

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ORDER NO. 01-096
NPDES PERMIT NO. CA0038091**

WASTE DISCHARGE REQUIREMENTS FOR:

**CITY OF BENICIA,
BENICIA, SOLANO COUNTY**

August 15, 2001

TABLE OF CONTENTS

FINDINGS	1
FACILITY DESCRIPTION	1
TREATMENT PROCESS DESCRIPTION	2
WET WEATHER FLOW MANAGEMENT - FACILITIES, TREATMENT AND DISCHARGE PROCESS	2
STORMWATER DISCHARGE DESCRIPTION	4
REGIONAL MONITORING PROGRAM	5
APPLICABLE PLANS, POLICIES AND REGULATIONS	5
<i>Basin Plan</i>	5
<i>Beneficial Uses</i>	5
<i>State Implementation Plan (SIP)</i>	5
<i>California Toxics Rule (CTR)</i>	6
<i>Other Regulatory Bases</i>	6
BASIS FOR EFFLUENT LIMITATIONS	6
<i>General Basis</i>	6
<i>Specific Basis</i>	11
<i>Development of Effluent Limitations</i>	15
<i>Whole Effluent Acute Toxicity</i>	20
<i>Whole Effluent Chronic Toxicity</i>	20
<i>Coliform Limits</i>	21
<i>Pollutant Prevention and Pollutant Minimization</i>	22
<i>Special Studies</i>	22
OTHER DISCHARGE CHARACTERISTICS AND PERMIT CONDITIONS	23
A. DISCHARGE PROHIBITIONS	24
B. EFFLUENT LIMITATIONS.....	25
CONVENTIONAL POLLUTANTS	25
TOXIC POLLUTANTS	26
C. RECEIVING WATER LIMITATIONS.....	29
D. SLUDGE MANAGEMENT PRACTICES.....	30
E. PROVISIONS	30
1. <i>Permit Compliance and Rescission of Previous Waste Discharge Requirements</i>	30
SPECIAL STUDIES.....	30
2. <i>Receiving Water Study and Schedule</i>	30
3. <i>Mercury Source Control and Mass Loading Reduction Study and Schedule</i>	31
4. <i>Cyanide Study and Schedule - Site-Specific Objective Study for Cyanide</i>	32
5. <i>Effluent Characterization for Selected Constituents</i>	32
6. <i>Dioxin Study</i>	33
7. <i>Ambient Background Receiving Water Study</i>	34
8. <i>Pollutant Prevention Program and Pollutant Minimization Program (PMP)</i>	34
TOXICITY REQUIREMENTS.....	36
9. <i>Acute Toxicity</i>	36
10. <i>Whole Effluent Chronic Toxicity Requirements</i>	37
COLLECTION SYSTEM PROGRAMS	38
11. <i>Facility Operations during Wet Weather Conditions</i>	38
ONGOING PROGRAMS	39
12. <i>Regional Monitoring Program</i>	39
13. <i>Pretreatment Program</i>	39

OPTIONAL STUDIES 39

14. *Optional Mass Offset* 39

15. *Copper Translator Study and Schedule* 39

FACILITIES STATUS REPORTS AND PERMIT ADMINISTRATION 40

16. *Wastewater Facilities, Review and Evaluation, and Status Reports* 40

17. *Operations and Maintenance Manual, Review and Status Reports* 40

18. *Contingency Plan, Review and Status Reports* 41

19. *Annual Status Reports* 41

20. *303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review* 41

21. *New Water Quality Objectives* 41

22. *Self-Monitoring Program* 41

23. *Standard Provisions and Reporting Requirements* 41

24. *Change in Control or Ownership* 42

25. *Permit Reopener* 42

26. *NPDES Permit* 42

27. *Order Expiration and Reapplication* 42

SELF-MONITORING PROGRAM – PART B **2**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ORDER NO. 01-096
NPDES PERMIT NO. CA0038091**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:
CITY OF BENICIA
WASTEWATER TREATMENT PLANT
BENICIA, SOLANO COUNTY**

FINDINGS

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

1. *Discharger and Permit Application.* The City of Benicia (hereinafter called 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 Benicia Wastewater Treatment Plant, located at 614 East Fifth Street, Benicia, Solano County, California. The plant provides secondary level treatment of wastewater from domestic, commercial and industrial sources within the City of Benicia. The discharger's service area has a present population of about 28,000. The plant has an average dry weather flow design capacity of 4.5 million gallons per day (mgd), a peak hour wet weather secondary treatment capacity of 18 mgd, and, after improvements that will be completed as part of the wet weather management program, a maximum short term hydraulic capacity of 24 mgd. The plant presently discharges an average dry weather flow of 2.62 mgd, and an annual average flow of 3.17 mgd (2000 data). A location map of the discharger facilities is included as Attachment A of this Order.
3. *Discharge Location - Carquinez Strait.* Treated wastewater is discharged to waters of Carquinez Strait through a submerged deepwater outfall south of the treatment plant, off the north shore of Carquinez Strait. This point of discharge is located at Latitude 38 degrees, 02 minutes, 30 seconds N and Longitude 122 degrees, 09 minutes, 03 seconds W. The discharge is through a submerged diffuser 500 feet from shore at a water depth of 10 feet. The discharge achieves a receiving water to effluent initial dilution of a minimum of 10:1 at all times, and is classified by the Board as a deepwater discharge.
4. Waste Discharge Requirements Order No. 94-094, adopted by the Board on August 17, 1994, previously governed these discharges.
5. The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharge as a major discharge.

