1	< 5	7	3	7	< 5	6	< 5	8	8	< 5	7	< 5
7	Lead					0.74	1	< 2	< 2	< 3	< 3	< 3	< 3	< 3	4	3	< 3	< 3	< 3
	Lead for CV Calculation					0.74	1	< 2	< 2	< 3	< 3	< 3	< 3	< 3	4	3	< 3	< 3	< 3
8	Mercury					< 0.01	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.3	< 0.01
9	Nickel					6.4	8.7	3	4	< 5	< 5	< 5	< 5	< 5	< 5	< 5	6	5	6
10	Selenium					1.22	< 0.6	< 5	1	< 1	< 0.1	< 3	< 10	< 10	< 10	< 10	< 10	< 10	< 10
11	Silver					< 0.2	0.32	< 1	0.6	0.9	0.8	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
13	Zinc					35	44	40	30	40	40	40	40	40	60	50	40	40	30
14	Cyanide					< 10	< 10	< 3	20.5	6.33	< 3	< 3	5	3	< 3	< 5	5	< 3	4
16	2,3,7,8-TCDD (Dioxin)	NA	NA	NA	NA							NA						NA	
17	Acrolein	NA	NA	NA	NA							NA						NA	
18	Acrylonitrile	NA	NA	NA	NA							NA						NA	
19	Benzene	ND	ND	ND	ND							ND						ND	
20	Bromoform	ND	ND	ND	ND							ND						ND	
21	Carbon Tetrachloride	ND	ND	NA	ND							NA						ND	
22	Chlorobenzene	ND	ND	NA	ND							NA						ND	
23	Chlordibromomethane	ND	ND	ND	ND							ND						ND	
24	Chloroethane	ND	ND	NA	ND							NA						ND	
25	2-Chloroethylvinyl Ether	ND	ND	NA	ND							NA						ND	
26	Chloroform	6	3.6	ND	3							3						3	
27	Dichlorobromomethane	ND	ND	ND	ND							ND						ND	
28	1,1-Dichloroethane	ND	ND	NA	ND							NA						ND	
29	1,2-Dichloroethane	ND	ND	NA	ND							NA						ND	
30	1,1-Dichloroethylene	NA	NA	NA	NA							NA						NA	
31	1,2-Dichloropropane	ND	ND	NA	ND							NA						ND	
32	1,3-Dichloropropylene	NA	NA	NA	NA							NA						NA	
33	Ethylbenzene	ND	ND	NA	ND							NA						ND	
34	Methyl Bromide	NA	NA	NA	NA							NA						NA	
35	Methyl Chloride	NA	NA	NA	NA							NA						NA	
36	Methylene Chloride	ND	9.2	NA	ND							NA						ND	
37	1,1,2,2-Tetrachloroethane	ND	ND	NA	ND							NA						ND	
38	Tetrachloroethylene	NA	NA	NA	NA							NA						NA	
39	Toluene	ND	ND	ND	ND							ND						ND	
40	1,2-Trans-Dichloroethylene	NA	NA	NA	NA							NA						NA	
41	1,1,1-Trichloroethane	ND	ND	NA	ND							NA						ND	
42	1,1,2-Trichloroethane																		
43	Trichloroethylene	NA	NA	NA	NA							NA						NA	
44	Vinyl Chloride	ND	ND	NA	ND							NA						ND	
45	2-Chlorophenol																		
46	2,4-Dichlorophenol																		
47	2,4-Dimethylphenol																		
48	2-Methyl-4,6-Dinitrophenol	NA	NA	NA	NA							NA						NA	
49	2,4-Dinitrophenol																		
50	2-Nitrophenol																		
51	4-Nitrophenol																		
52	3-Methyl-4-Chlorophenol	NA	NA	NA	NA							NA						NA	
53	Pentachlorophenol	ND	ND	ND	ND							ND						ND	
54	Phenol																		
55	2,4,6-Trichlorophenol	ND	ND	ND	ND							ND						ND	
56	Acenaphthene																		
57	Acenephthylene																		

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# in CTR	CONSTITUENT	Apr-97	Jul-97	Dec-97	Mar-98	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Jan-99	Feb-99
58	Anthracene																		
59	Benzidine																		
60	Benzo(a)Anthracene																		
61	Benzo(a)Pyrene	NA	NA	NA	NA							NA						NA	
62	Benzo(b)Fluoranthene																		
63	Benzo(ghi)Perylene																		
64	Benzo(k)Fluoranthene																		
65	Bis(2-Chloroethoxy)Methane																		
66	Bis(2-Chloroethyl)Ether																		
67	Bis(2-Chloroisopropyl)Ether																		
68	Bis(2-Ethylhexyl)Phthalate																		
69	4-Bromophenyl Phenyl Ether																		
70	Butylbenzyl Phthalate																		
71	2-Chloronaphthalene																		
72	4-Chlorophenyl Phenyl Ether																		
73	Chrysene																		
74	Dibenzo(a,h)Anthracene																		
75	1,2 Dichlorobenzene	ND	ND	ND	ND							ND						ND	
76	1,3 Dichlorobenzene	ND	ND	ND	ND							ND						ND	
77	1,4 Dichlorobenzene	ND	ND	ND	ND							ND						ND	
78	3,31-Dichlorobenzidine																		
79	Diethyl Phthalate																		
80	Dimethyl Phthalate																		
81	Di-n-Butyl Phthalate																		
82	2,4-Dinitrotoluene																		
83	2,6-Dinitrotoluene																		
84	Di-n-Octyl Phthalate																		
85	1,2-Diphenylhydrazine	NA	NA	NA	NA							NA						NA	
86	Fluoranthene	ND	ND	ND	ND							ND						ND	
87	Fluorene																		
88	Hexachlorobenzene	ND	ND	ND	ND							ND						ND	
89	Hexachlorobutadiene																		
90	Hexachlorocyclopentadiene																		
91	Hexachloroethane																		
92	Indeno(1,2,3-cd) Pyrene																		
93	Isophorone																		
94	naphthalene																		
95	Nitrobenzene																		
96	N-Nitrosodimethylamine																		
97	N-Nitrosodi-n-Propylamine																		
98	N-Nitrosodiphenylamine																		
99	Phenanthrene																		
100	Pyrene																		
101	1,2,4-Trichlorobenzene																		
102	Aldrin	ND	ND	ND	ND							ND						ND	
103	alpha-BHC	0.04	ND	ND	ND							ND						ND	
104	beta-BHC	ND	ND	ND	ND							ND						ND	
105	gamma-BHC	ND	ND	ND	ND							ND						ND	
106	delta-BHC	NA	NA	NA	NA							NA						NA	
107	Chlordane	ND	ND	ND	ND							ND						ND	
108	4,4-DDT	ND	ND	ND	ND							ND						ND	
109	4,4-DDE	ND	ND	ND	ND							ND						ND	
110	4,4-DDD	ND	ND	ND	ND							ND						ND	
111	Dieldrin	0.08	ND	ND	ND							ND						ND	

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# in CTR	CONSTITUENT	Apr-97	Jul-97	Dec-97	Mar-98	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98	Jan-99	Feb-99	
112	alpha-Endosulfan	ND	ND	ND	ND							ND						ND		
113	beta-Endosulfan	ND	ND	ND	ND							ND						ND		
114	Endosulfan Sulfate	ND	ND	ND	ND							ND						ND		
115	Endrin	ND	ND	ND	ND							ND						ND		
116	Endrin Aldehyde	ND	ND	ND	ND							ND						ND		
117	Heptachlor	ND	ND	ND	ND							ND						ND		
118	Heptchlor Epoxide	ND	ND	ND	ND							ND						ND		
119 -125	PCBs	NA	NA	NA	NA							NA						NA		
126	Toxaphene	ND	ND	ND	ND							ND						ND		
	Tributyltin	NA	NA	NA	NA							NA						NA		
	Chlorpyrifos																			
	Diazinon																			

Note: Nondetected data are indicated by :																																									
	or by "ND" in the sampling data																																								
# in CTR	CONSTITUENT	Mar-99		Apr-99		May-99		Jun-99		Jul-99		Aug-99		Sep-99		Oct-99		Nov-99		Dec-99		Jan-00		Feb-00		Mar-00		Apr-00		May-00		Jun-00		Jul-00		Aug-00		Sep-00		Oct-00	
2	Arsenic	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<	4	<
4	Cadmium	1	<	0.2	<	0.2	<	0.2	<	0.2	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<
5b	Chromium	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	1	<	1		1		1		1	<	1	<	1	<	1	<	1	<	1		1	<	1	<
6	Copper	7		9		8		10		11		17		7		10		10		12		16		9		5		7		11		10		15		8		10		12	
7	Lead	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3		3	<	3		3	<	3	<	3	<	3	<	3	<
	Lead for CV Calculation	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3		3	<	3		3	<	3	<	3	<	3	<	3	<
8	Mercury	0.02		0.01		0.02		0.02		0.02	<	0.2	<	0.2	<	0.2	<	0.2	<	0.2		0.554		0.007		0.009		0.011		0.013				0.017		0.004		0.011		0.008	
9	Nickel	5		6		6	<	3		3	<	5	<	5	<	5	<	3	<	3	<	3		3		5	<	3	<	3	<	3	<	3	<	3	<	3		4	
10	Selenium	10	<	10	<	1	<	1	<	1	<	10	<	10	<	10	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	10	<	1	<
11	Silver	3		1		1.4	<	3	<	3	<	3	<	3	<	3	<	3	<	3		4	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<	3	<
13	Zinc	40		40		40		40		50		40		40		30		30		50		50		60		30		30		40		40		50		40		30		40	
14	Cyanide	5		5		6		4		5		2.2	<	3.5		3		4		5		4	<	3		4	<	3	<	3		8	<	3.3	<	3		3		4	
16	2,3,7,8-TCDD (Dioxin)									NA																															
17	Acrolein									NA																															
18	Acrylonitrile									NA																															
19	Benzene									ND																															
20	Bromoform									ND																															
21	Carbon Tetrachloride									ND																															
22	Chlorobenzene									ND																															
23	Chlordibromomethane									ND																															
24	Chloroethane									ND																															
25	2-Chloroethylvinyl Ether									ND																															
26	Chloroform									2.5																															
27	Dichlorobromomethane									ND																															
28	1,1-Dichloroethane									ND																															
29	1,2-Dichloroethane									ND																															
30	1,1-Dichloroethylene									NA																															
31	1,2-Dichloropropane									ND																															
32	1,3-Dichloropropylene									NA																															
33	Ethylbenzene									ND																															
34	Methyl Bromide									NA																															
35	Methyl Chloride									NA																															
36	Methylene Chloride									ND																															
37	1,1,2,2-Tetrachloroethane									ND																															
38	Tetrachloroethylene									NA																															
39	Toluene									0.5																															
40	1,2-Trans-Dichloroethylene									NA																															
41	1,1,1-Trichloroethane									ND																															
42	1,1,2-Trichloroethane																																								
43	Trichloroethylene									NA																															
44	Vinyl Chloride									ND																															
45	2-Chlorophenol																																								
46	2,4-Dichlorophenol																																								
47	2,4-Dimethylphenol																																								
48	2-Methyl-4,6-Dinitrophenol									NA																															
49	2,4-Dinitrophenol																																								
50	2-Nitrophenol																																								
51	4-Nitrophenol																																								
52	3-Methyl-4-Chlorophenol									NA																															
53	Pentachlorophenol									ND																															
54	Phenol																																								
55	2,4,6-Trichlorophenol									ND																															
56	Acenaphthene																																								
57	Acenephthylene																																								

Note: Nondetected data are indicated by :																							
	or by "ND" in the sampling data																						
# in CTR	CONSTITUENT	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00	Oct-00		
58	Anthracene																						
59	Benzidine																						
60	Benzo(a)Anthracene																						
61	Benzo(a)Pyrene					NA																	
62	Benzo(b)Fluoranthene																						
63	Benzo(ghi)Perylene																						
64	Benzo(k)Fluoranthene																						
65	Bis(2-Chloroethoxy)Methane																						
66	Bis(2-Chloroethyl)Ether																						
67	Bis(2-Chloroisopropyl)Ether																						
68	Bis(2-Ethylhexyl)Phthalate																						
69	4-Bromophenyl Phenyl Ether																						
70	Butylbenzyl Phthalate																						
71	2-Chloronaphthalene																						
72	4-Chlorophenyl Phenyl Ether																						
73	Chrysene																						
74	Dibenzo(a,h)Anthracene																						
75	1,2 Dichlorobenzene					ND																	
76	1,3 Dichlorobenzene					ND																	
77	1,4 Dichlorobenzene					ND																	
78	3,31-Dichlorobenzidine																						
79	Diethyl Phthalate																						
80	Dimethyl Phthalate																						
81	Di-n-Butyl Phthalate																						
82	2,4-Dinitrotoluene																						
83	2,6-Dinitrotoluene																						
84	Di-n-Octyl Phthalate																						
85	1,2-Diphenylhydrazine					NA																	
86	Fluoranthene					ND																	
87	Fluorene																						
88	Hexachlorobenzene					ND																	
89	Hexachlorobutadiene																						
90	Hexachlorocyclopentadiene																						
91	Hexachloroethane																						
92	Indeno(1,2,3-cd) Pyrene																						
93	Isophorone																						
94	naphthalene																						
95	Nitrobenzene																						
96	N-Nitrosodimethylamine																						
97	N-Nitrosodi-n-Propylamine																						
98	N-Nitrosodiphenylamine																						
99	Phenanthrene																						
100	Pyrene																						
101	1,2,4-Trichlorobenzene																						
102	Aldrin					ND																	
103	alpha-BHC					ND																	
104	beta-BHC					ND																	
105	gamma-BHC					ND																	
106	delta-BHC					NA																	
107	Chlordane					ND																	
108	4,4-DDT					ND																	
109	4,4-DDE					ND																	
110	4,4-DDD					ND																	
111	Dieldrin					ND																	

Note: Nondetected data are indicated by																						
	or by "ND" in the sampling data																					
# in CTR	CONSTITUENT	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00	Oct-00	
112	alpha-Endosulfan					ND																
113	beta-Endosulfan					ND																
114	Endosulfan Sulfate					ND																
115	Endrin					ND																
116	Endrin Aldehyde					ND																
117	Heptachlor					ND																
118	Heptchlor Epoxide					ND																
119 -125	PCBs					NA																
126	Toxaphene					ND																
	Tirbutyltin					NA																
	Chlorpyrifos																					
	Diazinon																					

Note: Nondetected data are indicated by "<"																		
	or by "ND" in the sampling data																	
# in CTR	CONSTITUENT	Nov-00		Dec-00		Jan-01		Feb-01		Mar-01		Apr-01		May-01		Jun-01		Jul-01
2	Arsenic	4	<	4	<	4	<	4	<	4	<	4		0.6		0.8	<	0.4
4	Cadmium	1	<	1	<	1	<	0.2	<	0.2	<	1	<	0.1	<	0.1	<	0.1
5b	Chromium	1	<	1	<	1	<	1	<	1	<	5		0.6		0.7	<	0.5
6	Copper	10		12		12		7		6		10		12		11		8
7	Lead	3	<	3	<	3	<	3	<	0.3	<	3		0.68		0.66	<	0.3
	Lead for CV Calculation	3	<	3	<	3	<	3	<	0.3	<	3		0.68		0.66	<	0.3
8	Mercury	0.006		0.01		0.009				0.006		0.007		0.008		0.007		0.001
9	Nickel	3	<	3		3		6		5	<	5		2.8		2.2	<	0.5
10	Selenium	1	<	1		1	<	1	<	0.1	<	10	<	0.5		0.5	<	1
11	Silver	3	<	3	<	3		0.5	<	0.5	<	3		1.2		0.5	<	0.3
13	Zinc	40		40		40		30		30		40		34		30		4
14	Cyanide	4		4	<	3		4	<	5	<	3		4		5		3
16	2,3,7,8-TCDD (Dioxin)																	
17	Acrolein																	
18	Acrylonitrile																	
19	Benzene																	
20	Bromoform																	
21	Carbon Tetrachloride																	
22	Chlorobenzene																	
23	Chlordibromomethane																	
24	Chloroethane																	
25	2-Chloroethylvinyl Ether																	
26	Chloroform																	
27	Dichlorobromomethane																	
28	1,1-Dichloroethane																	
29	1,2-Dichloroethane																	
30	1,1-Dichloroethylene																	
31	1,2-Dichloropropane																	
32	1,3-Dichloropropylene																	
33	Ethylbenzene																	
34	Methyl Bromide																	
35	Methyl Chloride																	
36	Methylene Chloride																	
37	1,1,2,2-Tetrachloroethane																	
38	Tetrachloroethylene																	
39	Toluene																	
40	1,2-Trans-Dichloroethylene																	
41	1,1,1-Trichloroethane																	
42	1,1,2-Trichloroethane																	
43	Trichloroethylene																	
44	Vinyl Chloride																	
45	2-Chlorophenol																	
46	2,4-Dichlorophenol																	
47	2,4-Dimethylphenol																	
48	2-Methyl-4,6-Dinitrophenol																	
49	2,4-Dinitrophenol																	
50	2-Nitrophenol																	
51	4-Nitrophenol																	
52	3-Methyl-4-Chlorophenol																	
53	Pentachlorophenol																	
54	Phenol																	
55	2,4,6-Trichlorophenol																	
56	Acenaphthene																	
57	Acenephthylene																	

Note: Nondetected data are indicated by										
	or by "ND" in the sampling data									
# in CTR	CONSTITUENT	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01
58	Anthracene									
59	Benzidine									
60	Benzo(a)Anthracene									
61	Benzo(a)Pyrene									
62	Benzo(b)Fluoranthene									
63	Benzo(ghi)Perylene									
64	Benzo(k)Fluoranthene									
65	Bis(2-Chloroethoxy)Methane									
66	Bis(2-Chloroethyl)Ether									
67	Bis(2-Chloroisopropyl)Ether									
68	Bis(2-Ethylhexyl)Phthalate									
69	4-Bromophenyl Phenyl Ether									
70	Butylbenzyl Phthalate									
71	2-Chloronaphthalene									
72	4-Chlorophenyl Phenyl Ether									
73	Chrysene									
74	Dibenzo(a,h)Anthracene									
75	1,2 Dichlorobenzene									
76	1,3 Dichlorobenzene									
77	1,4 Dichlorobenzene									
78	3,31-Dichlorobenzidine									
79	Diethyl Phthalate									
80	Dimethyl Phthalate									
81	Di-n-Butyl Phthalate									
82	2,4-Dinitrotoluene									
83	2,6-Dinitrotoluene									
84	Di-n-Octyl Phthalate									
85	1,2-Diphenylhydrazine									
86	Fluoranthene									
87	Fluorene									
88	Hexachlorobenzene									
89	Hexachlorobutadiene									
90	Hexachlorocyclopentadiene									
91	Hexachloroethane									
92	Indeno(1,2,3-cd) Pyrene									
93	Isophorone									
94	naphthalene									
95	Nitrobenzene									
96	N-Nitrosodimethylamine									
97	N-Nitrosodi-n-Propylamine									
98	N-Nitrosodiphenylamine									
99	Phenanthrene									
100	Pyrene									
101	1,2,4-Trichlorobenzene									
102	Aldrin									
103	alpha-BHC									
104	beta-BHC									
105	gamma-BHC									
106	delta-BHC									
107	Chlordane									
108	4,4-DDT									
109	4,4-DDE									
110	4,4-DDD									
111	Dieldrin									