Treatment Process Description

6. **Treatment Process.** The treatment process consists of a bar screen/comminuter structure, detritter grit chambers, primary clarifiers, biological secondary treatment via two parallel activated sludge basins or three parallel trains of rotating biological contactors (RBCs), followed by secondary clarification, chlorination and dechlorination. The plant has 1 MG flow equalization and "industrial" waste holding basins where influent can be diverted to and temporarily stored during peak flows or upsets and subsequently returned to the plant for full treatment. The activated sludge system was a part of major improvements to the plant completed in October 2000 which included two secondary clarifiers, solids handling improvements (including a new digester and a new dissolved air flotation thickener), disinfection system modifications, a new Operations and Maintenance building, odor control improvements, a flood protection berm, and site stormwater handling facilities. A treatment process schematic diagram is included as Attachment B of this Order.
7. **Discharge Process.** Treated effluent flows by gravity or is pumped from the outfall box through a 33-inch diameter outfall pipe. The flow then discharges through an effluent diffuser located in the Carquinez Straits. Effluent pumping is required for discharge during periods of high tides in the Straits or to accommodate peak wet weather flows.
8. **Solids Treatment, Handling and Disposal.** Solids removed from the wastewater stream are thickened via a gravity thickener or primary sedimentation basins (primary sludge) and dissolved air flotation (waste activated sludge). The solids are then anaerobically digested and dewatered by a belt filter press. Stabilized, dewatered biosolids are hauled away for off-site disposal to a permitted landfill.

Wet Weather Flow Management - Facilities, Treatment and Discharge Process

9. **Collection System and Pump Stations.** The discharger's sewage system contains 26 lift stations and 148 miles of pipelines. A program is in place to regularly inspect, maintain, and upgrade the lift stations to ensure reliability. The sanitary sewer pipelines have adequate capacity to convey wastewater collected from existing customers discharging to the system and for rainfall-dependent infiltration and inflow (RDI/I) during light rainfall events. However, the sanitary sewer system does not currently have the capacity to carry the peak RDI/I flow rates from large storm events.
10. **Wet Weather Improvement Program Studies.** In August 1997, the discharger initiated a phased RDI/I correction program to prevent sanitary sewer overflows (SSOs). The Phase 1 report, titled *Investigation and Predesign of Immediate Projects to Prevent Overflows*, was completed February 19, 1998. This phase focused on the immediate investigation and remediation of known key SSOs in the City and led to construction of two new lift stations on West I Street in 1998. Phase 2, titled *Analysis of Collection System Flow Conditions*, included flow monitoring of existing sewers, development of design flow rates, modeling of flows to identify overflow locations, and identification of the potential improvements to prevent overflows in each recurrence interval. The results are contained in four technical memorandums dated September 22, 1998, October 28, 1998, March 23, 1999, and April 21, 1999. Phase 3, titled *Evaluation of Sanitary Sewer Structural Conditions*, surveyed the sewer system to assess the structural integrity of sewers in areas that were identified as having potential for high flows. The survey incorporated three activities to determine sources of RDI/I -- smoke testing, manhole inspections, and video inspections of sewers. Two-thirds of the system was found in good condition. Of the areas smoke tested, ninety percent (90%) of the smoke returns were in laterals and other privately-owned portions of the collection system. This phase also included the calculation of costs, development of a recommended alternative, and phasing

of improvements over a 10-year period. Two technical memorandums were produced as part of this phase dated January 8, 1999 and October 28, 1999.

11. ***Wet Weather Design Criteria.*** In March 1999 the Board staff requested that the discharger compare the costs of preventing collection system overflows during storms of varying recurrence intervals to their respective impacts on receiving water beneficial uses in accordance with the conceptual framework (Maintenance Level Approach) contained in the Basin Plan. This approach identifies appropriate levels of treatment and containment depending on the level of water quality protection required in potentially impacted areas. Results were reported in the September 2000 *Infiltration/Inflow (I/I) Improvements Project Master Plan*. Thirteen alternatives were developed with different combinations of relief pipelines, I/I rehabilitation, pumping improvements, and storage. Costs to prevent overflows in a 20-year recurrence interval storm were between \$35 and \$40 million with the costliest component the large amount of additional storage required. With plant pumping modifications and parallel treatment, the cost is reduced to a range of \$8 to \$16 million. The recommended alternative was to provide overflow protection for a recurrence interval of 20 years with the plant improvements. Under this option the plant will operate at a maximum flow rate of 18 mgd, with the peak flows in excess of storage receiving parallel treatment through the existing storage basins.
12. ***Wet Weather Treatment Options.*** The discharger evaluated three alternatives for plant improvements to accommodate the 20-year recurrence storm flow in their September 2000 report. These were:
 - Plant flow rate set at 12 mgd treatment capacity with excess volume to storage for treatment after the storm
 - Plant flow rate set at 18 mgd maximum hydraulic capacity with excess volume to storage for treatment after the storm
 - Plant flow rate set at 18 mgd maximum hydraulic capacity with excess volume treated by parallel process that occurs when passing through the existing multi-purpose sedimentation/storage basins.
13. The report found that the flow rate through the plant could be increased to approximately 18 mgd. Alternative 1, with a total cost of \$40.7 million, would provide an additional 7.7 MG of storage to accommodate the flows above 12 mgd. Alternative 2, at a total cost of \$16.2 million, would provide an additional 2.7 MG of storage to accommodate flows above 18 mgd. Alternative 3, with a total cost of \$9.9 million, would utilize the plant's existing 1 MG storage capacity as a parallel treatment train. The effluent pumping is increased to 24 mgd. At 24 mgd, no additional storage is required for the 20-year storm. Modifications to the chemical treatment system would be provided to allow chemical application in the holding basins, if needed, for increased removals. A maximum of 6 mgd would flow by gravity from the holding basins to the existing chlorine contact basins where it would combine with the remaining treatment plant flow of 18 mgd. The total flow would go through chlorination/dechlorination before being pumped to Carquinez Strait. Given the highly dilute nature of wet weather flows, it is expected that the blended effluent will be consistent with daily maximum conventional constituent effluent limits.
14. ***Infiltration/Inflow Correction and Capital Improvement Program.*** Based upon the recommendations contained in the September 2000 report, a 10-year Capital Improvement Program was developed. The I/I correction projects are broken down into five major categories:

- Relief pipeline – a new trunk pipeline from West 10th Street to the treatment plant site at East 5th Street to provide additional conveyance capacity for peak wet weather flows
 - Replacement of undersized sewers – replacement and/or paralleling of existing collector sewer at Military West between West 10th Street and West 14th Street
 - Wet weather pumping improvements – pumping capacity increases at the influent and effluent pumping stations at the treatment plant. These measures will increase the influent and effluent pumping capacities to 31 and 24 mgd, respectively. The improvements also include a new influent bar screen, modifications to the storage basins to provide a parallel treatment process, if needed, for flows through the plant in excess of 18 mgd and upgrading of the standby power for the plant to provide the required reliability in the new facilities
 - Repair of undersized and/or deteriorated sewers – replacement of sewers identified as lacking in needed capacity or in poor or fair structural condition
 - Master plan updates – additional engineering to measure the effectiveness of the initial project, and then refining the timing and nature of the next project based on the better information which will then exist. This approach of continually optimizing the program as each project is completed and placed in service will include flow sampling and monitoring, I/I rehabilitation studies, additional modeling and video inspections of sewers to identify any other necessary or desirable I/I improvements.
15. The first projects to be completed are those that provide the greatest reduction in risk of sanitary sewer overflow and are the relief pipeline, wet weather pumping improvements, and the 14" diameter collector sewer along Military West between West 10th and West 14th Streets. Design of the improvements is expected to commence October 2001.
16. ***Wet Weather Flow Management Program.*** The discharger's program for managing wet weather flows and controlling overflows, described in findings 9 through 13 above, includes the new activated sludge secondary treatment facilities improvements, which were completed in 2000, the parallel treatment facilities to accommodate up to 24 mgd of peak wet weather flow, relief sewer facilities to convey up to 31 mgd to the treatment plant, and the ongoing program for collection system improvements to prevent sewer system overflows. This Order requires continued implementation of this program and development of a Wet Weather Facilities Operation Plan.

Stormwater Discharge Description

17. *Treatment Plant Stormwater Discharges.*

- a. ***Regulations.*** Federal Regulations for stormwater discharges were promulgated by the USEPA on November 19, 1990. The regulations [40 CFR Parts 122, 123, and 124] require specific categories of industrial activity (industrial stormwater) to obtain a 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. ***Exemption from Coverage under Statewide Stormwater General Permit.*** The State Board developed a statewide NPDES permit for stormwater discharges associated with industrial activities (NPDES General Permit CAS000001) that was adopted November 19, 1991, amended September 17, 1992, and reissued April 17, 1997. Coverage under the General Permit is not required because all stormwater from within the treatment plant area is contained and treated along with regular wastewater flows to the treatment plant.

Regional Monitoring Program

18. On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program (RMP) 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 has come to be known as the San Francisco Bay Regional Monitoring Program for Trace Substances. This Order specifies that the discharger shall continue to participate in the RMP, which involves 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**

19. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (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 Water Resources Control Board (SWRCB) and the Office of Administrative Law on July 20, 1995 and November 13, 1995, respectively. 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 beneficial uses. This Order implements the plans, policies and provisions of the Board's Basin Plan.

Beneficial Uses

20. Beneficial uses for the Carquinez Strait (CS) receiving water, as identified in the Basin Plan and based on known uses of the receiving waters in the vicinity of the discharge, are:
- a. Industrial Service Supply
 - b. Navigation
 - c. Water Contact Recreation
 - d. Non-contact Water Recreation
 - e. Ocean Commercial and Sport Fishing
 - f. Wildlife Habitat
 - g. Preservation of Rare and Endangered Species
 - h. Fish Migration
 - i. Fish Spawning
 - j. Estuarine Habitat

State Implementation Plan (SIP)

21. 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. 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 USEPA 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 Program.

California Toxics Rule (CTR)

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

Other Regulatory Bases

23. Water quality objectives and effluent limitations in this permit are based on the SIP; the plans, policies and water quality objectives and criteria of the Basin Plan; California Toxics Rule (Federal Register Volume 65, 97); *Quality Criteria for Water* (EPA 440/5-86-001, 1986 and subsequent amendments, "USEPA Gold Book"); applicable Federal Regulations (40 CFR Parts 122 and 131); the National Toxics Rule (57 FR 60848, 22 December 1992 and 40 CFR Part 131.36(b), "NTR"); NTR Amendment (Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237); USEPA 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. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR 122.44(d) specifies that water quality based effluent limits may be set based on USEPA 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.

24. In addition to the documents listed above, other USEPA guidance documents upon which BPJ was developed may include in part:

- Region 9 Guidance For NPDES Permit Issuance, February 1994;
- USEPA 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;
- Draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-based Effluent Limitations set Below Analytical Detection/Quantitation Levels, March 18, 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;
- Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies, April 19, 1996;
- Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final, May 31, 1996;
- Draft Whole Effluent Toxicity (WET) Implementation Strategy, February 19, 1997.

Basis for Effluent Limitations

General Basis

25. **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 are applicable to the discharges herein.

Applicable Water Quality Objectives

26. The Basin Plan includes numeric water quality objectives (WQOs) as well as a narrative WQO for toxicity in order to protect beneficial uses: "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms". Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information. The California Toxics Rule (CTR) promulgates numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. The CTR numeric water quality criteria (WQC) apply to pollutants for which there are no applicable Basin Plan WQOs.

Basin Plan Receiving Water Salinity Policy

27. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality objectives. 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.