Note: Nondetected data are indicated by ;										
	or by "ND" in the sampling data									
# in CTR	CONSTITUENT	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01
112	alpha-Endosulfan									
113	beta-Endosulfan									
114	Endosulfan Sulfate									
115	Endrin									
116	Endrin Aldehyde									
117	Heptachlor									
118	Heptchlor Epoxide									
119 -125	PCBs									
126	Toxaphene									
	Tirbutyltin									
	Chlorpyrifos									
	Diazinon									

		Basin Plan Objectives, ug/L				CTR Water Quality Objectives, ug/L		
		Saltwater		Freshwater		Saltwater		Human Health
# in CTR	CONSTITUENT	4-day	1-hr	Instant Max.	24-hr avg	CMC	CCC	Organisms only
2	Arsenic	36	69			69	36	
4	Cadmium	9.3	43			42	9.3	
5b	Chromium	50	1100			1100	50	
6	Copper		4.9			5.78	3.1	
7	Lead	5.6	140			220	8.5	
	Lead for CV calculation	5.6	140			220	8.5	
8	Mercury	0.025	2.1					0.051
9	Nickel			140	7.1	74	8.3	
10	Selenium					5	5	
11	Silver			2.3		2.24		
13	Zinc			170	58	95	85	
14	Cyanide		5			1	1	220000
16	2,3,7,8-TCDD (Dioxin)							1.40E-08
17	Acrolein							780
18	Acrylonitrile							0.66
19	Benzene							71
20	Bromoform							360
21	Carbon Tetrachloride							4.4
22	Chlorobenzene							21000
23	Chlordibromomethane							34
24	Chloroethane							
25	2-Chloroethylvinyl Ether							
26	Chloroform					130		
27	Dichlorobromomethane							46
28	1,1-Dichloroethane							
29	1,2-Dichloroethane							99
30	1,1-Dichloroethylene							3.2
31	1,2-Dichloropropane							39
32	1,3-Dichloropropylene							1700
33	Ethylbenzene							29000
34	Methyl Bromide							4000
35	Methyl Chloride							n
36	Methylene Chloride							1600
37	1,1,2,2-Tetrachloroethane							11
38	Tetrachloroethylene							8.85
39	Toluene							200000
40	1,2-Trans-Dichloroethylene							140000
41	1,1,1-Trichloroethane							
42	1,1,2-Trichloroethane							42
43	Trichloroethylene							81
44	Vinyl Chloride							525
45	2-Chlorophenol							400
46	2,4-Dichlorophenol							790
47	2,4-Dimethylphenol							2300
48	2-Methyl-4,6-Dinitrophenol							765
49	2,4-Dinitrophenol							14000
50	2-Nitrophenol							
51	4-Nitrophenol							
52	3-Methyl-4-Chlorophenol							
53	Pentachlorophenol					13	7.9	8.2
54	Phenol		500					4600000
55	2,4,6-Trichlorophenol							6.5

		Basin Plan Objectives, ug/L				CTR Water Quality Objectives, ug/L		
56	Acenaphthene							2700
57	Acenephthylene							
58	Anthracene							110000
59	Benzidine							0.00054
60	Benzo(a)Anthracene							***0.049***
61	Benzo(a)Pyrene							***0.049***
62	Benzo(b)Fluoranthene							***0.049***
63	Benzo(ghi)Perylene							
64	Benzo(k)Fluoranthene							***0.049***
65	Bis(2-Chloroethoxy)Methane							
66	Bis(2-Chloroethyl)Ether							1.4
67	Bis(2-Chloroisopropyl)Ether							170000
68	Bis(2-Ethylhexyl)Phthalate							5.9
69	4-Bromophenyl Phenyl Ether							
70	Butylbenzyl Phthalate							5200
71	2-Chloronaphthalene							4300
72	4-Chlorophenyl Phenyl Ether							
73	Chrysene							***0.049***
74	Dibenzo(a,h)Anthracene							***0.049***
75	1,2 Dichlorobenzene							17000
76	1,3 Dichlorobenzene							2600
77	1,4 Dichlorobenzene							2600
78	3,31-Dichlorobenzidine							0.077
79	Diethyl Phthalate							120000
80	Dimethyl Phthalate							2900000
81	Di-n-Butyl Phthalate							12000
82	2,4-Dinitrotoluene							9.1
83	2,6-Dinitrotoluene							
84	Di-n-Octyl Phthalate							
85	1,2-Diphenylhydrazine							0.54
86	Fluoranthene							370
87	Fluorene							14000
88	Hexachlorobenzene							0.00077
89	Hexachlorobutadiene							50
90	Hexachlorocyclopentadiene							17000
91	Hexachloroethane							8.9
92	Indeno(1,2,3-cd) Pyrene							**0.049**
93	Isophorone							600
94	naphthalene							
95	Nitrobenzene							1900
96	N-Nitrosodimethylamine							8.1
97	N-Nitrosodi-n-Propylamine							1.4
98	N-Nitrosodiphenylamine							16
99	Phenanthrene							
100	Pyrene							11000
101	1,2,4-Trichlorobenzene							
102	Aldrin					**1.3**		**0.00014**
103	alpha-BHC							0.013
104	beta-BHC							0.046
105	gamma-BHC					0.16		0.063
106	delta-BHC							
107	Chlordane					**0.09**	**0.004**	**0.00059**
108	4,4-DDT					**0.13**	**0.001**	**0.00059**
109	4,4-DDE							**0.00059**
110	4,4-DDD							**0.00084**

		Basin Plan Objectives, ug/L				CTR Water Quality Objectives, ug/L		
111	Dieldrin					**0.71**	**0.0019**	**0.00014**
112	alpha-Endosulfan					0.034	0.0087	240
113	beta-Endosulfan					0.034	0.0087	240
114	Endosulfan Sulfate							240
115	Endrin					**0.037**	**0.0023**	**0.81**
116	Endrin Aldehyde							0.81
117	Heptachlor					**0.053**	**0.0036**	**0.00021**
118	Heptchlor Epoxide					**0.053**	**0.0036**	**0.00011**
119 -125	PCBs						**0.03**	**0.00017**
126	Toxaphene					**0.21**	**0.0002**	**0.00075**
	Tributyltin							
	Chlorpyrifos							
	Diazinon							

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																	Steps in SIP								
2			Basin Plan Objectives				CTR Water Quality Objectives										Step 1	Step 2							
3			Saltwater		Freshwater		Saltwater		Human Health	Acute WQO's			Chronic WQO's				A blank space or "N/A" means incomplete discharger data								
4	# in CTR	CONSTITUENT	4-day	1-hr	Instan t Max.	24-hr avg	CMC	CCC	Organisms only	Lowest Acute Untranslated	Acute Translator (Default=1)	Lowest Acute, Adjusted	Lowest Chronic, Untranslated	Chronic Translator (Default=1)	Lowest Chronic	Human Health?	Governing WQO	Effluent Data range; if NA, RP det by bckgrd)	# of quanti fied data	# of ND	#of Sampl es	Average	Standard Deviation	Coefficient of Variance By SIP Formulas	Ave + 3SD
5	2	Arsenic	36	69			69	36		69	1	69	36	1	36.0	No	36	0.6 to 4	5	38	43	1.66	1.46	0.60	6.05
6	4	Cadmium	9.3	43			42	9.3		42	1	42	9.3	1	9.3	No	9.3	0.07 to 0.07	1	43	44	0.07	N/A	0.60	N/A
7	5b	Chromium	50	1100			1100	50		1100	1	1100	50	1	50.0	No	50	0.6 to 4.7	8	35	43	1.73	1.58	0.60	6.48
8	6	Copper		4.9			5.78	3.1		4.9	1	4.9	3.1	0.83	3.7	No	3.7	0.1 to 17	38	5	43	9.04	3.32	0.46	19.01
9	7	Lead	5.6	140			220	8.5		140	1	140	5.6	1	5.6	No	5.6	0.66 to 4	8	35	43	2.01	1.37	0.60	6.12
10		Lead for CV calculation	5.6	140			220	8.5		140	1	140	5.6	1	5.6	No	5.6	0.66 to 4	8	35	43	2.01	1.37	0.60	
11	8	Mercury	0.025	2.1					0.051	2.1	1	2.1	0.025	1	0.0	0.051	0.025	0 to 0.554	23	19	42	0.04	0.12	1.52	0.41
12	9	Nickel			140	7.1	74	8.3		74	1	74	7.1	1	7.1	No	7.1	2.2 to 8.7	19	24	43	4.58	1.68	0.57	9.64
13	10	Selenium					5	5		5	1	5	5	1	5.0	No	5	0.5 to 1.22	4	39	43	0.93	0.30	0.60	1.84
14	11	Silver			2.3		2.24			2.24	1	2.24	0	1	-	No	2.24	0.32 to 4	10	34	44	1.12	1.07	0.50	4.32
15	13	Zinc			170	58	95	85		95	1	95	58	1	58.0	No	58	4 to 60	43	0	43	38.77	9.27	0.24	66.57
16	14	Cyanide		5			1	1	220000	1	1	1	1	1	1.0	220000	1	2.2 to 20.5	26	18	44	5.00	3.38	0.79	15.15
17	16	2,3,7,8-TCDD (Dioxin)							1.40E-08	0	1	0	0	1	-	1.4E-08	1.4E-08	N/A	0	0	0	N/A	N/A	0.60	N/A
18	17	Acrolein							780	0	1	0	0	1	-	780	780	N/A	0	0	0	N/A	N/A	0.60	N/A
19	18	Acrylonitrile							0.66	0	1	0	0	1	-	0.66	0.66	N/A	0	0	0	N/A	N/A	0.60	N/A
20	19	Benzene							71	0	1	0	0	1	-	71	71	N/A	0	0	0	N/A	N/A	0.60	N/A
21	20	Bromoform							360	0	1	0	0	1	-	360	360	N/A	0	0	0	N/A	N/A	0.60	N/A
22	21	Carbon Tetrachloride							4.4	0	1	0	0	1	-	4.4	4.4	N/A	0	0	0	N/A	N/A	0.60	N/A
23	22	Chlorobenzene							21000	0	1	0	0	1	-	21000	21000	N/A	0	0	0	N/A	N/A	0.60	N/A
24	23	Chlordibromomethane							34	0	1	0	0	1	-	34	34	N/A	0	0	0	N/A	N/A	0.60	N/A
25	24	Chloroethane								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
26	25	2-Chloroethylvinyl Ether								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
27	26	Chloroform					130			130	1	130	0	1	-	No	130	0 to 6	6	0	6	3.01	1.76	0.60	8.30
28	27	Dichlorobromomethane							46	0	1	0	0	1	-	46	46	N/A	0	0	0	N/A	N/A	0.60	N/A
29	28	1,1-Dichloroethane								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
30	29	1,2-Dichloroethane							99	0	1	0	0	1	-	99	99	N/A	0	0	0	N/A	N/A	0.60	N/A
31	30	1,1-Dichloroethylene							3.2	0	1	0	0	1	-	3.2	3.2	N/A	0	0	0	N/A	N/A	0.60	N/A
32	31	1,2-Dichloropropane							39	0	1	0	0	1	-	39	39	N/A	0	0	0	N/A	N/A	0.60	N/A
33	32	1,3-Dichloropropylene							1700	0	1	0	0	1	-	1700	1700	N/A	0	0	0	N/A	N/A	0.60	N/A
34	33	Ethylbenzene							29000	0	1	0	0	1	-	29000	29000	N/A	0	0	0	N/A	N/A	0.60	N/A
35	34	Methyl Bromide							4000	0	1	0	0	1	-	4000	4000	N/A	0	0	0	N/A	N/A	0.60	N/A
36	35	Methyl Chloride							n	0	1	0	0	1	-	n	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
37	36	Methylene Chloride							1600	0	1	0	0	1	-	1600	1600	0 to 9.2	1	0	1	4.60	N/A	0.60	N/A
38	37	1,1,2,2-Tetrachloroethane							11	0	1	0	0	1	-	11	11	N/A	0	0	0	N/A	N/A	0.60	N/A
39	38	Tetrachloroethylene							8.85	0	1	0	0	1	-	8.85	8.85	N/A	0	0	0	N/A	N/A	0.60	N/A
40	39	Toluene							200000	0	1	0	0	1	-	200000	200000	0 to 0.5	1	0	1	0.25	N/A	0.60	N/A
41	40	1,2-Trans-Dichloroethylene							140000	0	1	0	0	1	-	140000	140000	N/A	0	0	0	N/A	N/A	0.60	N/A
42	41	1,1,1-Trichloroethane								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
43	42	1,1,2-Trichloroethane							42	0	1	0	0	1	-	42	42	N/A	0	0	0	N/A	N/A	0.60	N/A
44	43	Trichloroethylene							81	0	1	0	0	1	-	81	81	N/A	0	0	0	N/A	N/A	0.60	N/A
45	44	Vinyl Chloride							525	0	1	0	0	1	-	525	525	N/A	0	0	0	N/A	N/A	0.60	N/A
46	45	2-Chlorophenol							400	0	1	0	0	1	-	400	400	N/A	0	0	0	N/A	N/A	0.60	N/A
47	46	2,4-Dichlorophenol							790	0	1	0	0	1	-	790	790	N/A	0	0	0	N/A	N/A	0.60	N/A
48	47	2,4-Dimethylphenol							2300	0	1	0	0	1	-	2300	2300	N/A	0	0	0	N/A	N/A	0.60	N/A
49	48	2-Methyl-4,6-Dinitrophenol							765	0	1	0	0	1	-	765	765	N/A	0	0	0	N/A	N/A	0.60	N/A
50	49	2,4-Dinitrophenol							14000	0	1	0	0	1	-	14000	14000	N/A	0	0	0	N/A	N/A	0.60	N/A
51	50	2-Nitrophenol								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
52	51	4-Nitrophenol								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
53	52	3-Methyl-4-Chlorophenol								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
54	53	Pentachlorophenol					13	7.9	8.2	13	1	13	7.9	1	7.9	8.2	7.9	N/A	0	0	0	N/A	N/A	0.60	N/A
55	54	Phenol							4600000	0	1	0	0	1	-	4600000	4600000	N/A	0	0	0	N/A	N/A	0.60	N/A
56	55	2,4,6-Trichlorophenol							6.5	0	1	0	0	1	-	6.5	6.5	N/A	0	0	0	N/A	N/A	0.60	N/A
57	56	Acenaphthene							2700	0	1	0	0	1	-	2700	2700	N/A	0	0	0	N/A	N/A	0.60	N/A
58	57	Acenephthylene								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
59	58	Anthracene							110000	0	1	0	0	1	-	110000	110000	N/A	0	0	0	N/A	N/A	0.60	N/A
60	59	Benzidine							0.00054	0	1	0	0	1	-	0.00054	0.00054	N/A	0	0	0	N/A	N/A	0.60	N/A
61	60	Benzo(a)Anthracene							***0.049***	0	1	0	0	1	-	0.049	0.049	N/A	0	0	0	N/A	N/A	0.60	N/A
62	61	Benzo(a)Pyrene							***0.049***	0	1	0	0	1	-	0.049	0.049	N/A	0	0	0	N/A	N/A	0.60	N/A
63	62	Benzo(b)Fluoranthene							***0.049***	0	1	0	0	1	-	0.049	0.049	N/A	0	0	0	N/A	N/A	0.60	N/A
64	63	Benzo(ghi)Perylene								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																	Steps in SIP								
2			Basin Plan Objectives				CTR Water Quality Objectives										Step 1	Step 2							
3			Saltwater		Freshwater		Saltwater		Human Health	Acute WQO's			Chronic WQO's				A blank space or "N/A" means incomplete discharger data								
4	# in CTR	CONSTITUENT	4-day	1-hr	Instan t Max.	24-hr avg	CMC	CCC	Organisms only	Lowest Acute Untranslated	Acute Translator (Default=1)	Lowest Acute, Adjusted	Lowest Chronic, Untranslated	Chronic Translator (Default=1)	Lowest Chronic	Human Health?	Governing WQO	Effluent Data range; if NA, RP det by bckgrd)	# of quanti fied data	# of ND	#of Sampl es	Average	Standard Deviation	Coefficient of Variance By SIP Formulas	Ave + 3SD
65	64	Benzo(k)Fluoranthene							***0.049***	0	1	0	0	1	-	0.049	0.049	N/A	0	0	0	N/A	N/A	0.60	N/A
66	65	Bis(2-Chloroethoxy)Methane								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
67	66	Bis(2-Chloroethyl)Ether							1.4	0	1	0	0	1	-	1.4	1.4	N/A	0	0	0	N/A	N/A	0.60	N/A
68	67	Bis(2-Chloroisopropyl)Ether							170000	0	1	0	0	1	-	170000	170000	N/A	0	0	0	N/A	N/A	0.60	N/A
69	68	Bis(2-Ethylhexyl)Phthalate							5.9	0	1	0	0	1	-	5.9	5.9	N/A	0	0	0	N/A	N/A	0.60	N/A
70	69	4-Bromophenyl Phenyl Ether								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
71	70	Butylbenzyl Phthalate							5200	0	1	0	0	1	-	5200	5200	N/A	0	0	0	N/A	N/A	0.60	N/A
72	71	2-Chloronaphthalene							4300	0	1	0	0	1	-	4300	4300	N/A	0	0	0	N/A	N/A	0.60	N/A
73	72	4-Chlorophenyl Phenyl Ether								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
74	73	Chrysene							***0.049***	0	1	0	0	1	-	0.049	0.049	N/A	0	0	0	N/A	N/A	0.60	N/A
75	74	Dibenzo(a,h)Anthracene							***0.049***	0	1	0	0	1	-	0.049	0.049	N/A	0	0	0	N/A	N/A	0.60	N/A
76	75	1,2 Dichlorobenzene							17000	0	1	0	0	1	-	17000	17000	N/A	0	0	0	N/A	N/A	0.60	N/A
77	76	1,3 Dichlorobenzene							2600	0	1	0	0	1	-	2600	2600	N/A	0	0	0	N/A	N/A	0.60	N/A
78	77	1,4 Dichlorobenzene							2600	0	1	0	0	1	-	2600	2600	N/A	0	0	0	N/A	N/A	0.60	N/A
79	78	3,3'-Dichlorobenzidine							0.077	0	1	0	0	1	-	0.077	0.077	N/A	0	0	0	N/A	N/A	0.60	N/A
80	79	Diethyl Phthalate							120000	0	1	0	0	1	-	120000	120000	N/A	0	0	0	N/A	N/A	0.60	N/A
81	80	Dimethyl Phthalate							2900000	0	1	0	0	1	-	2900000	2900000	N/A	0	0	0	N/A	N/A	0.60	N/A
82	81	Di-n-Butyl Phthalate							12000	0	1	0	0	1	-	12000	12000	N/A	0	0	0	N/A	N/A	0.60	N/A
83	82	2,4-Dinitrotoluene							9.1	0	1	0	0	1	-	9.1	9.1	N/A	0	0	0	N/A	N/A	0.60	N/A
84	83	2,6-Dinitrotoluene								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
85	84	Di-n-Octyl Phthalate								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
86	85	1,2-Diphenylhydrazine							0.54	0	1	0	0	1	-	0.54	0.54	N/A	0	0	0	N/A	N/A	0.60	N/A
87	86	Fluoranthene							370	0	1	0	0	1	-	370	370	N/A	0	0	0	N/A	N/A	0.60	N/A
88	87	Fluorene							14000	0	1	0	0	1	-	14000	14000	N/A	0	0	0	N/A	N/A	0.60	N/A
89	88	Hexachlorobenzene							0.00077	0	1	0	0	1	-	0.00077	0.00077	N/A	0	0	0	N/A	N/A	0.60	N/A
90	89	Hexachlorobutadiene							50	0	1	0	0	1	-	50	50	N/A	0	0	0	N/A	N/A	0.60	N/A
91	90	Hexachlorocyclopentadiene							17000	0	1	0	0	1	-	17000	17000	N/A	0	0	0	N/A	N/A	0.60	N/A
92	91	Hexachloroethane							8.9	0	1	0	0	1	-	8.9	8.9	N/A	0	0	0	N/A	N/A	0.60	N/A
93	92	Indeno(1,2,3-cd) Pyrene							**0.049**	0	1	0	0	1	-	0.049	0.049	N/A	0	0	0	N/A	N/A	0.60	N/A
94	93	Isophorone							600	0	1	0	0	1	-	600	600	N/A	0	0	0	N/A	N/A	0.60	N/A
95	94	naphthalene								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
96	95	Nitrobenzene							1900	0	1	0	0	1	-	1900	1900	N/A	0	0	0	N/A	N/A	0.60	N/A
97	96	N-Nitrosodimethylamine							8.1	0	1	0	0	1	-	8.1	8.1	N/A	0	0	0	N/A	N/A	0.60	N/A
98	97	N-Nitrosodi-n-Propylamine							1.4	0	1	0	0	1	-	1.4	1.4	N/A	0	0	0	N/A	N/A	0.60	N/A
99	98	N-Nitrosodiphenylamine							16	0	1	0	0	1	-	16	16	N/A	0	0	0	N/A	N/A	0.60	N/A
100	99	Phenanthrene								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
101	100	Pyrene							11000	0	1	0	0	1	-	11000	11000	N/A	0	0	0	N/A	N/A	0.60	N/A
102	101	1,2,4-Trichlorobenzene								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
103	102	Aldrin					**1.3**		**0.00014**	1.3	1	1.3	0	1	-	0.00014	0.00014	N/A	0	0	0	N/A	N/A	0.60	N/A
104	103	alpha-BHC							0.013	0	1	0	0	1	-	0.013	0.013	0 to 0.04	1	0	1	0.02	N/A	0.60	N/A
105	104	beta-BHC							0.046	0	1	0	0	1	-	0.046	0.046	N/A	0	0	0	N/A	N/A	0.60	N/A
106	105	gamma-BHC					0.16		0.063	0.16	1	0.16	0	1	-	0.063	0.063	N/A	0	0	0	N/A	N/A	0.60	N/A
107	106	delta-BHC								0	1	0	0	1	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	0.60	N/A
108	107	Chlordane					**0.09**	**0.004**	**0.00059**	0.09	1	0.09	0.004	1	0.0	0.00059	0.00059	N/A	0	0	0	N/A	N/A	0.60	N/A
109	108	4,4-DDT					**0.13**	**0.001**	**0.00059**	0.13	1	0.13	0.001	1	0.0	0.00059	0.00059	N/A	0	0	0	N/A	N/A	0.60	N/A
110	109	4,4-DDE							**0.00059**	0	1	0	0	1	-	0.00059	0.00059	N/A	0	0	0	N/A	N/A	0.60	N/A
111	110	4,4-DDD							**0.00084**	0	1	0	0	1	-	0.00084	0.00084	N/A	0	0	0	N/A	N/A	0.60	N/A
112	111	Dieldrin					**0.71**	**0.002**	**0.00014**	0.71	1	0.71	0.0019	1	0.0	0.00014	0.00014	0 to 0.08	1	0	1	0.04	N/A	0.60	N/A
113	112	alpha-Endosulfan					0.034	0.009	240	0.034	1	0.034	0.0087	1	0.0	240	0.0087	N/A	0	0	0	N/A	N/A	0.60	N/A
114	113	beta-Endosulfan					0.034	0.009	240	0.034	1	0.034	0.0087	1	0.0	240	0.0087	N/A	0	0	0	N/A	N/A	0.60	N/A
115	114	Endosulfan Sulfate							240	0	1	0	0	1	-	240	240	N/A	0	0	0	N/A	N/A	0.60	N/A
116	115	Endrin					**0.037**	**0.002**	**0.81**	0.037	1	0.037	0.0023	1	0.0	0.81	0.0023	N/A	0	0	0	N/A	N/A	0.60	N/A
117	116	Endrin Aldehyde							0.81	0	1	0	0	1	-	0.81	0.81	N/A	0	0	0	N/A	N/A	0.60	N/A
118	117	Heptachlor					**0.053**	**0.004**	**0.00021**	0.053	1	0.053	0.0036	1	0.0	0.00021	0.00021	N/A	0	0	0	N/A	N/A	0.60	N/A
119	118	Heptchlor Epoxide					**0.053**	**0.004**	**0.00011**	0.053	1	0.053	0.0036	1	0.0	0.00011	0.00011	N/A	0	0	0	N/A	N/A	0.60	N/A
120	119 -125	PCBs						**0.03**	**0.00017**	0	1	0	0.03	1	0.0	0.00017	0.00017	N/A	0	0	0	N/A	N/A	0.60	N/A
121	126	Toxaphene					**0.21**	**2E-04**	**0.00075**	0.21	1	0.21	0.0002	1	0.0	0.00075	0.0002	N/A	0	0	0	N/A	N/A	0.60	N/A
122		Tributyltin								0	2	0	0	2	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	N/A	N/A
123		Chlorpyrifos								0	3	0	0	3	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	N/A	N/A
124		Diazinon								0	4	0	0	4	-	No	N.Obj.	N/A	0	0	0	N/A	N/A	N/A	N/A