CTR Receiving Water Salinity Policy

28. 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 and Hardness

29. The receiving waters for the subject discharge are the waters of Carquinez Strait, which is a tidally influenced waterbody, with significant fresh water inflows during the wet weather season. Salinity data indicate that the receiving waters for the subject discharge are estuarine according to the CTR definition. Previous permit limits were based on marine (saltwater) standards using 1986 Basin Plan's geographical salinity classification scheme whereby Carquinez Strait was the border between marine and freshwater. Due to new information in the CTR, this Order's effluent limitations are based on the lower of the freshwater and marine water quality objectives or criteria (WQO/WQC) based on the receiving waters having salinities between 1 and 10 ppt more than 95% of the time.

Technology Based Effluent Limits

30. Permit effluent limits for conventional pollutants are technology based. Limits in this permit are the same as in the prior permit for the following constituents: Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), settleable matter, oil and grease, and chlorine residual. Technology-based effluent limitations are put in place to ensure that full secondary treatment is achieved by the

wastewater treatment facility. Federal regulations allow the parameter BOD to be substituted with the parameter Carbonaceous BOD (CBOD). The previous permit included limits for BOD only. This permit includes technology based effluent limits for CBOD as well as BOD.

Water Quality Based Effluent Limitations

31. Toxic substances are regulated by water quality based effluent limitations (WQBELs) derived from USEPA national water quality criteria listed in the Basin Plan Tables 3-3 and 3-4, the National Toxics Rule, or USEPA Gold Book, the CTR, the SIP, and/or best professional judgment. WQBELs in this Order are revised and updated from the limits in the previous permit order and their presence in this Order is based on the evaluation of the discharger's data as described below under the Reasonable Potential Analysis. Numeric WQBELs are required for all constituents that have reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the State Implementation Plan (SIP). If the discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. Further details about the effluent limitations are given in the associated Fact Sheet, which is incorporated as part of this Order.

Receiving Water Ambient Background Data used in Calculating WQBELs

32. Ambient background values are utilized in the reasonable potential analysis (RPA) and in the calculation of effluent limitations. For RPA, ambient background concentrations shall be the observed maximum water column concentration. For calculating WQBELs, as stated in the SIP, ambient background concentration shall be the observed maximum ambient water column concentration or the arithmetic mean of observed ambient water concentrations (for the criterion/objective that is intended to protect human health from carcinogenic effects). The most representative location of ambient background data for this discharge is the Central Bay, due to tidal fluctuations upstream and downstream of the discharge point, Carquinez Strait. The RMP stations at Yerba Buena Island and Richardson Bay located in the Central Bay have been sampled for most of the inorganic 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. However, not all the constituents listed in the CTR were analyzed by the RMP during this time. This data gap is filled by a provision in this Order that requires the discharger to determine ambient background for those constituents. This requirement may occur either through participation in new RMP special studies or through equivalent studies conducted jointly with other dischargers. 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.

Constituents Identified in the 303(d) List

33. On May 12, 1999, the USEPA approved a revised list of impaired waterbodies prepared by the State. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Carquinez Strait and San Pablo Bay are listed as impaired water bodies. The pollutants impairing the Carquinez Strait and San Pablo Bay include copper, mercury, nickel, selenium, exotic species, PCBs total, dioxin and furan compounds, chlordane, DDT, Dieldrin, Diazinon, and dioxin-like PCBs.

Dilution and Assimilative Capacity

34. In response to the State Board's recommendation (SB Order # 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...". So for bioaccumulative pollutants, based on best professional judgment, dilution credit is not included in calculating the final WQBEL. However, in calculating the final WQBEL to facilitate the demonstration of feasibility to comply for non-bioaccumulative constituents, it is assumed there is assimilative capacity, and a 10:1 dilution is granted.

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

35. Based on the 303(d) list of pollutants impairing Carquinez Strait and San Pablo Bay, the Board plans to adopt Total Maximum Daily Loads (TMDLs) for these pollutants 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 Carquinez Strait and San Pablo Bay may result in revision of the schedules and/or provide schedules for other pollutants.
36. The TMDLs will establish waste load allocations (WLAs) and load allocations 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.
37. Compliance Schedules: 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 RWQCB 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 its affiliation with the Bay Area Clean Water Association (BACWA) and through BACWA's TMDL Memorandum of Understanding (MOU) agreement with the Board.
38. 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. 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, but may also be used to update/revise the 303(d) list and/or change the water quality objectives for the impaired waterbodies including Carquinez Strait and San Pablo 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

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

- current performance; or
- previous order's limits

This permit establishes interim performance-based mass limits in addition to interim concentration limits to limit discharge of 303(d)-listed bioaccumulative pollutants' mass loads to their current levels. These interim performance-based mass limits are based on recent discharge data. Where pollutants have existing high detection limits, interim mass limits are not established because meaningful performance-based mass limits cannot be calculated for pollutants with non-detectable concentrations. However, the discharger is required to investigate alternative analytical procedures that result in lower detection limits, either through participation in RMP special studies or through equivalent studies conducted jointly with other dischargers.

40. Compliance schedules are established 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. 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. 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:
- i. 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;
 - ii. documentation of source control and/or pollution minimization efforts currently under way or completed;
 - iii. a proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
 - iv. a demonstration that the proposed schedule is as short as practicable
41. On June 22, 2001 (and July 30, 2001), the discharger submitted a feasibility study (and a revised feasibility study) that demonstrated, according to the Basin Plan (page 4-14, Compliance Schedule) or SIP (Section 2.1, Compliance Schedule), it is infeasible to immediately comply with the WQBELs calculated according to Section 1.4 of the SIP. Therefore, this permit establishes a five-year compliance schedule of August 31, 2006 for final limits based on CTR or NTR criteria (e.g., copper and selenium), a compliance schedule of March 31, 2010 for final limits based on the Basin Plan objectives (e.g., mercury). The August 31, 2006 and March 31, 2010 compliance schedules both exceed the length of the permit, therefore, these calculated final limits are intended for point of reference for the feasibility demonstration and are only included in the findings by reference to the fact sheet. Additionally, the final WQBELs for copper, selenium and mercury will very likely be based on either the SSO or TMDL/WLA as described in other findings specific to each of the pollutants.
42. 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 data collection in the ambient background and to determine site-specific objectives. The discharger is required to fully 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.

43. During the compliance schedules, interim limits are included based on current treatment facility performance or on existing permit 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.

Antibacksliding and Antidegradation

44. The interim limits in this permit are in compliance with antidegradation because the interim limits hold the discharger to current facility performance, because the interim limits meet compliance limits in the State Implementation Policy, and because the final limit is in compliance with anti-degradation requirements.

Specific Basis

Reasonable Potential Analysis

45. As specified in 40 CFR 122.44(d) (1) (i), 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." Using the method prescribed in Section 1.3 of the SIP, Board staff has 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 ("Reasonable Potential Analysis" or "RPA"). For all parameters that have reasonable potential, numeric water quality-based effluent limitations (WQBELs) are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQCs from the USEPA Gold Book, the NTR, and the CTR.
46. ***Reasonable Potential Methodology.*** The method for determining RPA involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data. The RPA for all constituents is based on zero dilution, according to section 1.3 of the SIP. There are three triggers in determining reasonable potential.
- The first trigger is activated when the maximum effluent concentration (MEC) is greater than the lowest applicable water quality objective (WQO), which has been adjusted for pH, hardness (assumed in this permit analysis at 100 mg/L), and translator data, if appropriate. An MEC that is greater than the (adjusted) WQO means that there is reasonable potential for that constituent to cause or contribute to an excursion above the WQO and a water quality based effluent limitation (WQBEL) is required. (Is the $MEC > WQO$?)
 - The second trigger is activated if observed maximum ambient background concentration (B) is greater than the adjusted WQO and the MEC is less than the adjusted WQO or 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. (Is $B > WQO$?)
 - The third trigger is activated after a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO. A limit is only required under certain circumstances to protect beneficial uses.
47. ***Summary of RPA Data and Results.*** The RPA was based on effluent monitoring data from January 1994 through December 2000 for metals, selenium and cyanide, and Pretreatment Reports from February 1997 through December 2000 for organic toxic pollutants. The reason that seven years of data were used instead of three years is that the discharger's previous permit required, and the discharger performed, quarterly monitoring. In order to gain a representative number of samples, it was necessary to obtain data from 1994 through 2000. Based on the RPA methodology described

above and in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above water quality objectives: cadmium, copper, lead, mercury, nickel, selenium, cyanide, DDE and Dieldrin. Based on the RPA, numeric water quality based effluent limits are required to be included in the permit for these constituents. DDE and Dieldrin were not detected in any of the discharger's effluent samples, but all detection levels were above the lowest applicable WQO. However, background concentrations were above the adjusted WQO (trigger #2), therefore RP is affirmed and final limits are included with compliance based on the Minimum Levels in Appendix 4 of the SIP. These Minimum Levels were derived from data provided by State certified analytical laboratories in 1997 and 1998.

48. **RPA Determinations.** The maximum effluent concentrations (MEC), WQOs, bases for the WQOs, background concentrations used and reasonable potential conclusions from the RPA are listed in the following table for all constituents analyzed. The RPA results for most of the constituents in the CTR (Nos. 17-126 except 109 or 111) were not able to be determined because of the lack of background data, an objective, or effluent data. (Further details on the RPA can be found in the Fact Sheet.)

Constituent ¹	WQO (µg/L)	Basis ²	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	Reasonable Potential
Arsenic	36	BP, sw	2.6	2.22	No
Cadmium	1.1	BP, fw, H=100	7.6	0.13	Yes
Chromium	11	BP, fw, H=100	5.4	4.4	No
Copper*	3.7	CTR, sw, T=0.83	40	2.45	Yes*
Lead	3.2	BP, fw, H=100	4	0.8	Yes
Mercury*	0.025	BP, fw	0.05	0.006	Yes*
Nickel*	8.3	BP, sw	13	3.5	Yes*
Selenium*	5.0	CTR, fw	7	0.19	Yes*
Silver	2.3	BP, sw	1	0.07	No
Zinc	58	BP, fw, H=100	43	4.6	No
Cyanide	1	NTR	41	Not available (NA)	Yes
TBT	0.005	BP, sw	Not available	Not available (NA)	Undetermined ⁵
Dioxin* ³	1.4x10 ⁻⁸	CTR (#16)	Not available	Not available (NA)	Undetermined ⁴
Dieldrin* ³	0.00014	CTR (#111)	All non-detect	0.000264	Yes
4,4-DDE	0.00059	CTR (#109)	All non-detect	0.00069	Yes
CTR #s 17-126 except 109 or 111	Various or NA	CTR	Non-detect, less than WQO, or no WQO	Less than WQO or Not Available	No or Undetermined ⁵

- *Constituents on 303(d) list, Dioxin is only 2,3,7,8-TCDD congener.
- BP = Basin Plan; CTR = California Toxics Rule; fw = freshwater; sw = saltwater; H = assumed hardness of 100 in mg/L as CaCO₃; T = translator to convert dissolved to total copper.
- Dieldrin and DDE: RPA = Yes, based on B > WQO.
- Undetermined due to lack of effluent data.
- Undetermined due to lack of background data, lack of objective, or lack of effluent data (See Fact Sheet Table for full RPA results).