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
1																	Steps in SIP								
2			Basin Plan Objectives				CTR Water Quality Objectives										Step 1	Step 2							
3			Saltwater		Freshwater		Saltwater		Human Health	Acute WQO's			Chronic WQO's				A blank space or "N/A" means incomplete discharger data								
4	# In CTR	CONSTITUENT	4-day	1-hr	Instan t Max	24-hr avg	CMC	CCC	Organisms only	Lowest Acute Untranslated	Acute Translator (Default=1)	Lowest Acute, Adjusted	Lowest Chronic, Untranslated	Chronic Translator (Default=1)	Lowest Chronic	Human Health?	Governing WQO	Effluent Data range; if NA, RP det by bckgrd)	# of quanti fied data	# of ND	#of Sampl es	Average	Standard Deviation	Coefficient of Variance By SIP Formulas	Ave + 3SD
125																									
126																									

	A	B	Z	AA	AB	AC	AD	AE	AI	AJ	AK	AL
1												
2				Step 3	Step 4	Step 5				Step 6	Step 7	
3												
4	# in CTR	CONSTITUENT	Range of Detection Limits (Discharger Data); Single value means only one detection limit.	MEC (= max detected, or if all ND, and any DL< WQO, then lowest det. limit)	MEC > WQO? (yes=Y RP)	Background = Max Observed Value, Central Bay RMP Sites (enter by hand)	Governing WQO	Arithmetic Mean of Ambient Background for Human Health Calculations (enter by hand)	Indeterminacy?	bckgrd > WQO; no=N RP, yes=Y RP (NA=bckgrnd not available, B= bckgrnd)	Final or Interim limit (Yes if any yeses in left columns)	RP? Cause of Indeterminacy Y = Yes, N=No, Ib=no bkgrnd, Io= no WQO , Idl =all detection limits >WQO
5	2	Arsenic	0.4 to 4	4	No	2.22	36		No	No	No	No
6	4	Cadmium	0.04 to 1	0.07	No	0.127	9.3		No	No	No	No
7	5b	Chromium	0.5 to 5	4.7	No	4.4	50		No	No	No	No
8	6	Copper	5	17	Yes	2.455	3.7		Ind.	No	Yes	Yes
9	7	Lead	0.3 to 3	4	No	0.804	5.6		No	No	No	No
10		Lead for CV calculation					5.6					
11	8	Mercury	0.01 to 0.2	0.554	Yes	0.006	0.025		Ind.	No	Yes	Yes
12	9	Nickel	0.5 to 6	8.7	Yes	3.5	7.1		No	No	Yes	Yes
13	10	Selenium	0.1 to 10	1.22	No	0.19	5		Ind.	No	Ind.	Idl,
14	11	Silver	0.2 to 3	4	Yes	0.068	2.24		Ind.	No	Yes	Yes
15	13	Zinc	0	60	Yes	4.6	58		No	No	Yes	Yes
16	14	Cyanide	3 to 10	20.5	Yes	N/A	1		Ind.	N/A	Yes	Yes
17	16	2,3,7,8-TCDD (Dioxin)	NA	Ind.	Inc.	N/A	1.4E-08		Ind.	N/A	Ind.	Idl, Ib,
18	17	Acrolein	NA	Ind.	Inc.	N/A	780		Ind.	N/A	Ind.	Idl, Ib,
19	18	Acrylonitrile	NA	Ind.	Inc.		0.66		Ind.	N/A	Ind.	Idl, Ib,
20	19	Benzene	0.5 to 2	Ind.	Inc.	N/A	71		Ind.	N/A	Ind.	Ib,
21	20	Bromoform	0.5 to 2	Ind.	Inc.		360		Ind.	N/A	Ind.	Ib,
22	21	Carbon Tetrachloride	1	Ind.	Inc.		4.4		Ind.	N/A	Ind.	Ib,
23	22	Chlorobenzene	1	Ind.	Inc.		21000		Ind.	N/A	Ind.	Ib,
24	23	Chlordibromomethane	0.5 to 2	Ind.	Inc.		34		Ind.	N/A	Ind.	Ib,
25	24	Chloroethane	1	Ind.	Inc.		N.Obj.		Ind.	N/A	Ind.	Ib, Io,
26	25	2-Chloroethylvinyl Ether	1	Ind.	Inc.		N.Obj.		Ind.	N/A	Ind.	Ib, Io,
27	26	Chloroform	0.5 to 2.5	6	No	N/A	130		Ind.	N/A	Ind.	Ib,
28	27	Dichlorobromomethane	0.5 to 2	Ind.	Inc.		46		Ind.	N/A	Ind.	Ib,
29	28	1,1-Dichloroethane	1	Ind.	Inc.		N.Obj.		Ind.	N/A	Ind.	Ib, Io,
30	29	1,2-Dichloroethane	1	Ind.	Inc.		99		Ind.	N/A	Ind.	Ib,
31	30	1,1-Dichloroethylene	NA	Ind.	Inc.		3.2		Ind.	N/A	Ind.	Idl, Ib,
32	31	1,2-Dichloropropane	1	Ind.	Inc.		39		Ind.	N/A	Ind.	Ib,
33	32	1,3-Dichloropropylene	NA	Ind.	Inc.		1700		Ind.	N/A	Ind.	Idl, Ib,
34	33	Ethylbenzene	1	Ind.	Inc.		29000		Ind.	N/A	Ind.	Ib,
35	34	Methyl Bromide	NA	Ind.	Inc.		4000		Ind.	N/A	Ind.	Idl, Ib,
36	35	Methyl Chloride	NA	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Idl, Ib, Io,
37	36	Methylene Chloride	3	9.2	No		1600		Ind.	N/A	Ind.	Ib,
38	37	1,1,2,2-Tetrachloroethane	1	Ind.	Inc.		11		Ind.	N/A	Ind.	Ib,
39	38	Tetrachloroethylene	NA	Ind.	Inc.		8.85		Ind.	N/A	Ind.	Idl, Ib,
40	39	Toluene	0.5 to 2	0.5	No	N/A	200000		Ind.	N/A	Ind.	Ib,
41	40	1,2-Trans-Dichloroethylene	NA	Ind.	Inc.		140000		Ind.	N/A	Ind.	Idl, Ib,
42	41	1,1,1-Trichloroethane	1	Ind.	Inc.		N.Obj.		Ind.	N/A	Ind.	Ib, Io,
43	42	1,1,2-Trichloroethane	1	Ind.	Inc.		42		Ind.	N/A	Ind.	Ib,
44	43	Trichloroethylene	NA	Ind.	Inc.		81		Ind.	N/A	Ind.	Idl, Ib,
45	44	Vinyl Chloride	1	Ind.	Inc.		525		Ind.	N/A	Ind.	Ib,
46	45	2-Chlorophenol	5	Ind.	Inc.	N/A	400		Ind.	N/A	Ind.	Ib,
47	46	2,4-Dichlorophenol	5	Ind.	Inc.	N/A	790		Ind.	N/A	Ind.	Ib,
48	47	2,4-Dimethylphenol	5	Ind.	Inc.	N/A	2300		Ind.	N/A	Ind.	Ib,
49	48	2-Methyl-4,6-Dinitrophenol	NA	Ind.	Inc.	N/A	765		Ind.	N/A	Ind.	Idl, Ib,
50	49	2,4-Dinitrophenol	10	Ind.	Inc.	N/A	14000		Ind.	N/A	Ind.	Ib,
51	50	2-Nitrophenol	5	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
52	51	4-Nitrophenol	10	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
53	52	3-Methyl-4-Chlorophenol	NA	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Idl, Ib, Io,
54	53	Pentachlorophenol	1 to 10	Ind.	Inc.	N/A	7.9		Ind.	N/A	Ind.	Idl, Ib,
55	54	Phenol	1 to 5	Ind.	Inc.	N/A	4600000		Ind.	N/A	Ind.	Ib,
56	55	2,4,6-Trichlorophenol	5	Ind.	Inc.	N/A	6.5		Ind.	N/A	Ind.	Ib,
57	56	Acenaphthene	5	Ind.	Inc.	0.0015	2700		No	No	No	No
58	57	Acenephthylene	5	Ind.	Inc.	0.00053	N.Obj.		Ind.	No	Ind.	Io,
59	58	Anthracene	20	Ind.	Inc.	0.0005	110000		No	No	No	No
60	59	Benzidine	5	Ind.	Inc.	N/A	0.00054		Ind.	N/A	Ind.	Idl, Ib,
61	60	Benzo(a)Anthracene	NA	Ind.	Inc.	0.0053	0.049		Ind.	No	Ind.	Idl,
62	61	Benzo(a)Pyrene	5	Ind.	Inc.	0.0025	0.049		Ind.	No	Ind.	Idl,
63	62	Benzo(b)Fluoranthene	5	Ind.	Inc.	0.0046	0.049		Ind.	No	Ind.	Idl,
64	63	Benzo(ghi)Perylene	5	Ind.	Inc.	0.006	N.Obj.		Ind.	No	Ind.	Io,

	A	B	Z	AA	AB	AC	AD	AE	AI	AJ	AK	AL
1												
2				Step 3	Step 4	Step 5				Step 6	Step 7	
3												
4	# In CTR	CONSTITUENT	Range of Detection Limits (Discharger Data); Single value means only one detection limit.	MEC (= max detected, or if all ND, and any DL< WQO, then lowest det. limit)	MEC > WQO? (yes=Y RP)	Background = Max Observed Value, Central Bay RMP Sites (enter by hand)	Governing WQO	Arithmetic Mean of Ambient Background for Human Health Calculations (enter by hand)	Indeterminacy?	bckgrd > WQO; no=N RP, yes=Y RP (NA=bckgrnd not available, B= bckgrnd)	Final or Interim limit (Yes if any yeses in left columns)	RP? Cause of Indeterminacy Y = Yes, N=No, Ib=no bkgrnd, Io= no WQO , Idl =all detection limits >WQO
65	64	Benzo(k)Fluoranthene	5	Ind.	Inc.	0.0015	0.049		Ind.	No	Ind.	Idl,
66	65	Bis(2-Chloroethoxy)Methane	5	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
67	66	Bis(2-Chloroethyl)Ether	5	Ind.	Inc.	N/A	1.4		Ind.	N/A	Ind.	Idl, Ib,
68	67	Bis(2-Chloroisopropyl)Ether	25	Ind.	Inc.	N/A	170000		Ind.	N/A	Ind.	Ib,
69	68	Bis(2-Ethylhexyl)Phthalate	5	Ind.	Inc.	N/A	5.9		Ind.	N/A	Ind.	Ib,
70	69	4-Bromophenyl Phenyl Ether	5	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
71	70	Butylbenzyl Phthalate	5	Ind.	Inc.	N/A	5200		Ind.	N/A	Ind.	Ib,
72	71	2-Chloronaphthalene	5	Ind.	Inc.	N/A	4300		Ind.	N/A	Ind.	Ib,
73	72	4-Chlorophenyl Phenyl Ether	5	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
74	73	Chrysene	5	Ind.	Inc.	0.0041	0.049		Ind.	No	Ind.	Idl,
75	74	Dibenzo(a,h)Anthracene	1 to 5	Ind.	Inc.	0.0006	0.049		Ind.	No	Ind.	Idl,
76	75	1,2 Dichlorobenzene	1 to 5	Ind.	Inc.	N/A	17000		Ind.	N/A	Ind.	Ib,
77	76	1,3 Dichlorobenzene	1 to 5	Ind.	Inc.	N/A	2600		Ind.	N/A	Ind.	Ib,
78	77	1,4 Dichlorobenzene	25	Ind.	Inc.	N/A	2600		Ind.	N/A	Ind.	Ib,
79	78	3,3'-Dichlorobenzidine	5	Ind.	Inc.	N/A	0.077		Ind.	N/A	Ind.	Idl, Ib,
80	79	Diethyl Phthalate	5	Ind.	Inc.	N/A	120000		Ind.	N/A	Ind.	Ib,
81	80	Dimethyl Phthalate	25	Ind.	Inc.	N/A	2900000		Ind.	N/A	Ind.	Ib,
82	81	Di-n-Butyl Phthalate	5	Ind.	Inc.	N/A	12000		Ind.	N/A	Ind.	Ib,
83	82	2,4-Dinitrotoluene	5	Ind.	Inc.	N/A	9.1		Ind.	N/A	Ind.	Ib,
84	83	2,6-Dinitrotoluene	5	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
85	84	Di-n-Octyl Phthalate	NA	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Idl, Ib, Io,
86	85	1,2-Diphenylhydrazine	1 to 5	Ind.	Inc.	N/A	0.54		Ind.	N/A	Ind.	Idl, Ib,
87	86	Fluoranthene	5	Ind.	Inc.	0.007	370		No	No	No	No
88	87	Fluorene	0.02 to 5	Ind.	Inc.	0.002078	14000		No	No	No	No
89	88	Hexachlorobenzene	25	Ind.	Inc.	N/A	0.00077		Ind.	N/A	Ind.	Idl, Ib,
90	89	Hexachlorobutadiene	5	Ind.	Inc.	N/A	50		Ind.	N/A	Ind.	Ib,
91	90	Hexachlorocyclopentadiene	5	Ind.	Inc.	N/A	17000		Ind.	N/A	Ind.	Ib,
92	91	Hexachloroethane	5	Ind.	Inc.	N/A	8.9		Ind.	N/A	Ind.	Ib,
93	92	Indeno(1,2,3-cd) Pyrene	25	Ind.	Inc.	0.004	0.049		Ind.	No	Ind.	Idl,
94	93	Isophorone	5	Ind.	Inc.	N/A	600		Ind.	N/A	Ind.	Ib,
95	94	naphthalene	5	Ind.	Inc.	0.00229	N.Obj.		Ind.	No	Ind.	Io,
96	95	Nitrobenzene	25	Ind.	Inc.	N/A	1900		Ind.	N/A	Ind.	Ib,
97	96	N-Nitrosodimethylamine	5	Ind.	Inc.	N/A	8.1		Ind.	N/A	Ind.	Ib,
98	97	N-Nitrosodi-n-Propylamine	5	Ind.	Inc.	N/A	1.4		Ind.	N/A	Ind.	Idl, Ib,
99	98	N-Nitrosodiphenylamine	5	Ind.	Inc.	N/A	16		Ind.	N/A	Ind.	Ib,
100	99	Phenanthrene	5	Ind.	Inc.	0.0061	N.Obj.		Ind.	No	Ind.	Io,
101	100	Pyrene	5	Ind.	Inc.	0.0051	11000		No	No	No	No
102	101	1,2,4-Trichlorobenzene	0.01 to 0.25	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
103	102	Aldrin	0.01 to 0.25	Ind.	Inc.	N/A	0.00014		Ind.	N/A	Ind.	Idl, Ib,
104	103	alpha-BHC	0.01 to 0.25	0.04	Yes	N/A	0.013		Ind.	N/A	Yes	Yes
105	104	beta-BHC	0.01 to 0.25	Ind.	Inc.	N/A	0.046		Ind.	N/A	Ind.	Idl, Ib,
106	105	gamma-BHC	NA	Ind.	Inc.	N/A	0.063		Ind.	N/A	Ind.	Idl, Ib,
107	106	delta-BHC	0.02 to 0.5	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
108	107	Chlordane	0.01 to 5	Ind.	Inc.	0.00018	0.00059		Ind.	No	Ind.	Idl,
109	108	4,4-DDT	0.01 to 5	Ind.	Inc.	0.000066	0.00059		Ind.	No	Ind.	Idl,
110	109	4,4-DDE	0.01 to 5	Ind.	Inc.	0.00069	0.00059		Ind.	Yes	Yes	Yes
111	110	4,4-DDD	0.01 to 0.1	Ind.	Inc.	0.000313	0.00084		Ind.	No	Ind.	Idl,
112	111	Dieldrin	0.01 to 0.5	0.08	Yes	0.000264	0.00014		Ind.	Yes	Yes	Yes
113	112	alpha-Endosulfan	0.01 to 0.5	Ind.	Inc.	0.000031	0.0087		Ind.	No	Ind.	Idl,
114	113	beta-Endosulfan	0.01 to 1.5	Ind.	Inc.	0.000069	0.0087		Ind.	No	Ind.	Idl,
115	114	Endosulfan Sulfate	0.01 to 0.1	Ind.	Inc.	0.000011	240		No	No	No	No
116	115	Endrin	0.01 to 0.05	Ind.	Inc.	0.000016	0.0023		Ind.	No	Ind.	Idl,
117	116	Endrin Aldehyde	0.01 to 0.05	Ind.	Inc.	N/A	0.81		Ind.	N/A	Ind.	Ib,
118	117	Heptachlor	0.01 to 0.05	Ind.	Inc.	0.000019	0.00021		Ind.	No	Ind.	Idl,
119	118	Heptchlor Epoxide	NA	Ind.	Inc.	0.000094	0.00011		Ind.	No	Ind.	Idl,
120	119 -125	PCBs	0.1 to 2	Ind.	Inc.	N/A	0.00017		Ind.	N/A	Ind.	Idl, Ib,
121	126	Toxaphene	NA	Ind.	Inc.	N/A	0.0002		Ind.	N/A	Ind.	Idl, Ib,
122		Tributyltin	0	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
123		Chlorpyrifos	0	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,
124		Diazinon	0	Ind.	Inc.	N/A	N.Obj.		Ind.	N/A	Ind.	Ib, Io,