49. ***RPA Results for Impairing Pollutants.*** While TMDLs and WLAs are being developed, interim concentration are established in this permit for 303(d) listed pollutants that have reasonable potential to cause or contribute to an excursion above the water quality standard. In addition, mass limits are required for bioaccumulative 303(d) –listed pollutants that can be reliably detected. Constituents on the 303(d) list for which the RPA determined a need for effluent limitations are copper, mercury, nickel, selenium, 4,4-DDE and Dieldrin. Final determination of RP for other constituents identified on the 303(d) list could not be performed due to lack of available effluent data (e.g., dioxin), lack of background data (PCBs and dioxin) or lack of an established water quality objective or criterion.
50. ***Interim Limits with Compliance Schedules.*** The discharger has demonstrated infeasibility to meet the WQBELs calculated according to Section 1.4 of the SIP for copper, mercury and selenium, thereby complying with the infeasibility requirements in Section 2.1 of the SIP. Therefore, interim concentration limits are derived in this Order for copper, mercury, and selenium based on recent treatment plant performance using the 99.87 percentile of the log-transformed effluent data (or three standard deviations above the mean). The compliance schedules for mercury is ten years, based on the Basin Plan, while the compliance schedules for copper and selenium are five years, based on the SIP and CTR. Mass limits are required for mercury and selenium based on current performance at the 99.87 percentile. An interim limit for cyanide, based on the previous permit limit of 25 µg/L, is also established in this Order as explained below. The data collection period for cyanide is two years in order to obtain background data necessary for final limit calculations.

Specific Pollutants

51. ***Phenols.*** 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 which 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 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. Except for one sample that detected phenol at below the WQO, the Discharger's effluent data for specific phenolic compounds for the last three years were all non-detect with the detection limits either all below the WQO or the lowest detection level was below the WQO. Therefore, there is no RP for phenolic compounds. This Order requires the Discharger to collect the necessary data, with a permit re-opener to establish limits if new data show that there is a reasonable potential and limits are necessary.
52. ***Dioxin.***
- (1) The CTR establishes a numeric human health WQO of 0.14 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.
 - (2) The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have reasonable potential with respect to narrative criteria. The preamble further states that U.S. EPA intends to use the 1998 World Health Organization

Toxicity Equivalence Factor (TEF)¹ scheme in the future and encourages California to use this scheme in State programs. Additionally, the CTR preamble states U.S. EPA's intent to adopt revised water quality criteria guidance subsequent to their health reassessment for dioxin-like compounds.

- (3) 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.
- (4) 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 the scientific community's consensus that these compounds associate with particulates, accumulate in sediments, and bio-accumulate in the fatty tissue of fish and other organisms.
- (5) 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.
- (6) The discharger has not monitored for dioxins and furans. Therefore, no effluent data exists to conduct an RPA or calculate an interim limit. Pursuant to the SIP, the discharger will be required to monitor for dioxins and furans. Once there is enough information an RPA will be conducted to determine if limits are required.

53. Polynuclear Aromatic Hydrocarbons (PAHs). The RPA was conducted on individual PAHs not total PAHs, as required by the SIP and CTR. The effluent monitoring data set is based on semiannual sampling from 1997 to 2000. All of the concentrations were reported as non-detected with detection limits higher than the WQO's. Background concentrations were all below the WQOs. Based on the SIP, there is insufficient data to determine reasonable potential. Provision 5 requires the discharger to characterize the effluent for individual PAH constituents listed in Table 2 of the SMP with improved detection limits where feasible. Upon completion of the required effluent monitoring, the Board shall use the gathered data to complete the RPA for all individual PAH constituents (as listed in the CTR) and determine if a water quality-based effluent limitation is required.

CTR Number	Constituent	WQO ¹ (µg/L)	MEC ² (µg/L)	B	RP ³
60	Benzo(a)Anthracene	0.049	ND (0.2-0.3)	0.0053	U
61	Benzo(a)Pyrene	0.049	ND (0.2-0.3)	0.0025	U
62	Benzo(b)Fluoranthene	0.049	ND (0.2-0.3)	0.0046	U
64	Benzo(k)Fluoranthene	0.049	ND (0.2-0.3)	0.0015	U
73	Chrysene	0.049	ND (0.2-0.3)	0.0041	U
74	Dibenzo(a,h)Anthracene	0.049	ND (0.2-0.3)	0.0006	U
92	Indeno(1,2,3-cd) Pyrene	0.049	ND (0.2-0.3)	0.004	U

1. WQO based on the numeric WQO for protection of human health through consumption of organisms only.
2. All discharger data was non-detect and ranged from 0.2 to 0.3 µg/L.
3. U = Undetermined. All RPA results are undetermined due to detection levels higher than WQOs.

¹ The 1998 WHO scheme includes TEFs for dioxin-like PCBs. Since dioxin-like PCBs are already included within "Total PCBs", for which the CTR has established a specific standard, dioxin-like PCBs are not included in this Order's version of the TEF scheme.

54. *4,4 DDE and Dieldrin*. Regional Board staff could not determine an MEC for 4,4 DDE because it was not detected in the effluent, and all of the detection limits are higher than lowest WQO (Section 1.3 of the SIP). Regional Board staff conducted the RPA by comparing the WQO with RMP ambient background concentration data gathered using research-based sample collection, concentration, and analytical methods. The RPA indicates that 4,4 DDE and dieldrin have reasonable potential, and numeric WQBELs are required.
55. The current 303(d) list includes the Carquinez Strait as impaired for dieldrin and DDT; 4,4 DDE is chemically linked to the presence of DDT. The Regional Board intends to develop TMDLs that will lead towards overall reduction of dieldrin and 4,4-DDE. The water quality-based effluent limits specified in this Order may be changed to reflect the WLAs from this TMDL. 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 these compounds and present the preferred method for approval by U.S. EPA. If analytical methodologies improve and the detection levels decrease to a point that show discharge concentrations above the limit in this Order, the Board will re-evaluate the discharger's feasibility to comply with the limits and determine the need for a compliance schedule and interim performance limits at that time. Since dieldrin and 4,4-DDE are both 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.
56. *Other organics*. 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. In most cases (about 100 out of the 126 priority pollutants), reasonable potential cannot be determined because detection limits are higher than the lowest WQO's and/or ambient background concentrations are not available. 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, a reasonable potential analysis will be conducted to determine whether to add numeric effluent limitations to the Order or to continue monitoring.
57. *Effluent RP Monitoring*. This Order does not include effluent limitations for constituents that do not show a reasonable potential, but continued monitoring for them is required as described in the SMP. If concentrations of these constituents increase significantly the discharger will be required to investigate the source of the increases and establish remedial measures if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable water quality standard.
58. *Permit Reopener*. 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 Regional Board will make this determination based on monitoring results.