	A	B	Z	AA	AB	AC	AD	AE	AI	AJ	AK	AL
1												
2				Step 3	Step 4	Step 5				Step 6	Step 7	
3												
4	# in CTR	CONSTITUENT	Range of Detection Limits (Discharger Data); Single value means only one detection limit.	MEC (= max detected, or if all ND, and any DL< WQO, then lowest del. limit)	MEC > WQO? (yes=Y RP)	Background = Max Observed Value, Central Bay RMP Sites (enter by hand)	Governing WQO	Arithmetic Mean of Ambient Background for Human Health Calculations (enter by hand)	Indeterminacy?	bckgrd > WQO; no=N RP, yes=Y RP (NA=bckgrnd not available, B= bckgmd)	Final or Interim limit (Yes if any yeses in left columns)	RP? Cause of Indeterminacy Y = Yes, N=No, Ib=no bkgmd, Io= no WQO , Idl =all detection limits >WQO
125												
126												

		SIP Procedure
		Step 5
# in CTR	CONSTITUENT	Background = Max Observed Value, Central Bay RMP Sites, ug/L
2	Arsenic	2.22
4	Cadmium	0.127
5b	Chromium	4.4
6	Copper	2.455
7	Lead	0.804
	Lead for CV calculation	
8	Mercury	0.006
9	Nickel	3.5
10	Selenium	0.19
11	Silver	0.068
13	Zinc	4.6
14	Cyanide	N/A
16	2,3,7,8-TCDD (Dioxin)	N/A
17	Acrolein	N/A
18	Acrylonitrile	
19	Benzene	N/A
20	Bromoform	
21	Carbon Tetrachloride	
22	Chlorobenzene	
23	Chlordibromomethane	
24	Chloroethane	
25	2-Chloroethylvinyl Ether	
26	Chloroform	N/A
27	Dichlorobromomethane	
28	1,1-Dichloroethane	
29	1,2-Dichloroethane	
30	1,1-Dichloroethylene	
31	1,2-Dichloropropane	
32	1,3-Dichloropropylene	
33	Ethylbenzene	
34	Methyl Bromide	
35	Methyl Chloride	N/A
36	Methylene Chloride	
37	1,1,2,2-Tetrachloroethane	
38	Tetrachloroethylene	
39	Toluene	N/A
40	1,2-Trans-Dichloroethylene	
41	1,1,1-Trichloroethane	
42	1,1,2-Trichloroethane	
43	Trichloroethylene	
44	Vinyl Chloride	
45	2-Chlorophenol	N/A
46	2,4-Dichlorophenol	N/A
47	2,4-Dimethylphenol	N/A
48	2-Methyl-4,6-Dinitrophenol	N/A
49	2,4-Dinitrophenol	N/A

		SIP Procedure
		Step 5
# in CTR	CONSTITUENT	Background = Max Observed Value, Central Bay RMP Sites, ug/L
50	2-Nitrophenol	N/A
51	4-Nitrophenol	N/A
52	3-Methyl-4-Chlorophenol	N/A
53	Pentachlorophenol	N/A
54	Phenol	N/A
55	2,4,6-Trichlorophenol	N/A
56	Acenaphthene	0.0015
57	Acenephthylene	0.00053
58	Anthracene	0.0005
59	Benzidine	N/A
60	Benzo(a)Anthracene	0.0053
61	Benzo(a)Pyrene	0.0025
62	Benzo(b)Fluoranthene	0.0046
63	Benzo(ghi)Perylene	0.006
64	Benzo(k)Fluoranthene	0.0015
65	Bis(2-Chloroethoxy)Methane	N/A
66	Bis(2-Chloroethyl)Ether	N/A
67	Bis(2-Chloroisopropyl)Ether	N/A
68	Bis(2-Ethylhexyl)Phthalate	N/A
69	4-Bromophenyl Phenyl Ether	N/A
70	Butylbenzyl Phthalate	N/A
71	2-Chloronaphthalene	N/A
72	4-Chlorophenyl Phenyl Ether	N/A
73	Chrysene	0.0041
74	Dibenzo(a,h)Anthracene	0.0006
75	1,2 Dichlorobenzene	N/A
76	1,3 Dichlorobenzene	N/A
77	1,4 Dichlorobenzene	N/A
78	3,3[1]-Dichlorobenzidine	N/A
79	Diethyl Phthalate	N/A
80	Dimethyl Phthalate	N/A
81	Di-n-Butyl Phthalate	N/A
82	2,4-Dinitrotoluene	N/A
83	2,6-Dinitrotoluene	N/A
84	Di-n-Octyl Phthalate	N/A
85	1,2-Diphenylhydrazine	N/A
86	Fluoranthene	0.007
87	Fluorene	0.002078
88	Hexachlorobenzene	N/A
89	Hexachlorobutadiene	N/A
90	Hexachlorocyclopentadiene	N/A
91	Hexachloroethane	N/A
92	Indeno(1,2,3-cd) Pyrene	0.004
93	Isophorone	N/A
94	naphthalene	0.00229

		SIP Procedure
		Step 5
# in CTR	CONSTITUENT	Background = Max Observed Value, Central Bay RMP Sites, ug/L
95	Nitrobenzene	N/A
96	N-Nitrosodimethylamine	N/A
97	N-Nitrosodi-n-Propylamine	N/A
98	N-Nitrosodiphenylamine	N/A
99	Phenanthrene	0.0061
100	Pyrene	0.0051
101	1,2,4-Trichlorobenzene	N/A
102	Aldrin	N/A
103	alpha-BHC	N/A
104	beta-BHC	N/A
105	gamma-BHC	N/A
106	delta-BHC	N/A
107	Chlordane	0.00018
108	4,4-DDT	0.000066
109	4,4-DDE	0.00069
110	4,4-DDD	0.000313
111	Dieldrin	0.000264
112	alpha-Endosulfan	0.000031
113	beta-Endosulfan	0.000069
114	Endosulfan Sulfate	0.000011
115	Endrin	0.000016
116	Endrin Aldehyde	N/A
117	Heptachlor	0.000019
118	Heptchlor Epoxide	0.000094
119 -125	PCBs	N/A
126	Toxaphene	N/A
	Tributyltin	N/A
	Chlorpyrifos	N/A
	Diazinon	N/A

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2										Check these values before finalizing the RPA.				
3			Existing Permit Limits							z value=	2.326		Sampling Frequency (time	
4	# in CTR	CONSTITUENT	Monthly Average	Daily Maximum	Dilution (enter by hand)	Acute ECA	Acute Sigma	Chronic ECA	Chronic Sigma	Human Health ECA	Acute ECA Multiplier	Chronic ECA Multiplier	Acute LTA	Chronic LTA
5	2	Arsenic		200	9	-	0.554513029	-	0.293560379	-	0.321083214	0.527433444	-	-
6	4	Cadmium		30	9	-	0.554513029	-	0.293560379	-	0.321083214	0.527433444	-	-
7	5b	Chromium		110	9	-	0.554513029	-	0.293560379	-	0.321083214	0.527433444	-	-
8	6	Copper		37	9	26.91	0.435878958	15.254398	0.225803651	-	0.398973922	0.606697085	10.73439336	9.254799
9	7	Lead		53	9	-	0.554513029	-	0.293560379	-	0.321083214	0.527433444	-	-
10		Lead for CV calculation											-	
11	8	Mercury	0.21	1	0	2.10	1.09238227	0.025	0.673742351	0.051	0.14309713	0.26180369	0.300503973	0.006545
12	9	Nickel		65	9	708.50	0.531468073	39.5	0.280068387	-	0.334551122	0.542146013	237.0294696	21.41477
13	10	Selenium		50	0	5.00	0.554513029	5	0.293560379	-	0.321083214	0.527433444	1.605416069	2.637167
14	11	Silver		23	9	21.79	0.476038905	No Obj	0.248286749	-	0.370108167	0.578861623	8.06391674	No Obj
15	13	Zinc		580	9	908.60	0.234009345	538.6	0.118210735	-	0.596351185	0.764929749	541.8446867	411.9912
16	14	Cyanide		10	9	No Bkgrnd	0.6947575	No Bkgrnd	0.379726433	2200000	0.252925082	0.44434784	-	-
17	16	2,3,7,8-TCDD (Dioxin)			0	No Bkgrnd	0.554513029	No Obj	0.293560379	0.000000014	0.321083214	0.527433444	-	-
18	17	Acrolein				No Bkgrnd	0.554513029	No Obj	0.293560379	780	0.321083214	0.527433444	-	-
19	18	Acrylonitrile				No Bkgrnd	0.554513029	No Obj	0.293560379	0.66	0.321083214	0.527433444	-	-
20	19	Benzene				No Bkgrnd	0.554513029	No Obj	0.293560379	71	0.321083214	0.527433444	-	-
21	20	Bromoform				No Bkgrnd	0.554513029	No Obj	0.293560379	360	0.321083214	0.527433444	-	-
22	21	Carbon Tetrachloride				No Bkgrnd	0.554513029	No Obj	0.293560379	4.4	0.321083214	0.527433444	-	-
23	22	Chlorobenzene				No Bkgrnd	0.554513029	No Obj	0.293560379	21000	0.321083214	0.527433444	-	-
24	23	Chlordibromomethane				No Bkgrnd	0.554513029	No Obj	0.293560379	34	0.321083214	0.527433444	-	-
25	24	Chloroethane				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
26	25	2-Chloroethylvinyl Ether				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
27	26	Chloroform				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
28	27	Dichlorobromomethane				No Bkgrnd	0.554513029	No Obj	0.293560379	46	0.321083214	0.527433444	-	-
29	28	1,1-Dichloroethane				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
30	29	1,2-Dichloroethane				No Bkgrnd	0.554513029	No Obj	0.293560379	99	0.321083214	0.527433444	-	-
31	30	1,1-Dichloroethylene				No Bkgrnd	0.554513029	No Obj	0.293560379	3.2	0.321083214	0.527433444	-	-
32	31	1,2-Dichloropropane				No Bkgrnd	0.554513029	No Obj	0.293560379	39	0.321083214	0.527433444	-	-
33	32	1,3-Dichloropropylene				No Bkgrnd	0.554513029	No Obj	0.293560379	1700	0.321083214	0.527433444	-	-
34	33	Ethylbenzene				No Bkgrnd	0.554513029	No Obj	0.293560379	29000	0.321083214	0.527433444	-	-
35	34	Methyl Bromide				No Bkgrnd	0.554513029	No Obj	0.293560379	4000	0.321083214	0.527433444	-	-
36	35	Methyl Chloride				No Bkgrnd	0.554513029	No Obj	0.293560379	#VALUE!	0.321083214	0.527433444	-	-
37	36	Methylene Chloride				No Bkgrnd	0.554513029	No Obj	0.293560379	1600	0.321083214	0.527433444	-	-
38	37	1,1,2,2-Tetrachloroethane				No Bkgrnd	0.554513029	No Obj	0.293560379	11	0.321083214	0.527433444	-	-
39	38	Tetrachloroethylene			9	No Bkgrnd	0.554513029	No Obj	0.293560379	88.5	0.321083214	0.527433444	-	-
40	39	Toluene			9	No Bkgrnd	0.554513029	No Obj	0.293560379	2000000	0.321083214	0.527433444	-	-
41	40	1,2-Trans-Dichloroethylene				No Bkgrnd	0.554513029	No Obj	0.293560379	140000	0.321083214	0.527433444	-	-
42	41	1,1,1-Trichloroethane			0	No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
43	42	1,1,2-Trichloroethane				No Bkgrnd	0.554513029	No Obj	0.293560379	42	0.321083214	0.527433444	-	-
44	43	Trichloroethylene				No Bkgrnd	0.554513029	No Obj	0.293560379	81	0.321083214	0.527433444	-	-
45	44	Vinyl Chloride				No Bkgrnd	0.554513029	No Obj	0.293560379	525	0.321083214	0.527433444	-	-
46	45	2-Chlorophenol				No Bkgrnd	0.554513029	No Obj	0.293560379	400	0.321083214	0.527433444	-	-
47	46	2,4-Dichlorophenol				No Bkgrnd	0.554513029	No Obj	0.293560379	790	0.321083214	0.527433444	-	-
48	47	2,4-Dimethylphenol				No Bkgrnd	0.554513029	No Obj	0.293560379	2300	0.321083214	0.527433444	-	-
49	48	2-Methyl-4,6-Dinitrophenol				No Bkgrnd	0.554513029	No Obj	0.293560379	765	0.321083214	0.527433444	-	-
50	49	2,4-Dinitrophenol				No Bkgrnd	0.554513029	No Obj	0.293560379	14000	0.321083214	0.527433444	-	-

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2										Check these values before finalizing the RPA.				
3			Existing Permit Limits							z value=	2.326		Sampling Frequency (time	
4	# in CTR	CONSTITUENT	Monthly Average	Daily Maximum	Dilution (enter by hand)	Acute ECA	Acute Sigma	Chronic ECA	Chronic Sigma	Human Health ECA	Acute ECA Multiplier	Chronic ECA Multiplier	Acute LTA	Chronic LTA
51	50	2-Nitrophenol				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
52	51	4-Nitrophenol				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
53	52	3-Methyl-4-Chlorophenol				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
54	53	Pentachlorophenol				No Bkgrnd	0.554513029	No Bkgrnd	0.293560379	8.2	0.321083214	0.527433444	-	-
55	54	Phenol				No Bkgrnd	0.554513029	No Obj	0.293560379	4600000	0.321083214	0.527433444	-	-
56	55	2,4,6-Trichlorophenol				No Bkgrnd	0.554513029	No Obj	0.293560379	6.5	0.321083214	0.527433444	-	-
57	56	Acenaphthene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
58	57	Acenephthylene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
59	58	Anthracene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
60	59	Benzidine				No Bkgrnd	0.554513029	No Obj	0.293560379	0.00054	0.321083214	0.527433444	-	-
61	60	Benzo(a)Anthracene				-	0.554513029	No Obj	0.293560379	0.049	0.321083214	0.527433444	-	-
62	61	Benzo(a)Pyrene				-	0.554513029	No Obj	0.293560379	0.049	0.321083214	0.527433444	-	-
63	62	Benzo(b)Fluoranthene				-	0.554513029	No Obj	0.293560379	0.049	0.321083214	0.527433444	-	-
64	63	Benzo(ghi)Perylene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
65	64	Benzo(k)Fluoranthene				-	0.554513029	No Obj	0.293560379	0.049	0.321083214	0.527433444	-	-
66	65	Bis(2-Chloroethoxy)Methane				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
67	66	Bis(2-Chloroethyl)Ether				No Bkgrnd	0.554513029	No Obj	0.293560379	1.4	0.321083214	0.527433444	-	-
68	67	Bis(2-Chloroisopropyl)Ether				No Bkgrnd	0.554513029	No Obj	0.293560379	170000	0.321083214	0.527433444	-	-
69	68	Bis(2-Ethylhexyl)Phthalate			0	No Bkgrnd	0.554513029	No Obj	0.293560379	5.9	0.321083214	0.527433444	-	-
70	69	4-Bromophenyl Phenyl Ether				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
71	70	Butylbenzyl Phthalate				No Bkgrnd	0.554513029	No Obj	0.293560379	5200	0.321083214	0.527433444	-	-
72	71	2-Chloronaphthalene				No Bkgrnd	0.554513029	No Obj	0.293560379	4300	0.321083214	0.527433444	-	-
73	72	4-Chlorophenyl Phenyl Ether				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
74	73	Chrysene				-	0.554513029	No Obj	0.293560379	0.049	0.321083214	0.527433444	-	-
75	74	Dibenzo(a,h)Anthracene				-	0.554513029	No Obj	0.293560379	0.049	0.321083214	0.527433444	-	-
76	75	1,2 Dichlorobenzene				No Bkgrnd	0.554513029	No Obj	0.293560379	17000	0.321083214	0.527433444	-	-
77	76	1,3 Dichlorobenzene				No Bkgrnd	0.554513029	No Obj	0.293560379	2600	0.321083214	0.527433444	-	-
78	77	1,4 Dichlorobenzene				No Bkgrnd	0.554513029	No Obj	0.293560379	2600	0.321083214	0.527433444	-	-
79	78	3,3'-Dichlorobenzidine				No Bkgrnd	0.554513029	No Obj	0.293560379	0.077	0.321083214	0.527433444	-	-
80	79	Diethyl Phthalate				No Bkgrnd	0.554513029	No Obj	0.293560379	120000	0.321083214	0.527433444	-	-
81	80	Dimethyl Phthalate				No Bkgrnd	0.554513029	No Obj	0.293560379	2900000	0.321083214	0.527433444	-	-
82	81	Di-n-Butyl Phthalate				No Bkgrnd	0.554513029	No Obj	0.293560379	12000	0.321083214	0.527433444	-	-
83	82	2,4-Dinitrotoluene				No Bkgrnd	0.554513029	No Obj	0.293560379	9.1	0.321083214	0.527433444	-	-
84	83	2,6-Dinitrotoluene				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
85	84	Di-n-Octyl Phthalate				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
86	85	1,2-Diphenylhydrazine				No Bkgrnd	0.554513029	No Obj	0.293560379	0.54	0.321083214	0.527433444	-	-
87	86	Fluoranthene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
88	87	Fluorene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
89	88	Hexachlorobenzene				No Bkgrnd	0.554513029	No Obj	0.293560379	0.00077	0.321083214	0.527433444	-	-
90	89	Hexachlorobutadiene				No Bkgrnd	0.554513029	No Obj	0.293560379	50	0.321083214	0.527433444	-	-
91	90	Hexachlorocyclopentadiene				No Bkgrnd	0.554513029	No Obj	0.293560379	17000	0.321083214	0.527433444	-	-
92	91	Hexachloroethane				No Bkgrnd	0.554513029	No Obj	0.293560379	8.9	0.321083214	0.527433444	-	-
93	92	Indeno(1,2,3-cd) Pyrene				-	0.554513029	No Obj	0.293560379	0.049	0.321083214	0.527433444	-	-
94	93	Isophorone				No Bkgrnd	0.554513029	No Obj	0.293560379	600	0.321083214	0.527433444	-	-
95	94	naphthalene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
96	95	Nitrobenzene				No Bkgrnd	0.554513029	No Obj	0.293560379	1900	0.321083214	0.527433444	-	-

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2										Check these values before finalizing the RPA				
3			Existing Permit Limits							z value=	2.326		Sampling Frequency (time	
4	# in CTR	CONSTITUENT	Monthly Average	Daily Maximum	Dilution (enter by hand)	Acute ECA	Acute Sigma	Chronic ECA	Chronic Sigma	Human Health ECA	Acute ECA Multiplier	Chronic ECA Multiplier	Acute LTA	Chronic LTA
97	96	N-Nitrosodimethylamine				No Bkgrnd	0.554513029	No Obj	0.293560379	8.1	0.321083214	0.527433444	-	-
98	97	N-Nitrosodi-n-Propylamine				No Bkgrnd	0.554513029	No Obj	0.293560379	1.4	0.321083214	0.527433444	-	-
99	98	N-Nitrosodiphenylamine				No Bkgrnd	0.554513029	No Obj	0.293560379	16	0.321083214	0.527433444	-	-
100	99	Phenanthrene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
101	100	Pyrene				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
102	101	1,2,4-Trichlorobenzene				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
103	102	Aldrin				No Bkgrnd	0.554513029	No Obj	0.293560379	0.00014	0.321083214	0.527433444	-	-
104	103	alpha-BHC			0	No Bkgrnd	0.554513029	No Obj	0.293560379	0.013	0.321083214	0.527433444	-	-
105	104	beta-BHC				No Bkgrnd	0.554513029	No Obj	0.293560379	0.046	0.321083214	0.527433444	-	-
106	105	gamma-BHC				No Bkgrnd	0.554513029	No Obj	0.293560379	0.063	0.321083214	0.527433444	-	-
107	106	delta-BHC				No Bkgrnd	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
108	107	Chlordane				0.09	0.554513029	0.004	0.293560379	0.00059	0.321083214	0.527433444	0.028897489	0.00211
109	108	4,4-DDT				0.13	0.554513029	0.001	0.293560379	0.00059	0.321083214	0.527433444	0.041740818	0.000527
110	109	4,4-DDE			0	-	0.554513029	No Obj	0.293560379	0.00059	0.321083214	0.527433444	-	-
111	110	4,4-DDD				-	0.554513029	No Obj	0.293560379	0.00084	0.321083214	0.527433444	-	-
112	111	Dieldrin			0	0.71	0.554513029	0.0019	0.293560379	0.00014	0.321083214	0.527433444	0.227969082	0.001002
113	112	alpha-Endosulfan				0.03	0.554513029	0.0087	0.293560379	240	0.321083214	0.527433444	0.010916829	0.004589
114	113	beta-Endosulfan				0.03	0.554513029	0.0087	0.293560379	240	0.321083214	0.527433444	0.010916829	0.004589
115	114	Endosulfan Sulfate				-	0.554513029	No Obj	0.293560379	-	0.321083214	0.527433444	-	-
116	115	Endrin				0.04	0.554513029	0.0023	0.293560379	0.81	0.321083214	0.527433444	0.011880079	0.001213
117	116	Endrin Aldehyde				No Bkgrnd	0.554513029	No Obj	0.293560379	0.81	0.321083214	0.527433444	-	-
118	117	Heptachlor				0.05	0.554513029	0.0036	0.293560379	0.00021	0.321083214	0.527433444	0.01701741	0.001899
119	118	Heptchlor Epoxide				0.05	0.554513029	0.0036	0.293560379	0.00011	0.321083214	0.527433444	0.01701741	0.001899
120	119 -125	PCBs				No Bkgrnd	0.554513029	No Bkgrnd	0.293560379	0.00017	0.321083214	0.527433444	-	-
121	126	Toxaphene				No Bkgrnd	0.554513029	No Bkgrnd	0.293560379	0.00075	0.321083214	0.527433444	-	-
122		Tnbutyltin				No Bkgrnd	No Var	No Bkgrnd	No Var.	-	-	-	-	-
123		Chlorpyrifos				No Bkgrnd	No Var	No Bkgrnd	No Var.	-	-	-	-	-
124		Diazinon				No Bkgrnd	No Var	No Obj	No Var.	0.6	-	-	-	-

	A	B	O	P	Q	R	S	T	U	V	W	X	Y	Z
1														
2						10								
3			s per month) =	4	AMEL Z =	1.645		MDEL Z=	2.326			Final Permit Limits, ug/L	303(d) listed?	Interim Permit Limits
4	# in CTR	CONSTITUENT	Lowest LTA Value	Sigma-N	AMEL Multiplier	AMEL, Aquatic Life	AMEL Human Health	MDEL Multiplier	MDEL, Aquatic Life	MDEL, Human Health	Daily Maximum	Monthly Average		Monthly Average, ug/L
5	2	Arsenic	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
6	4	Cadmium	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
7	5b	Chromium	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
8	6	Copper	9.254798553	0.225803651	1.41	13.08015	-	2.51	23.1965	-	23.19649996	13.080146	Yes	25
9	7	Lead	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
10		Lead for CV calculation										-		
11	8	Mercury	0.006545092	0.673742351	2.41	0.025	0.05100	6.99	0.045739	0.147630937	0.045738809	0.025000	Yes	0.087
12	9	Nickel	21.41476751	0.280068387	1.52	32.64116	-	2.99	64.01045	-	64.01044902	32.641161	Yes	
13	10	Selenium	1.605416069	0.293560379	1.55	2.492287	-	3.11	5	-	5	-		
14	11	Silver	8.06391674	0.248286749	1.46	11.76358	-	2.70	21.788	-	21.788	11.763575		
15	13	Zinc	411.991163	0.118210735	1.21	496.9412	-	1.68	690.8533	-	690.8532645	496.941180		
16	14	Cyanide	-	0.379726433	1.74	-	############	3.95	-	5005640.681	10	-		10
17	16	2,3,7,8-TCDD (Dioxin)	-	0.293560379	1.55	-	1.400E-08	3.11	-	2.8087E-08	Ind.	Ind.		
18	17	Acrolein	-	0.293560379	1.55	-	780.00000	3.11	-	1564.827543	Ind.	Ind.		
19	18	Acrylonitrile	-	0.293560379	1.55	-	0.66000	3.11	-	1.324084844	Ind.	Ind.		
20	19	Benzene	-	0.293560379	1.55	-	71.00000	3.11	-	142.4394302	Ind.	Ind.		
21	20	Bromoform	-	0.293560379	1.55	-	360.00000	3.11	-	722.2280966	Ind.	Ind.		
22	21	Carbon Tetrachloride	-	0.293560379	1.55	-	4.40000	3.11	-	8.827232291	Ind.	Ind.		
23	22	Chlorobenzene	-	0.293560379	1.55	-	21000.00000	3.11	-	42129.9723	Ind.	Ind.		
24	23	Chlordibromomethane	-	0.293560379	1.55	-	34.00000	3.11	-	68.21043134	Ind.	Ind.		
25	24	Chloroethane	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
26	25	2-Chloroethylvinyl Ether	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
27	26	Chloroform	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
28	27	Dichlorobromomethane	-	0.293560379	1.55	-	46.00000	3.11	-	92.28470123	Ind.	Ind.		
29	28	1,1-Dichloroethane	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
30	29	1,2-Dichloroethane	-	0.293560379	1.55	-	99.00000	3.11	-	198.6127266	Ind.	Ind.		
31	30	1,1-Dichloroethylene	-	0.293560379	1.55	-	3.20000	3.11	-	6.419805303	Ind.	Ind.		
32	31	1,2-Dichloropropane	-	0.293560379	1.55	-	39.00000	3.11	-	78.24137713	Ind.	Ind.		
33	32	1,3-Dichloropropylene	-	0.293560379	1.55	-	1700.00000	3.11	-	3410.521567	Ind.	Ind.		
34	33	Ethylbenzene	-	0.293560379	1.55	-	29000.00000	3.11	-	58179.48556	Ind.	Ind.		
35	34	Methyl Bromide	-	0.293560379	1.55	-	4000.00000	3.11	-	8024.756629	Ind.	Ind.		
36	35	Methyl Chloride	-	0.293560379	1.55	-	#VALUE!	3.11	-	#VALUE!	Ind.	Ind.		
37	36	Methylene Chloride	-	0.293560379	1.55	-	1600.00000	3.11	-	3209.902651	Ind.	Ind.		
38	37	1,1,2,2-Tetrachloroethane	-	0.293560379	1.55	-	11.00000	3.11	-	22.06808073	Ind.	Ind.		
39	38	Tetrachloroethylene	-	0.293560379	1.55	-	88.50000	3.11	-	177.5477404	Ind.	Ind.		
40	39	Toluene	-	0.293560379	1.55	-	############	3.11	-	4012378.314	Ind.	Ind.		
41	40	1,2-Trans-Dichloroethylene	-	0.293560379	1.55	-	140000.00000	3.11	-	280866.482	Ind.	Ind.		
42	41	1,1,1-Trichloroethane	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
43	42	1,1,2-Trichloroethane	-	0.293560379	1.55	-	42.00000	3.11	-	84.2599446	Ind.	Ind.		
44	43	Trichloroethylene	-	0.293560379	1.55	-	81.00000	3.11	-	162.5013217	Ind.	Ind.		
45	44	Vinyl Chloride	-	0.293560379	1.55	-	525.00000	3.11	-	1053.249307	Ind.	Ind.		
46	45	2-Chlorophenol	-	0.293560379	1.55	-	400.00000	3.11	-	802.4756629	Ind.	Ind.		
47	46	2,4-Dichlorophenol	-	0.293560379	1.55	-	790.00000	3.11	-	1584.889434	Ind.	Ind.		
48	47	2,4-Dimethylphenol	-	0.293560379	1.55	-	2300.00000	3.11	-	4614.235061	Ind.	Ind.		
49	48	2-Methyl-4,6-Dinitrophenol	-	0.293560379	1.55	-	765.00000	3.11	-	1534.734705	Ind.	Ind.		
50	49	2,4-Dinitrophenol	-	0.293560379	1.55	-	14000.00000	3.11	-	28086.6482	Ind.	Ind.		

	A	B	O	P	Q	R	S	T	U	V	W	X	Y	Z
1														
2						10								
3			s per month) =	4	AMEL Z =	1.645		MDEL Z=	2.326			Final Permit Limits, ug/L	303(d) listed?	Interim Permit Limits
4	# in CTR	CONSTITUENT	Lowest LTA Value	Sigma-N	AMEL Multiplier	AMEL, Aquatic Life	AMEL Human Health	MDEL Multiplier	MDEL, Aquatic Life	MDEL, Human Health	Daily Maximum	Monthly Average		Monthly Average, ug.L
51	50	2-Nitrophenol	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
52	51	4-Nitrophenol	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
53	52	3-Methyl-4-Chlorophenol	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
54	53	Pentachlorophenol	-	0.293560379	1.55	-	8.20000	3.11	-	16.45075109	Ind.	Ind.		
55	54	Phenol	-	0.293560379	1.55	-	###########	3.11	-	9228470.123	Ind.	Ind.		
56	55	2,4,6-Trichlorophenol	-	0.293560379	1.55	-	6.50000	3.11	-	13.04022952	Ind.	Ind.		
57	56	Acenaphthene	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
58	57	Acenephthylene	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
59	58	Anthracene	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
60	59	Benzidine	-	0.293560379	1.55	-	0.00054	3.11	-	0.001083342	Ind.	Ind.		
61	60	Benzo(a)Anthracene	-	0.293560379	1.55	-	0.04900	3.11	-	0.098303269	Ind.	Ind.		
62	61	Benzo(a)Pyrene	-	0.293560379	1.55	-	0.04900	3.11	-	0.098303269	Ind.	Ind.		
63	62	Benzo(b)Fluoranthene	-	0.293560379	1.55	-	0.04900	3.11	-	0.098303269	Ind.	Ind.		
64	63	Benzo(ghi)Perylene	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
65	64	Benzo(k)Fluoranthene	-	0.293560379	1.55	-	0.04900	3.11	-	0.098303269	Ind.	Ind.		
66	65	Bis(2-Chloroethoxy)Methane	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
67	66	Bis(2-Chloroethyl)Ether	-	0.293560379	1.55	-	1.40000	3.11	-	2.80866482	Ind.	Ind.		
68	67	Bis(2-Chloroisopropyl)Ether	-	0.293560379	1.55	-	170000.00000	3.11	-	341052.1567	Ind.	Ind.		
69	68	Bis(2-Ethylhexyl)Phthalate	-	0.293560379	1.55	-	5.90000	3.11	-	11.83651603	Ind.	Ind.		
70	69	4-Bromophenyl Phenyl Ether	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
71	70	Butylbenzyl Phthalate	-	0.293560379	1.55	-	5200.00000	3.11	-	10432.18362	Ind.	Ind.		
72	71	2-Chloronaphthalene	-	0.293560379	1.55	-	4300.00000	3.11	-	8626.613376	Ind.	Ind.		
73	72	4-Chlorophenyl Phenyl Ether	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
74	73	Chrysene	-	0.293560379	1.55	-	0.04900	3.11	-	0.098303269	Ind.	Ind.		
75	74	Dibenzo(a,h)Anthracene	-	0.293560379	1.55	-	0.04900	3.11	-	0.098303269	Ind.	Ind.		
76	75	1,2 Dichlorobenzene	-	0.293560379	1.55	-	17000.00000	3.11	-	34105.21567	Ind.	Ind.		
77	76	1,3 Dichlorobenzene	-	0.293560379	1.55	-	2600.00000	3.11	-	5216.091809	Ind.	Ind.		
78	77	1,4 Dichlorobenzene	-	0.293560379	1.55	-	2600.00000	3.11	-	5216.091809	Ind.	Ind.		
79	78	3,3'-Dichlorobenzidine	-	0.293560379	1.55	-	0.07700	3.11	-	0.154476565	Ind.	Ind.		
80	79	Diethyl Phthalate	-	0.293560379	1.55	-	120000.00000	3.11	-	240742.6989	Ind.	Ind.		
81	80	Dimethyl Phthalate	-	0.293560379	1.55	-	###########	3.11	-	5817948.556	Ind.	Ind.		
82	81	Di-n-Butyl Phthalate	-	0.293560379	1.55	-	12000.00000	3.11	-	24074.26989	Ind.	Ind.		
83	82	2,4-Dinitrotoluene	-	0.293560379	1.55	-	9.10000	3.11	-	18.25632133	Ind.	Ind.		
84	83	2,6-Dinitrotoluene	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
85	84	Di-n-Octyl Phthalate	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
86	85	1,2-Diphenylhydrazine	-	0.293560379	1.55	-	0.54000	3.11	-	1.083342145	Ind.	Ind.		
87	86	Fluoranthene	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
88	87	Fluorene	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
89	88	Hexachlorobenzene	-	0.293560379	1.55	-	0.00077	3.11	-	0.001544766	Ind.	Ind.		
90	89	Hexachlorobutadiene	-	0.293560379	1.55	-	50.00000	3.11	-	100.3094579	Ind.	Ind.		
91	90	Hexachlorocyclopentadiene	-	0.293560379	1.55	-	17000.00000	3.11	-	34105.21567	Ind.	Ind.		
92	91	Hexachloroethane	-	0.293560379	1.55	-	8.90000	3.11	-	17.8550835	Ind.	Ind.		
93	92	Indeno(1,2,3-cd) Pyrene	-	0.293560379	1.55	-	0.04900	3.11	-	0.098303269	Ind.	Ind.		
94	93	Isophorone	-	0.293560379	1.55	-	600.00000	3.11	-	1203.713494	Ind.	Ind.		
95	94	naphthalene	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
96	95	Nitrobenzene	-	0.293560379	1.55	-	1900.00000	3.11	-	3811.759399	Ind.	Ind.		