Development of Effluent Limitations

Copper

59. *CTR Copper Water Quality Objectives*. Copper is listed on the 303(d) list as a pollutant that is impairing San Francisco Bay. The saltwater objective for copper in the adopted CTR is 3.1 µg/L dissolved copper. Included in the CTR are translator values to convert the dissolved objectives to total objectives. The discharger may perform a translator study to determine a more site-specific

translator. The SIP, Section 1.4.1, and the June 1996 EPA guidance document, entitled *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion*, describe this process and provides guidance on how to establish a site-specific translator.

60. *Water Effects Ratios*. The CTR provides for adjusting the criteria by deriving site-specific objectives through application of the water-effect ratio (WER) procedure. The U.S. EPA includes WERs to assure that the metals criteria are appropriate for the chemical conditions under which they are applied. 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's 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.
61. *Effluent Limitation for Copper*. This Order contains a copper WQBEL because the 1998 303(d) list includes Carquinez Strait as impaired by copper, and because, based on the RPA, staff determined that there is reasonable potential for exceedances in the WQO for copper in the subject discharge. The discharger and other dischargers from north of the Dumbarton Bridge are currently conducting impairment assessment studies designed to collect additional data on copper in San Francisco Bay. The Regional Board will consider these studies in its 303(d) listing decision in 2002, and when considering any SSO proposed for copper. The final WQBEL for copper will be based on the WLA contained in a TMDL if one is completed. Alternatively, the copper WQBEL may be developed consistent with SIP procedures in Section 5.2 if the impairment studies support adoption of an SSO. If the 303(d)-listing process in 2002 concludes a finding that the Bay is not impaired by copper, then a de-listing of Carquinez Strait for copper will result. Existing RMP dissolved copper results show most of the Bay north of the Dumbarton Bridge complies with the CTR's 3.1 µg/L dissolved copper WQO. The SIP requires the interim numeric effluent limit for the pollutant be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. This Order establishes an interim performance-based copper limit of 32 µg/L for the subject discharge, which is more stringent than the prior Order limit of 37 µg/L.
62. *Treatment Plant Performance and Compliance Attainability for Copper*. Effluent concentrations during the past seven years (1994-2000) range from <2.0 to 40.0 µg/L (82 samples). Except for the one 40 µg/L sample in November 1996, the effluent discharged to Carquinez Strait has been in consistent compliance with the previous permit limit of 37 µg/L.

Mercury

63. *Mercury Water Quality Objectives*. The national chronic criterion for mercury aims at protecting human health by limiting the bioaccumulation of methyl-mercury in fish and shellfish to levels that are safe for human consumption. The Gold Book describes the derivation of the mercury criteria. The fresh water mercury criterion is based on a Final Residual Value of 0.012 µg/L derived from the bioconcentration factor (BCF) of 81,700 for methyl mercury with the fathead minnow, assuming that essentially all discharged mercury is methyl-mercury. The 1986 Basin Plan listed the saltwater criterion of 0.025 µg/L was similarly derived using a BCF of 40,000 for methyl-mercury with the eastern oyster. The CTR adopted a dissolved mercury WQO of 0.05 µg/L for protection of human health. However, Footnote b in the CTR's Table of Criteria for Priority Toxic Pollutants states
"criteria apply to California water except for those waters subject to objectives in Table III-2A and III-2B of the San Francisco Regional Water Quality Control Board's (SFRWQCB) 1986 Basin Plan, that were adopted by the SFRWQCB and the State Board, approved by U.S. EPA, and which continue to apply."

Thus, while ambient background concentrations of mercury in Central Bay are below both fresh- and salt-water aquatic species WQOs, the more stringent WQOs intended to protect human consumption of fish and shellfish apply.

64. *Mercury TMDL.* The current 303(d) list includes Carquinez Strait as impaired by mercury, due to exceedences in fish tissue levels. Methyl-mercury is a persistent bioaccumulative pollutant. The Regional Board intends to develop a TMDL that will reduce mercury mass loadings in Carquinez Strait. The final mercury effluent limitations will be based on the discharger's WLA in the TMDL. The final effluent limitation for a bioaccumulative pollutant will be a WQBEL derived from a WLA contained in an adopted TMDL.
65. *Mercury Control Strategy.* Regional Board staff is developing a TMDL to control mercury levels in San Francisco Bay. The Regional Board, together with other stakeholders, will cooperatively develop source control strategies as part of TMDL development. Municipal discharge point sources may not be the most significant mercury loadings to the Estuary. 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 cooperate in maintaining ambient receiving water conditions by complying with performance-based mercury mass emission limits. Therefore, this Order includes interim concentration and mass loading effluent limitations for mercury, as described in the paragraphs below. The discharger is required to implement source control measures and cooperatively participate in special studies as described below.
66. *Concentration-Based Mercury Effluent Limitation.* This Order establishes an interim monthly average limit for mercury based on staff's analysis of the performance of over 20 secondary treatment plants in the Bay Area. This analysis is described in a Board staff report titled "Staff Report, Statistical Analysis of Pooled Data from Region-wide Ultra-clean Mercury Sampling". The objective of the analysis is to provide an interim concentration limit that characterizes regional facility performance using only ultra-clean data and compliance of which will ensure no further degradation of the receiving water quality resulting from the discharge. The conclusions of the report demonstrate that the statistical performance based mercury limit for a secondary plant is 87 ng/L, and for an advanced secondary plant is 23 ng/L. The discharger operates a secondary-level treatment plant, therefore the value of the interim concentration-based limit is 87 ng/L. Based on Board staff's report titled "Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to U.S. EPA," dated June 30, 2000, 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.
67. *Mass-Based Mercury Effluent Limitation.* This Order establishes a mercury mass-based effluent limitation of 0.11 kilograms per month (Effluent Limitations - Section B.6.a). This mass-based effluent limitation is calculated using the formulas given in Effluent Limitations below. This mass based effluent limitation maintains current loadings until a TMDL is established and is consistent with state and federal antidegradation and antibacksliding requirements. The final mass based effluent limitation will be based on the WLA derived from the mercury TMDL.
68. *Treatment Plant Performance and Compliance Attainability.* Prior to October 1997, when sampling and analytical began to attain lower detection levels, effluent mercury concentrations were consistently below the detection level of 0.2 µg/L. Effluent concentrations from October 1997 through December 2000 ranged from 0.011 to 0.05 µg/L (25 samples). The effluent discharged to