	A	B	O	P	Q	R	S	T	U	V	W	X	Y	Z
1														
2						10								
3			s per month) =	4	AMEL Z =	1.645		MDEL Z=	2.326		Final Permit Limits, ug/L		303(d) listed?	Interim Permit Limits
4	# in CTR	CONSTITUENT	Lowest LTA Value	Sigma-N	AMEL Multiplier	AMEL, Aquatic Life	AMEL Human Health	MDEL Multiplier	MDEL, Aquatic Life	MDEL, Human Health	Daily Maximum	Monthly Average		Monthly Average, ug.L
97	96	N-Nitrosodimethylamine	-	0.293560379	1.55	-	8.10000	3.11	-	16.25013217	Ind.	Ind.		
98	97	N-Nitrosodi-n-Propylamine	-	0.293560379	1.55	-	1.40000	3.11	-	2.80866482	Ind.	Ind.		
99	98	N-Nitrosodiphenylamine	-	0.293560379	1.55	-	16.00000	3.11	-	32.09902651	Ind.	Ind.		
100	99	Phenanthrene	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
101	100	Pyrene	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
102	101	1,2,4-Trichlorobenzene	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
103	102	Aldrin	-	0.293560379	1.55	-	0.00014	3.11	-	0.000280866	Ind.	Ind.		
104	103	alpha-BHC	-	0.293560379	1.55	-	0.01300	3.11	-	0.026080459	0.026080459	0.013000		0.04
105	104	beta-BHC	-	0.293560379	1.55	-	0.04600	3.11	-	0.092284701	Ind.	Ind.		
106	105	gamma-BHC	-	0.293560379	1.55	-	0.06300	3.11	-	0.126389917	Ind.	Ind.		
107	106	delta-BHC	-	0.293560379	1.55	-	-	3.11	-	-	Ind.	Ind.		
108	107	Chlordane	0.002109734	0.293560379	1.55	0.004	0.00059	3.11	0.006571	0.001183652	Ind.	Ind.	Yes	
109	108	4,4-DDT	0.000527433	0.293560379	1.55	0.001	0.00059	3.11	0.001643	0.001183652	Ind.	Ind.	Yes	
110	109	4,4-DDE	-	0.293560379	1.55	-	0.00059	3.11	-	0.001183652	0.001183652	0.000590		
111	110	4,4-DDD	-	0.293560379	1.55	-	0.00084	3.11	-	0.001685199	Ind.	Ind.		
112	111	Dieldrin	0.001002124	0.293560379	1.55	0.0019	0.00014	3.11	0.003121	0.000280866	0.000280866	0.000140	Yes	0.075
113	112	alpha-Endosulfan	0.004588671	0.293560379	1.55	0.0087	240.00000	3.11	0.014291	481.4853977	Ind.	Ind.		
114	113	beta-Endosulfan	0.004588671	0.293560379	1.55	0.0087	240.00000	3.11	0.014291	481.4853977	Ind.	Ind.		
115	114	Endosulfan Sulfate	-	0.293560379	1.55	-	-	3.11	-	-	No RP	No RP		
116	115	Endrin	0.001213097	0.293560379	1.55	0.0023	0.81000	3.11	0.003778	1.625013217	Ind.	Ind.		
117	116	Endrin Aldehyde	-	0.293560379	1.55	-	0.81000	3.11	-	1.625013217	Ind.	Ind.		
118	117	Heptachlor	0.00189876	0.293560379	1.55	0.0036	0.00021	3.11	0.005914	0.0004213	Ind.	Ind.		
119	118	Heptchlor Epoxide	0.00189876	0.293560379	1.55	0.0036	0.00011	3.11	0.005914	0.000220681	Ind.	Ind.		
120	119 -125	PCBs	-	0.293560379	1.55	-	0.00017	3.11	-	0.000341052	Ind.	Ind.	Yes	
121	126	Toxaphene	-	0.293560379	1.55	-	0.00075	3.11	-	0.001504642	Ind.	Ind.		
122		Tributyltin	-	-	-	-	-	-	-	-	Ind.	Ind.		
123		Chlorpyrifos	-	-	-	-	-	-	-	-	Ind.	Ind.		
124		Diazinon	-	-	-	-	0.6	-	-	-	Ind.	Ind.		

MERCURY MASS LIMIT COMPUTATIONS					
Date [1]	Total Flow. Q, MGD [1]	Mercury Concentration, C, ug/l [1]	Mass =Q X C, g/day	12-Month Avg. Load , MAML, g/day [2]	Natural log of MAML (ln-MAML)
Jan-98	7.36	0.010	0.279		
Feb-98	9.36	0.200	7.086		
Mar-98	4.55	0.200	3.444		
Apr-98	4.48	0.200	3.391		
May-98	4.13	0.200	3.126		
Jun-98	3.91	0.200	2.960		
Jul-98	3.59	0.200	2.718		
Aug-98	3.53	0.200	2.672		
Sep-98	3.53	0.200	2.672		
Oct-98	3.55	0.200	2.687		
Nov-98	3.92	0.200	2.967		
Dec-98	3.91	0.200	2.960	**3.080**	1.1250
Jan-99	4.59	0.300	5.212	**3.491**	1.2503
Feb-99	6.28	0.010	0.238	**2.921**	1.0718
Mar-99	4.65	0.020	0.352	**2.663**	0.9795
Apr-99	4.71	0.010	0.178	**2.395**	0.8735
May-99	3.71	0.020	0.281	**2.158**	0.7692
Jun-99	3.66	0.020	0.277	**1.935**	0.6599
Jul-99	3.55	0.020	0.269	**1.730**	0.5484
Aug-99	3.60	0.200	2.725	**1.735**	0.5509
Sep-99	3.53	0.200	2.672	**1.735**	0.5509
Oct-99	3.51	0.200	2.657	**1.732**	0.5495
Nov-99	3.73	0.200	2.824	**1.720**	0.5425
Dec-99	3.61	0.200	2.733	**1.701**	0.5315
Jan-00	4.83	0.554	10.128	**2.111**	0.7472
Feb-00	6.81	0.007	0.180	**2.106**	0.7450
Mar-00	4.89	0.009	0.167	**2.091**	0.7376
Apr-00	3.95	0.011	0.164	**2.090**	0.7370
May-00	3.84	0.013	0.189	**2.082**	0.7334
Jun-00	3.70		0.000	**2.059**	0.7222
Jul-00	3.66	0.017	0.236	**2.056**	0.7209
Aug-00	3.67	0.004	0.056	**1.834**	0.6064
Sep-00	3.71	0.011	0.154	**1.624**	0.4849
Oct-00	4.04	0.008	0.122	**1.413**	0.3455
Nov-00	3.87	0.006	0.088	**1.185**	0.1695
Dec-00	3.94	0.010	0.149	**0.969**	(0.0310)
Avg	4.33				
	Count, n of 12-month moving average mass loads (MAMLs).			**25**	
	Maximum 12-month MAMLs			**3.491**	**grams per day (g/day)**
	Maximum 12-month MAMLs			**0.106**	**kilograms per month (kg/mo)**
	Average 12-month MAML			**2.025**	**g/day**
	Data distribution of 12-month moving average mass load			**ln-normal**	**per MiniTab analysis**
	Standard Deviation, ln(MAML)			**0.278**	
	Mean, ln(MAML)			**0.669**	
	Mean + 3 STDEV, ln(MAML)			**1.504**	
	Re-exponentiated [Mean+3 STDEV, ln(MAML)]			**4.501**	**g/day**
	99.7th percentile of 12-month moving average mass load			**4.439**	**g/day, per MiniTab analysis.**
	99.7th percentile of 12-month moving average mass load			**0.135**	**kg/mo**
		Mercury Mass Emission Limit =		**0.135**	**kg/mo**

Notes:

[1] Information from the Annual Reports and Self-Monitoring Reports

[2] MA [Hg] load in g/d is the moving average mercury load in grams per day. This calcuation is the product of the moving average flow, mercury concentration and a unit-conversion multiplier of 3.785.

Station Code	Station	Date	Cruise	Salinity, o/oo	
BB70	Alameda	2/7/96	10	17.8	
BB70	Alameda	4/30/96	11	23.2	
BB70	Alameda	7/26/96	12	28.8	
BB30	Oyster Point	2/5/96	10	22.2	
BB30	Oyster Point	4/30/96	11	23.2	
BB30	Oyster Point	7/26/96	12	28.8	
BB15	San Bruno Shoal	2/5/96	10	22.3	
BB15	San Bruno Shoal	4/30/96	11	21.1	
BB15	San Bruno Shoal	7/29/96	12	27.1	
BB70	Alameda	1/23/97	13	12.0	
BB70	Alameda	4/15/97	14	24.2	
BB70	Alameda	7/30/97	15	30.0	
BB30	Oyster Point	1/21/97	13	15.4	
BB30	Oyster Point	4/16/97	14	25.8	
BB30	Oyster Point	7/28/97	15	29.5	
BB15	San Bruno Shoal	1/21/97	13	12.9	
BB15	San Bruno Shoal	4/16/97	14	24.1	
BB15	San Bruno Shoal	7/28/97	15	28.9	
BB70	Alameda	1/29/98	16	21.0	
BB70	Alameda	4/20/98	17	27.9	
BB70	Alameda	7/22/98	18	25.6	
BB30	Oyster Point	1/27/98	16	19.5	
BB30	Oyster Point	4/20/98	17	16.7	
BB30	Oyster Point	7/20/98	18	24.6	
BB15	San Bruno Shoal	1/27/98	16	19.0	
BB15	San Bruno Shoal	4/20/98	17	16.8	
BB15	San Bruno Shoal	7/20/98	18	22.6	
BB70	Alameda	2/4/99	19	21.9	
BB70	Alameda	4/14/99	20	23.5	
BB70	Alameda	7/16/99	21	28.7	
BB30	Oyster Point	2/1/99	19	31.4	
BB30	Oyster Point	4/12/99	20	20.3	
BB30	Oyster Point	7/13/99	21	28.3	
BB15	San Bruno Shoal	7/13/99	21	27.9	
BB15	San Bruno Shoals	2/1/99	19	28.8	
BB15	San Bruno Shoals	4/12/99	20	20.9	
			Maximum Salinity =	31.4	ppt
			Minimum Salinity =	12.0	ppt
			Average Salinity =	23.4	ppt

Attachment J

City of Burlingame Comments on the Tentative Order Dated December 21, 2001, Reissuing NPDES Permit No. CA0037788

The City of Burlingame

Office Of Environmental
Compliance - 1103 Airport Blvd
(650)-342-3727

City Hall - 501 Primrose Road
Burlingame, California 94010-3997

Corporation Yard
1361 North Carolan Ave

January 18, 2002

Ms. Loretta Barsamian
Executive Officer
San Francisco Regional Water
Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attention: Mr. Ken Katen, P.E.

Dear Ms. Barsamian:

Subject: City of Burlingame Comments on the Tentative Order Dated December 21, 2001, Reissuing NPDES Permit No. CA0037788

The City of Burlingame [City] appreciates the opportunity to submit the following comments on the December 21, 2001, Tentative Order [TO] reissuing the City's National Pollutant Discharge Elimination System (NPDES) permit for the Wastewater Treatment Plant [Plant]. Comments are generally numbered sequentially in the same order that issues of concern appear in the TO. The pertinent section headings from the TO are also noted for your convenience.

1. Minor Typographical Deviations Noted by the City

a. In Finding 3, the correct latitude of the NBSU outfall should include "55 seconds N" instead of the currently stated 35 seconds.
b. In Finding 56, the SIP based WQBEL for copper is stated as 26 ug/L daily maximum. Based on the RWQCB staff's effluent limitation calculations shown in Table 6 of the 12/21/01 Fact Sheet, the correct limit is 23 ug/L [rounded down].
c. The phrase "Footnote for Table 5" directly below Table 3 in the Effluent Limits Section on page 28 of the TO should be changed to "Footnote for Table 3".
d. The phrase "Footnotes to Table 7" directly below Table 4 in the Effluent Limits Section on page 31 of the TO should be changed to "Footnotes to Table 4".

2. Discharger Assistance in Developing Lower Detection Limit Analytical Tests

TO reference: Finding 29a.

The first sentence of Finding 29a states that:

> "The Regional Board will request dischargers collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or water quality objectives."

The City does not have the means to conduct time consuming and expensive investigations of new laboratory analytical procedures for 303(d)-listed priority pollutants. In addition, BACWA has not expressed any interest to-date in volunteering to conduct such studies for the RWQCB due to the high expected costs, and the major administrative and technical roadblocks to obtaining EPA approval for such new protocols - if any could be developed.

The City's 13267 letter sampling plan submitted to the RWQCB on 9/27/01 stated in the cover letter [last full paragraph].

> "The City of Burlingame has not chosen the option to pursue the research of methods to achieve lower detection limits since cost of this work could be prohibitive with no certainty of success."

Based on the above background, and consistent with other related findings in the TO, the City requests that development of new analytical techniques for priority pollutants be an option, not a requirement, under the new NPDES permit. As such, the City suggests that the sentence in question in Finding 29a be reworded to state: "The Regional Board may request dischargers, and dischargers will have the option, to collectively assist in developing and implementing analytical techniques ...."

3. Interim Performance Based Limits for Copper

TO reference: Finding 56
Finding 57
Effluent Limitations, Table 4

The SIP-based final WQBELs calculated by the RWQCB staff of 13 ug/L monthly average and 23 ug/L daily maximum [see Table 6 of Fact Sheet] are technically unattainable by the City's Plant based on a maximum effluent concentration in the January 1998 – July 2001 timeframe of 17 ug/L. As part of its 12/7/01 Feasibility Study, the City calculated an interim performance based limit [IPBL] for total recoverable copper of 27.6 ug/L based on the 99.87th percentile as allowed by current RWQCB permitting procedures. However, TO Findings 56 and 57, as well as Table 4 in the Effluent Limitations section on page 31 of the TO, cite an IPBL for copper of 25 ug/L.

The City's consultant [Larry Walker Associates, LWA] has reviewed the Cu IPBL calculations contained in the 12/7/01 Feasibility Study [LWA memo dated 11/26/01] as well as the RWQCB staff's calculation of 25 ug/L. LWA has modified its 11/26/01 IPBL calculations to correct missing effluent concentration data points resulting in a revised recommended Cu IPBL of 28.2 ug/L. The City does not accept the RWQCB's 25 ug/L IPBL for copper because it is apparently based on a reduced Cu effluent concentration data set where all non-detects were dropped out.

The City is enclosing LWA's updated IBPL analysis memo dated 1/16/02 to support an IPBL for copper in the new permit of 28 ug/L.

4. Whole Effluent Chronic Toxicity Testing Requirements

TO reference: Finding 85
Provisions – Section E
Part B of Self-Monitoring Program

The City requests that the chronic toxicity testing requirements in the TO be modified to be consistent with the recently adopted permit for the City of Millbrae Water Pollution Control Plant [Millbrae], another member of NBSU. Certain stipulations in the Millbrae permit relating to chronic toxicity were modified at the 11/28/01 RWQCB Hearing as a Supplemental Agenda Item [#18]. The chronic toxicity-related changes to the Millbrae permit, which should also be included in the City of Burlingame permit, are itemized below:

Finding 85b. in the 12/21/01 Burlingame TO should be replaced in total with the following language from Finding 85 in the adopted Millbrae permit:

> "The Discharger conducted a joint study on chronic toxicity with other NBSU members in the early 1990s. That study is no longer valid because one of the discharge contributors to NBSU has ceased operations and no longer discharges. Therefore, this permit requires the Discharger to conduct a new study to quantify the chronic toxicity in its discharge. The Regional Board encourages the Discharger and other NBSU members to cooperatively conduct this study so as to maximize efficiency."

In Section E of the Burlingame permit, add the following new Provision under Whole Effluent Toxicity Requirements [which starts on page 40 of the TO], and renumber the subsequent Provisions as needed:

xx. Screening Plan For Chronic Toxicity

> The Discharger shall conduct screening phase compliance monitoring as described in Attachment A of the attached Self Monitoring Program. The Discharger shall submit, in writing, a proposed Screening Phase Study Plan acceptable to the Executive Officer by **September 30, 2002.** The Screening Phase Study Plan shall include an implementation schedule, and shall be implemented upon approval by the Executive Officer. Upon completion of the screening phase study, the Discharger shall submit a report acceptable to the Executive Officer which shall identify the most sensitive species, ongoing monitoring frequency, and am implementation schedule for ongoing monitoring.

Replace the "Frequency" subsection of Footnote 8 to Table 1 in Part B of the Self-Monitoring Program with the following:

> Frequency:
>
> i. Routine Monitoring: To be determined based on results of initial chronic toxicity screening. If the discharge demonstrates chronic toxicity, routine monitoring will be required. However, if the discharge demonstrates no chronic toxicity in excess of the triggers specified in the "Conditions for Accelerated Monitoring" subsection below, the

monitoring frequency will be twice during the next five years, once during wet weather, and once during dry weather.

ii. Accelerated Monitoring: Quarterly, or as otherwise specified by the Executive Officer.

5. Clarification of Applicability of Total Chlorine Residual Effluent Limitation

TO reference: Effluent Limitations, Section B1., Table 3, Item v.

Item v. in Table 3 of Effluent Limitation Section B1 specifies an effluent limitation at Sampling Station E-001 [at point of discharge by Burlingame to NBSU force main] for total chlorine residual of 0.0, instantaneous maximum. Although Footnote A to Table 3 states that compliance "may" be demonstrated at the NBSU outfall [E-002], the current configuration of the City's facilities does not provide the option of dechlorinating all effluent at the Plant.

The City requests that the last sentence in Footnote A be removed, and that the paragraph above Table 3 be replaced in total with the following new paragraph:

1. The following effluent limitations apply to effluent discharged to the NBSU joint discharge system and thence to Lower San Francisco Bay through the discharge outfall (Sampling Station E-001 as defined in the Self-Monitoring Program), with the exception of the Total Chlorine Residual limitation which applies only at the NBSU common outfall [Sampling Station E-002]:

6. Clarification of Compliance Determination for Priority Pollutant Effluent Limitations

TO reference: Footnote 1b. to Table 4 in the Effluent Limitations Section

To be consistent with the compliance determination provisions of the SIP (Section 2.4.5), the following sentence should be added to Footnote 1b to Table 4 in the Effluent Limitations Section on page 31 of the TO:

"The Discharger is in violation of the limit if the discharge concentration exceeds the effluent limitation and the reported minimum level (ML) for the analysis."

In addition, Footnote 1 to Table 4 should be extended to the mercury "Notes" column.

Similar language confirming this SIP policy is included in the comparable table for other recently adopted permits in the Bay Area such as the West County Agency permit adopted on 11/28/01.

7. Interim Effluent Limitations Period for Copper

TO reference: Table 4 in the Effluent Limitations Section [TO page 31]
Finding 35

Both Table 4 and Finding 35 in the TO note that the compliance schedule [period during which interim performance based effluent limitations will be in effect] for copper for the City is 5 years from the adoption of the permit. However, copper is a 303(d)-listed constituent for which a TMDL will be required, and for which final effluent limits for the City's Plant can be expected to be based on a TMDL Waste Load Allocation [see Finding 28]. The RWQCB is currently planning to complete TMDLs for most 303(d) constituents, including copper, by 2010 [see Finding 27].

The City requests that the new permit clarify that the 5-year compliance schedule for copper may need to be extended to accommodate the adoption schedule for a TMDL. The City notes that Section 2.1 of the SIP allows up to 15 years from the effective date of the SIP to adopt a TMDL and WLAs, with an additional 5 years after TMDL adoption to comply with the associated final effluent limits.

The City suggests that an appropriate way to clarify the copper compliance schedule would be to remove the linkage to copper of existing Footnote 6 for Table 4, and then add a new Footnote 7 to Table 4 linked only to copper. The City suggests that new Footnote 7 state:

> 7. This interim limit shall remain in effect for five years from the date of adoption of this Permit, or until the Board amends the limit based on site specific objectives or the Waste Load Allocation in the TMDL.

The City notes that this same clarification of interim copper limits has been placed in other Bay Area permits, such as the recently adopted West County Agency permit [11/28/01], the City of Millbrae permit [11/28/01], and the SFO permit [11/28/01].

8. RWQCB Permitting Procedures for Bioaccumulative Constituents

TO reference: Finding 26
Finding 31
Finding 48
Finding 60
Finding 62
Finding 81
Effluent Limitations Table 4.
Effluent Limitations B.7.

The TO imposes performance-based mass limits for mercury and denies for bioaccumulative constituents NBSU's approved deep-water outfall dilution credit of 10:1 . Performance-based mass limits or disallowance of the dilution credit effects, or may eventually effect, the final effluent limits in the City's case for mercury, dieldrin, and 4,4-DDE [considers only bioaccumulative constituents currently with RP]. Consistent with other POTWs in the Bay Area, the City is opposed to performance-based mass limits and denial of dilution credits for bioaccumulative constituents on the bases that:

a. The RWQCB has used narrative Basin Plan toxicity objectives inappropriately to set numeric effluent limits for bioaccumulative constituents.

b. Performance-based mass limits, due to their retrospective basis, could limit population growth and economic development in the sewer service area inappropriately.

c. Performance-based mass limits are redundant since the permitted constituent concentration and the RWQCB-approved plant design flow already clearly define an enforceable mass limit.

d. Performance-based mass limits for mercury are likely to be ineffective in providing any measurable improvement in future mercury concentrations in the Bay since POTWs contribute only approximately 1% of the loadings.

e. The RWQCB has denied dilution credits based solely on the fact that a pollutant is classified as bioaccumulative whereas the SIP at Section 1.4.2.2.B requires that the RWQCB also consider level of flushing in the receiving water which, in the case of the NBSU outfall, is a dilution of at least 10:1 under normal conditions [see TO Finding 3].

f. The RWQCB based its decision to deny dilution credits on BPJ, however, the RWQCB failed to use its own applicable factors which define BPJ as stated in Section 4 of the Basin Plan. Examples of applicable BPJ factors not addressed by the RWQCB include achievability by available technology or control strategies, and economic and social costs and benefits.

9. Sampling Frequency for Effluent BOD Concentration

TO reference: Table 1 in Section II of Part B of the Self-Monitoring Program
Section V-6 of the Fact Sheet

Table 1 in Section II of the Self-Monitoring Program specifies a frequency for monitoring BOD of 3/W for E-001 [Burlingame Plant effluent]. This is the same frequency specified by the City's existing NPDES permit [Order 95-208] as well as for the treatment plants of other members of NBSU in recently adopted permits. [1]

However, Section V-6 of the Fact Sheet [page 17] notes that the BOD monitoring frequency for Burlingame has been set at five-times per week. The City has consistently complied with its BOD effluent limits and, considering all of the other costs associated with new sampling requirements, objects to an increase in sampling frequency. The City requests that the RWQCB confirm that the BOD sampling frequency of 3/W stated in the TO Self-Monitoring Program governs, and that the Fact Sheet indication of a 5/W frequency is an error.

10. Inapplicable Footnote Segment in Section II of Part B of the Self-Monitoring Program

TO reference: Table 1 in Section II of Part B of the Self-Monitoring Program

The last sentence in Footnote 13 to Table 1 in Section II of Part B of the TO Self-Monitoring Program ["The discharger shall report the analytical result for each of the seven PCB congeners, as specified in the CTR."] appears to apply to Table 2 which does not list PCBs. The City requests that this portion of Footnote 13 be removed from the TO.

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[1] The Millbrae and SFO permits adopted by the RWQCB on 11/28/01 both stipulate BOD sampling frequencies of 3/W. Furthermore, the RWQCB's response to comments for the Millbrae permit hearing on 11/28/01 at Item I.F.4-b [page 9] states, regarding frequency of effluent BOD tests: " *In Regional Board staff's best professional judgment, three times a week is the minimum sampling frequency required for fully compliant municipal wastewater treatment plants. Also, retaining CBOD monitoring frequency at three times per week is consistent with self monitoring requirements for other, similar dischargers, including recent and upcoming permits for other North Bayside System Unit (NBSU) members. Millbrae is a member of NBSU.*"

11. Storm Water Monitoring Requirements

TO reference: Section IIIc. of Part B of the Self-Monitoring Program

Section IIIc. of Part B of the TO's Self-Monitoring Program specifies monitoring requirements for storm water runoff from the Plant site. The City has agreed, at the suggestion of the RWQCB staff, to obtain a separate storm water permit for the Plant [under the statewide general permit] as explained in Finding 8a. of the TO. The City would like to consolidate all storm water monitoring efforts under the umbrella of the statewide storm water permit and, therefore, requests that the separate set of storm water monitoring requirements contained in Section IIIc. of Part B of the TO Self-Monitoring Program be removed.

12. Submittal Deadline for Monthly Self-Monitoring Reports

TO reference: Section IV.C of Part B of the Self-Monitoring Program

The first paragraph of Section IV.C [Monthly Self-Monitoring Report (SMR)] of the TO requires that the monthly SMRs be submitted to the RWQCB no later than the last day of the following month. The City requests that the deadline be established as "no later than 45 days after the end of the reporting month" as is typical for Bay Area NPDES permits including the Millbrae and West County Agency permits adopted by the Board on 11/28/01. The additional time is necessary to ensure that all analytical results for contract laboratories can be included in the applicable SMR.

If you have any questions regarding these comments, please contact me at (650) 342-3727 or TociWE@usfilter.com.

Sincerely,

William E. Toci
Plant Manager
US Filter Operating Services, Inc.

Enclosure: 1/16/02 LWA Calculations for copper IPBL

Memorandum

LARRY WALKER ASSOCIATES

DATE: January 16, 2002

TO: Gil Wheeler

SUBJECT: Burlingame Copper IPBL Follow-up

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Internal Memorandum—Estimated IPBLs for Copper for Burlingame Permit Renewal

This memorandum presents the results of Larry Walker Associates [LWA] analyses to estimate an Interim Performance-Based Limit (IPBL) for copper for Burlingame's NPDES permit renewal. The results of the analyses are summarized below. This memo supercedes the initial analysis contained in LWA's 11/26/01 memo.

Data Set

Copper data for the Burlingame wastewater treatment facility consisted of effluent quality results for 44 monthly sample events, collected from January 1998 to July 2001. There were 39 detected values in the data set (88.6% of the total), including one low outlier value reported at 0.1 µg/L. The maximum detected value was 17 µg/L (sampled in August 1997). The remainder of the data set was comprised of data below detection limits of 5 µg/L and 5.3 µg/L.

Calculation Methods

Interim Performance Based Limits (IPBLs) were calculated from these data using methods consistent with the Regional Board's recommended methodology. The distribution of the data was evaluated using normal probability plots and regression statistics. Because some of the data were below detection, summary statistics and interim permit limits were calculated using the method of Helsel and Cohn (1988) which appears to be consistent in concept with the Regional Board's recommended "log-Probit method" for estimating IPBLs from data sets with data below detection. This method was used to estimate values three standard deviations above the mean of the untransformed and Ln-transformed data (equivalent to the 99.87^{th} percentile), as specified in the Regional Board's method. The value estimated using the untransformed data is equivalent to the IPBL with no further calculations. The value based on the Ln-transformed data is back-transformed (exponentiated) to the original concentration units to provide the IPBL. These calculations are performed for the complete data set including, and then excluding, the single low outlier value. The results of these methods are also compared to an IPBL calculated by the Regional Board using a data set excluding the low outlier and all data below detection.

Table 2. Additional Results and Calculations

	Including outlier[1]		Excluding outlier[2]		Excluding outlier and BDL data[3]
Statistic	Untransformed data	Ln(x)	Untransformed data	Ln(x)	Ln(x)
n	43	NA	42	NA	NA
Percent detected	88.6%	NA	88.4%	NA	NA
n detected	39	NA	38	NA	NA
Minimum Detected Value (µg/L)	0.1	NA	3	NA	NA
Maximum Detected Value (µg/L)	17	NA	17	NA	NA
Minimum Reporting Limit (µg/L)	5	NA	5	NA	NA
Maximum Reporting Limit (µg/L)	5.3	NA	5.3	NA	NA
Mean (µg/L)	8.21	1.919	8.60	2.0775	0.34468
Standard Deviation (µg/L)	3.86	0.6865	3.30	0.4135	2.1593
R^2 for distribution regression fit	0.87	0.97	0.97	0.96	0.97
IPBL basis	$\mu + 3\sigma$	$e^{(\mu + 3\sigma)}$	$\mu + 3\sigma$	$e^{(\mu + 3\sigma)}$	$e^{(\mu + 3\sigma)}$
IPBL[4]	**19.8 µg/L**	**53.4 µg/L**	**18.5 µg/L**	**28.2 µg/L[5]**	**24.4 µg/L**

Table notes:

(1) Includes low outlier of 0.1 µg/L.

(2) Excludes low outlier of 0.1 µg/L.

(3) Excludes low outlier of 0.1 µg/L and all data reported as below detection

(4) Calculated from regression statistics

(5) Recommended Cu IPBL for Burlingame Treatment Plant

approximately 11% lower [more stringent] than an IPBL correctly calculated using the log-probit method, and is consequently expected to result in a higher probability of violating the IPBL.

References

Helsel, D., and T. Cohn. 1988. Estimation of descriptive statistics for multiply-censored water quality data. Water Resources Research 24: 1997-2004.

Table 1. **Estimated Interim Performance Based Limits for Copper**
IPBLs calculated Using the Method of Helsel and Cohn (1988) for estimating distribution parameters for censored data with multiple detection limits.

Cu Value (µg/L)	Basis for Cu limit calculation	Comment
20.0	mean + 3*SD of untransformed data (1998-2001, complete data set, including outlier of 0.1 µg/L)	• Normal distribution is *atypical* for effluent quality data, and predicts that ~1.5% of data are below zero • Estimated IPBL is very close to maximum observed effluent quality concentration (17 µg/L) • Inclusion of low outlier slightly increases variability of effluent quality data, but doesn't significantly affect IPBL
53.4	exp(mean + 3*SD) of Ln(y), (1998-2001, complete data set, including outlier of 0.1 µg/L)	• Log-normal distribution is *typical* for effluent quality data, and predicts no data below zero • Estimated IPBL is less than 2x maximum observed effluent quality concentration (17 µg/L) • Low outlier increases variability of effluent quality data, resulting in high estimated IPBL
18.5	mean + 3*SD of untransformed data (1998-2001, low outlier excluded)	• Normal distribution is *atypical* for effluent quality data, and predicts that ~0.8% of data are below zero • Exclusion of low outlier slightly degrades normal distribution fit • Estimated IPBL is very close to maximum observed effluent quality concentration (17 µg/L)
24.4	exp(mean + 3*SD) of Ln(y), (1998-2001, low outlier and BDL data excluded, per RWQCB analysis recd. by LWA on 1/15/02)	• Log-normal distribution is *typical* for effluent quality data, and predicts no data below zero • Exclusion of low outlier results in greatly improved log-normal distribution fit that is slightly better than normal distribution fit • Exclusion of data below detection results in systematically low-biased estimate of standard deviation, resulting in inappropriately low IPBL.
28.2	Helsel and Cohn 1988; exp(mean + 3*SD) of Ln(y), (1998-2001, low outlier excluded)	• Log-normal distribution is *typical* for effluent quality data, and predicts no data below zero • Estimated IPBL is less than 2x maximum observed effluent quality concentration (17 µg/L) • Exclusion of low outlier results in greatly improved log-normal distribution fit that is slightly better than normal distribution fit • **Recommended Cu IPBL for Burlingame Treatment Plant**

Results and Conclusion

The results of the analysis of Burlingame's 1998-2001 copper data are summarized in Table 1 below.

Initial evaluation of the data set including the low outlier of 0.1 µg/L suggests that a normal distribution describes the data better than a log-normal distribution ($R^2 = 0.97$ and 0.72, respectively; see attached figures). There are several reasons to be suspicious of this outcome, however. The reported copper concentration of 0.1 µg/L is a very unlikely result, based on the fact that this concentration is $1/30^{th}$ of the next lowest value and is also much lower than copper concentrations in the drinking water supply. Although quality assurance data are not available for more in depth analysis, it is more likely that this result was incorrectly reported or that the result is for an incorrectly labeled blank sample. Additionally, effluent quality data typically conform better to a lognormal distribution because the distribution of concentrations is "left-bounded", i.e. concentrations can not be less than zero. In this case, an assumption of a normal distribution results in an IPBL of 19.8 µg/L, very close to the maximum observed concentration in Burlingame's effluent (17 µg/L), and also predicts that approximately 2% of Burlingame's effluent copper concentrations are less than zero. Excluding the low outlier results in no significant change in the fit for the normal distribution and a greatly improved fit for the log-normal distribution, with R^2 values that are virtually identical for the two distributions ($R^2 = 0.97$ vs. $R^2 = 0.96$, respectively). Overall, it was concluded that a log-normal distribution is a more appropriate model for Burlingame's copper data than a normal distribution.

Based on this evaluation of the data and distributions, it is concluded that the copper IPBL should be based on a log-normal distribution, with the low outlier excluded. Calculation of the IPBL based on a log-normal distribution provides an interim Cu limit of 28.2 µg/L. This estimated IPBL is significantly lower than the Burlingame's previous permit limit (37 µg/L), but should continue to allow Burlingame to comply with copper effluent limitations. Because the estimated IPBL based on the 1998-2001 copper data is lower than Burlingame's previous NPDES limit, it is expected that the newly estimated IPBL would supercede the limit from the previous permit.

Additional calculations supporting these results are provided in Table 2.

The Regional Board also independently calculated an IPBL of 25 µg/L based on a log-normal distribution of the same 1998–2001 effluent data (with the low outlier excluded). However, the calculation used by the Regional Board excluded all of the data below detection, on the basis that there were sufficient detected data to characterize the distribution without using the recommended log-probit method (e-mail comm. to LWA, from Regional Board, 1/15/02). Although, no specific thresholds for adequate numbers (or percent) of detected data were cited, excluding data below detection—at any percentage of the data—is an inappropriate method for calculating IPBLs, as well as being inconsistent with Regional Board's recommended method. Excluding data below detection from the analysis reduces the variability and standard deviation of the data set and therefore results in a systematic low bias in the estimated IPBL, and consequently a systematic increase in the probability of effluent limit violations. It also distorts the distribution of the data, making evaluation of normality difficult. While the magnitude of the bias may not be great in this particular case, the precedent set by this method should be opposed because the systematic bias increases in proportion to the percentage of censored data (demonstrated using Burlingame's data in Figure 2). In Burlingame's case, the resulting Cu IPBL calculated by the Regional Board of 24.4 ug/L is

Figure 1. Comparison of normal probability plots and estimated IPBLs.

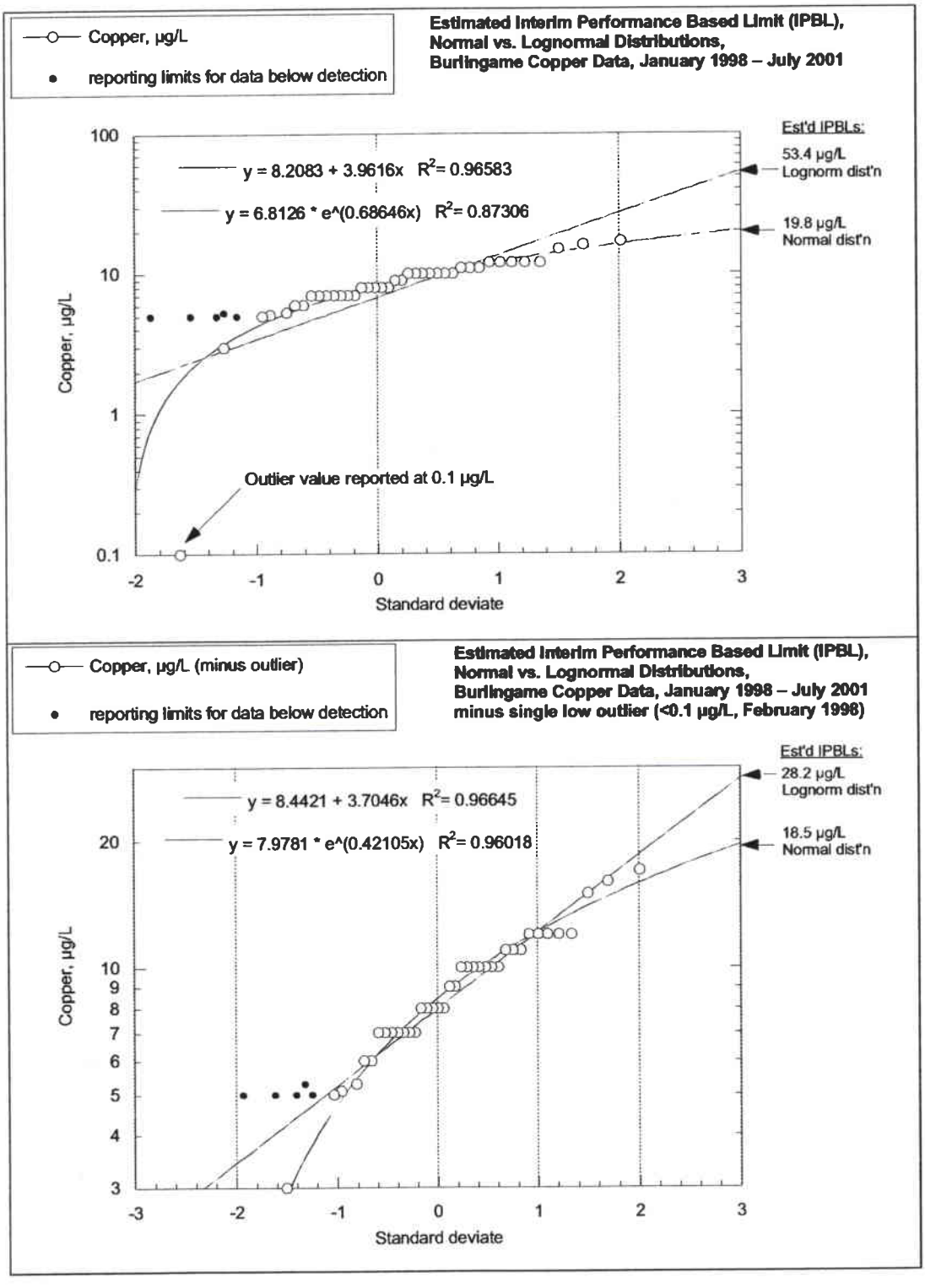
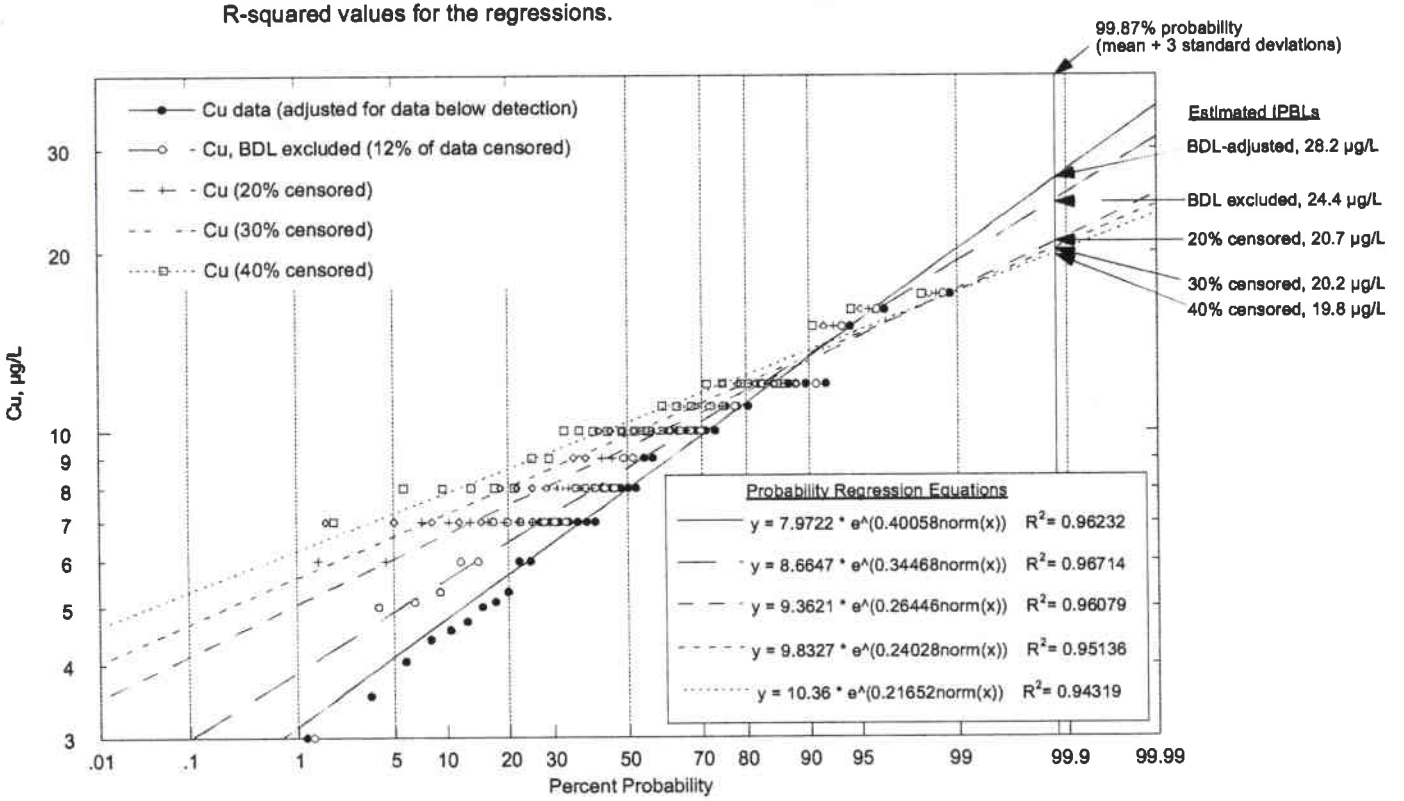


Figure 2. Effect of censoring on distribution parameters and estimated IPBLs.

Plot illustrates effect of increasing levels of censoring on estimated distribution parameters and IPBLs, based on Burlingame's effluent data for copper, 1998 - 2001. As the proportion of censoring increases, the means increase and the standard deviations decrease (see intercept and slope of the regression equations), and the resulting estimated IPBLs decrease. At increased levels of censoring, the distributions of the data are also distorted, as evidenced by the decreasing trend in R-squared values for the regressions.



Attachment K

Regional Board staff Response To Comments

California Regional Water Quality Control Board
San Francisco Bay Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

Response to Comments
For Item No. 14

Public Hearing
on
City of Burlingame
Waste Water Treatment Plant
NPDES Permit Reissuance

One comment letter was received for the Burlingame Tentative Order, from the City of Burlingame (the City), on January 18, 2002. For brevity, each City comment is summarized, and each response given, point by point, in the order presented.

Comment 1. Minor Typographical Deviations Noted by the City

a. In Finding 3, the correct latitude of the NBSU outfall should include "55 seconds N" instead of the currently stated 35 seconds.

Response 1a:

Typographical deviation corrected to reflect latitude of 37 degrees, 39 minutes, 55 seconds N.

b. In Finding 56, the SIP [The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, State Water Resources Control Board 2000] *based WQBEL for copper is stated as 26 ug/L daily maximum. Based on the RWQCB staff's effluent limitation calculations shown in Table 6 of the 12/21/01 Fact Sheet, the correct limit is 23 ug/L [rounded down].*

Response 1b:

Typographical deviation corrected to reflect Maximum Daily Effluent Limit (MDEL) of 23 µg/L.

c. The phrase "Footnote for Table 5" directly below Table 3 in the Effluent Limits Section on page 28 of the TO should be changed to "Footnote for Table 3".

Response 1c:

Typographical deviation corrected to reflect appropriate footnote reference.

d. The phrase "Footnotes to Table 7" directly below Table 4 in the Effluent Limits Section on page 31 of the TO should be changed to "Footnotes to Table 4".

Response 1d:

Typographical deviation corrected to reflect appropriate footnote reference.

Comment 2. Discharger Assistance in Developing Lower Detection Limit Analytical Tests

The City has objected to the wording of the first sentence in Finding 29a, which states:

> *"The Regional Board will request dischargers collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or water quality objectives."*

The City requests that the sentence be reworded to more clearly indicate that dischargers' participation is optional.

Response 2:

Comment Noted. The language in the Tentative Order will remain unchanged. This sentence is part of the standard language in current NPDES permits at this Region. Regional Board staff believes that participation in such studies is the best way to ensure a better data set when evaluating reasonable potential for 303(d)-listed pollutants during the next permit reissuance, or for determining pollutant loads for Waste Load Allocations. Nevertheless, participation in such studies is discretionary, and individual dischargers may elect to not participate. It is Regional Board staff's opinion that the language is adequate as currently worded.

Comment 3. Interim Performance Based Limits for Copper

The City proposed an interim performance based limit (IPBL) for copper of 27.6 µg/L in its December 7, 2001 Feasibility Study. The City's consultant subsequently corrected some missing data points from the data set and recalculated a proposed copper IPBL of 28.2 µg/L. The City objected to Regional Board staff's proposed IPBL of 25 µg/L. The City's objection was based on Regional Board staff's utilization of a statistical methodology that eliminated all non-detect (ND) data from the data set (5 ND out of 48 total data points) before calculating the 99.87th percentile of the data set for use as the IPBL.

Response 3:

Upon further consideration, Regional Board staff concurred that eliminating the 5 NDs was problematic. Regional Board staff then used statistical software to carry out an augmented statistical analysis to:

- revise the reported data set by estimating probable values for the NDs, using maximum likelihood estimation methods;
- evaluate the goodness-of-fit between the revised data set and a postulated natural-log-normal (ln-normal) distribution;
- develop probability plot and percentile values for the revised data set; and
- calculate the 99.87th percentile of the revised data set.

The augmented statistical analysis determined that the data fit was statistically acceptable (Anderson-Darling statistic = 0.46). Based on this finding and the probability plot of the revised data set, the IPBL is revised to 27 µg/L, the 99.87th percentile of the revised data set. The Proposed Permit and Fact Sheet have been modified to reflect the revised IPBL.

Comment 4. Whole Effluent Toxicity Testing Requirements

The City requested that the Tentative Order's Finding 85, Provisions Section E-9, and Footnote 8 to Table 1 in Part B of the Self-Monitoring Program be modified to reflect the standard language contained in several other recently-adopted NPDES permits.

Response 4:

Regional Board staff concurs with the requested changes and the Tentative Order has been changed to reflect them.

Comment 5. Clarification of Applicability of Total Chlorine Residual Effluent Limitation

The City requested that the paragraph above Table 3 of the Tentative Order's Self Monitoring Program, together with Footnote A of Table 3, be amended to reflect the fact that the City's facilities cannot currently dechlorinated all effluent leaving the Waste Water Treatment Plant.

Response 5:

Regional Board staff concurs with the requested amendment to the paragraph above Table 3 of the Tentative Order, which has been revised to read:

> " The following effluent limitations apply to effluent discharged to the NBSU joint discharge system (Sampling Station E-001 as defined in the Self-Monitoring Program) and thence to Lower San Francisco Bay through the discharge outfall (Sampling Station E-002 as defined in the Self-Monitoring Program). Chlorine residual shall be monitored at Sampling Station E-002 and reported by the Discharger."

It is Regional Board staff's opinion that the Tentative Order's wording of Footnote A of Table 3 makes adequate provision to carry out routine chlorine residual monitoring at Sampling Station E-002. Further, specifying chlorine residual monitoring only at Sampling Station E-002 could limit the City's flexibility should circumstances change in the future. Therefore, the wording of Footnote A of Table 3 is not changed.

Comment 6. Clarification of Compliance Determination for Priority Pollutant Effluent Limitations

The City requested that the following language be added to Footnote 1b to Table 4 of the Tentative Order:

> *" The Discharger is in violation of the limit if the discharge concentration exceeds the effluent limitation and the reported minimum level (ML) for the analysis."*

The City also requested that the Notes column of Table 4 should also include reference to Footnote 1 in the row for mercury.

Response 6:

Staff concurs, and the additions to Table 4 and Footnote 1b to Table 4 have been made. Footnote 4 to Table 4 (regarding 4,4-DDE) has been modified so that it does not repeat reference to MLs for compliance determination.

Comment 7. Interim Effluent Limitations Period for Copper

The City requests that the new permit clarify that the 5-year compliance schedule for copper may need to be extended to accommodate the adoption schedule for a TMDL. The City asserts that Section 2.1 of the SIP allows up to 15 years from the effective date of the SIP to adopt a TMDL and WLAs, with an additional 5 years after TMDL adoption to comply with the associated final effluent limits.

Response 7:

Comment noted. The Tentative Order has been changed to reflect the City's request.

Comment 8. RWQCB Permitting Procedures for Bioaccumulative Constituents

The City asserts that the TO imposes performance-based mass limits for mercury and denies NBSU's approved deep-water outfall dilution credit of 10:1 for bioaccumulative constituents. The City is concerned that performance-based mass limits or disallowance of the dilution credit affects, or may eventually affect, the final effluent limits in the City's case for mercury, dieldrin, and 4,4-DDE (the only bioaccumulative pollutants for which the City's effluent was found to have reasonable potential). Specifically the City claims that:

a. The RWQCB has used narrative Basin Plan toxicity objectives inappropriately to set numeric effluent limits for bioaccumulative constituents.

Response 8a:

The numeric effluent limit for mercury and 4,4-DDE are based on the plant performance or existing limits in the previous permit, whichever is more stringent. The derivation of interim limits did not involve numeric nor narrative toxicity objectives. The numeric effluent limits for dieldrin and 4, 4-DDE are based on the CTR's numeric Water Quality Criteria (WQCs). Thus, effluent limitations for bioaccumulative pollutants (e.g., dieldrin) are based on established, numeric WQOs or WQCs, and not on a numeric interpretation of narrative standards.

b. Performance-based mass limits, due to their retrospective basis, could limit population growth and economic development in the sewer service area inappropriately.

Response 8b:

This comment is similar to comments received on other recent NPDES permit reissuances, including the reissuance for Millbrae, another NBSU member. As noted in the response to comments for that permit reissuance, the Tentative Order states that the intent of the interim performance-based mass limit for mercury is to hold current WWTP mercury mass loads to approximately their current levels. It is

expected that the mercury TMDL for San Francisco Bay will be completed during the life of the proposed reissued permit. Reserving capacity for future growth is explicitly considered during the TMDL development process. It would be inappropriate and potentially inaccurate to attempt to duplicate or preempt this function in other documents that are not designed with the same degree of stakeholder input and data gathering as TMDLs. Further, based on calculations used in the proposed Tentative Order, the average mercury monthly mass load is 0.062 kilograms per month, compared to the proposed mass-based effluent limit of 0.135 kilograms per month; an increase to the proposed mass-based effluent limit would require a 119 percent increase in mass loading. The WWTP's current average dry weather flow is 3.56 MGD and its design dry weather flow capacity is 5.5 MGD. Thus, the maximum average dry weather effluent flow increase attainable with the current plant design is 1.94 MGD, or a 55 percent increase in flow. Thus, if the City increases its flow while maintaining its treatment performance for mercury, it would run out of capacity well before it meets or exceeds the proposed interim mercury mass limit.

c. *Performance-based mass limits are redundant since the permitted constituent concentration and the RWQCB-approved plant design flow already clearly define an enforceable mass limit.*

Response 8c:

The "RWQCB-approved plant design flow" included in the Discharge Prohibitions applies to dry weather flows only. Specifically, it applies to average flows of three consecutive dry months. Therefore, there is not implied enforceable mass limit. The explicit mass limit is established on the following basis:

Federal anti-degradation policy "prohibits any action that would lower water quality below that necessary to maintain and protect existing uses... In cases where water quality is lower than necessary to support these uses, the requirement in Section 303(d) of the Clean Water Act, 40 CFR Part 131.10 and other pertinent regulations must be satisfied". (Guidance on Implementing the Anti-degradation Provisions of 40 CFR Part 131.12, U.S. EPA, Region 9.) Instituting mass limits in this permit was designed to comply with federal and State Anti-degradation policy. Additionally, State Water Resources Control Board Order No. WQ 2001 – 16 (the Napa Sanitation Order) states (pg. 17 et. seq.):

> " EPA interprets its regulations to generally require mass limits for all pollutants for which mass limits can be calculated. . . Whether or not EPA regulations mandate mass limits, the Regional Board clearly had the discretion to include mass limits for bioaccumulative and persistent pollutants . . ."

d. *Performance-based mass limits for mercury are likely to be ineffective in providing any measurable improvement in future mercury concentrations in the Bay since POTWs contribute only approximately 1 percent of the loadings.*

Response 8d:

Interim measures are necessary, especially for bioaccumulative pollutants, as an initial step toward ensuring that mass loading of these impairing pollutants, at the very least, does not increase. Mass loading is the critical measurement for bioaccumulative impairing pollutants like mercury. The impairment is due in part to high concentrations of mercury in fish tissue that lead to the 1994 issuance of a fish consumption advisory for fish caught from the Bay, as distinct from exceedences of the

objective in the water column. Therefore, controlling influxes of grams of mercury from all sources, including POTWs and industries, into the impaired waterbody is the important measurement. It is true that standards are not being met but TMDLs are being developed. The interim performance-based limits, both concentration and mass, are short-term measures designed to, at least, prevent further degradation of the waterbody during the process of TMDL development and implementation. State Water Resources Control Board Order 2001-06 (the Tosco Order) concluded (pg. 26) that "interim, performance-based mass limits for a pollutant under a compliance schedule to achieve the applicable water quality standard for the pollutant are authorized under the Clean Water Act and state law." Furthermore, "If a compliance schedule [which is discretionary] is allowed, it is entirely appropriate for the permit to include interim, performance-based mass limits to preserve the status quo and prevent further water quality degradation until the water quality standard is achieved.

e. *The RWQCB has denied dilution credits based solely on the fact that a pollutant is classified as bioaccumulative whereas the SIP at Section 1.4.2.2.B requires that the RWQCB also consider level of flushing in the receiving water which, in the case of the NBSU outfall, is a dilution of at least 10:1 under normal conditions [see TO Finding 3].*

Response 8e:

Section 1.4.2.2.B of the SIP clearly states that the Regional Board ". . . shall deny or significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses, meet conditions of this Policy, or comply with other regulatory requirements. Such situations may exist based upon . . . the overall discharge environment (including water column chemistry, organism health, and potential for bioaccumulation)." The discharge environment, Lower San Francisco Bay, is listed on under provisions of Section 303(d) of the Clean Water Act as impaired by mercury, based on concentrations of mercury in fish tissue. Therefore, denial of a mixing zone and dilution credit for mercury is consistent with the provisions of Section 1.4.2.2.B.

f. *The RWQCB based its decision to deny dilution credits on BPJ, however, the RWQCB failed to use its own applicable factors which define BPJ* [Best Professional Judgment] *as stated in Section 4 of the Basin Plan. Examples of applicable BPJ factors not addressed by the RWQCB include achievability by available technology or control strategies, and economic and social costs and benefits.*

Response 8f:

The Basin Plan's delineation of Best Professional Judgment lists factors that may be considered in developing and setting effluent limitations for toxic pollutants (Basin Plan, pg. 4-7) – the Basin Plan authorizes, but does not require, their consideration in using Best Professional Judgement.

Comment 9. Sampling Frequency for Effluent BOD Concentration

The City pointed out an inconsistency between the frequency specified for biochemical oxygen demand (BOD) in Table 1 of the Tentative Order's Self-Monitoring Program and Section V-6 of the Fact Sheet (3 times per week and 5 times per week, respectively). The City requests that the BOD monitoring frequency be described as 3 times per week (3/W) in both documents.

Response 9:

Staff concurs. Section V-6 of the Fact Sheet has been amended to reflect the correct BOD monitoring frequency of 3 times per week.

Comment 10. Inapplicable Footnote Segment in Section II or Part B of the Self-Monitoring Program

The City noted that the last sentence in Footnote 13 to Table 1 in Section II of Part B of the TO Self-Monitoring Program refers to PCB congeners and appears to apply to Table 2 which does not list PCBs. The City requests that this portion of Footnote 13 be removed from the TO.

Response 10:

Staff concurs. The wording of Footnote 13 to Table 1 in Section II or Part B of the Self-Monitoring Program has been corrected to remove references to PCBs. Additionally, the wording of the first sentence of the footnote has been modified to indicate that this footnote applies only to 4,4-DDE.

Comment 11. Storm Water Monitoring Requirements

The City has agreed to obtain a separate storm water permit for the Plant under the statewide general permit, as explained in Finding 8a. of the Tentative Order. The City would like to consolidate all storm water monitoring efforts under the umbrella of the statewide storm water permit and, therefore, requests that the separate set of storm water monitoring requirements contained in Section IIIc. of Part B of the Self-Monitoring Program be removed.

Response 11:

Staff concurs. Wording of Section IIIc of Part B of the Tentative Order's Self-Monitoring Program has been modified to make the City's requested change.

Comment 12. Submittal Deadline for Monthly Self-Monitoring Report

The City request that the first paragraph of Section IV.C be modified to require submittal of monthly self-monitoring reports by 45 days after the end of the reporting month, rather than at the end of the month following the reporting month. The City bases this request on the need for additional time to ensure that all analytical results for contract laboratories can be included in the applicable self-monitoring report.

Response 12:

Staff concurs. The wording of Section IV.C has been modified to reflect that monthly self-monitoring reports (SMRs) shall be submitted to the Regional Board by 45 days after the end of the reporting month.