Carquinez Strait has been in consistent compliance with the previous permit limits of $1\mu\text{g/L}$ and $0.21\mu\text{g/L}$.

69. *Mercury Source Control and Special Studies.* Provision 3 below requires the discharger to develop and implement a source control program. The source control program should maximize the discharger's control over mercury sources in its influent, and should optimize costs and benefits. The source control program will also evaluate the discharger's ability to consistently comply with concentration and mass loading limits, and to reduce any significant, controllable sources of mercury impairment of the receiving waters. 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 time schedule for the mercury source control program.

Selenium

70. *Selenium Water Quality Objectives.* The national chronic criterion for selenium is $5\mu\text{g/L}$, total recoverable. Footnote q in the CTR's Table of Criteria for Priority Toxic Pollutants states:
"This criterion was promulgated for specific waters in California in the NTR and promulgated in the total recoverable form. The specific waters to which the NTR criterion applies include: Waters of the San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta..."
71. *Interim Mass Emission Limit.* Selenium is on the 303(d) list for impairing the San Francisco Bay. Like mercury, selenium also bioaccumulates up the food chain. To prevent further impairment of receiving water by selenium while the TMDL is being developed, an interim mass emission limit is established in this permit, which is based on treatment plant performance at the 99.87 percentile value (or average + $3*$ standard deviation) from effluent data gathered between January 1994 through December 2000. The total mass loadings were calculated using a 12-month moving average. The selenium mass emission limit is 1.67 kilograms per month.
72. *Treatment Plant Performance and Compliance Attainability.* The effluent (detected concentrations) discharged to Carquinez Strait has been in consistent compliance with the previous permit limit of $50\mu\text{g/L}$. Effluent concentrations during the past seven years (1994-2000) range from <1.0 to $7.0\mu\text{g/L}$ (30 samples excluding the two $<100\mu\text{g/L}$). The effluent data set used to determine the interim mass limit was modified to exclude two $<100\mu\text{g/L}$ reported values in October 1996 and February 1997. The two $<100\mu\text{g/L}$ reported values are not considered representative of the effluent as the high detection limits could be a result of significant lab matrix interference. Including these high values would have set inappropriately high interim and mass limits. As a result of switching labs, for the past 2 years the discharger has met the minimum level ($1\mu\text{g/L}$) as prescribed by the SIP.
73. *Interim Effluent Concentration Limit.* The discharger has demonstrated infeasibility of meeting final limits calculated according to Section 1.4 of the SIP, and has complied with the infeasibility requirements in Section 2.1 of the SIP. A compliance schedule in the permit is allowed given that the SIP procedures for calculating these limits are new. Therefore, an interim performance-based limit is established in this permit and the final limits will either be based on the Waste Load Allocation (WLA) derived from a TMDL or will be the limit calculated according to the SIP, Section 1.4. The SIP requires an interim numeric effluent limit for the pollutant based on current treatment facility performance, or previous permit limitations, whichever is more stringent. This Order establishes interim daily maximum concentration effluent limit for selenium of $31\mu\text{g/L}$, based on current facility performance at the 99.87 percentile (using a standard statistical probit analysis). This interim limit is

lower than the previous limit of 50 µg/L. The interim limit shall apply for a period of 5 years as this is a CTR-based objective.

Dioxins and Furans

74. *Numerical Water Quality Objective.* The CTR establishes a numeric human health WQO of 0.14 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. A Finding above discusses the use of TEQ's for other dioxin-like compounds, the RPA procedures, and SIP requirements. Staff will use TEQs to translate the narrative WQOs to numeric WQOs for the other 16 congeners.
75. *Interim Monitoring Requirements.* The discharger's previous permit did not contain limits or monitoring requirements for dioxins. Since the discharger has not monitored for dioxins and furans, there is no effluent data to conduct a RPA or calculate an interim limit. Pursuant to the SIP, the discharger will be required to monitor for dioxins and furans. If there is Reasonable Potential based on sufficient effluent data, a performance-based interim mass limit will be established based on TEQs. For bioaccumulative priority pollutants for which the receiving water has been included on the 303(d) list, SIP suggests that the Board should develop a mass loading limit at representative, current levels pending TMDL development in order to implement the applicable water quality standard. The Final Limit for dioxins and furans will be derived based on the TMDL/WLA to be developed by U.S. EPA. Based on the Board staff's report titled "Dioxin in the Bay Environment – A Review of the Environmental Concerns, Regulatory History, Current Status, and Possible Regulatory Options", dated February 1998, and U.S. EPA slides titled "Status of Dioxin Reassessment and Policy Response", 2000, municipal and industrial sources are very small contributors of the dioxins and furans load to the Bay, and the dominant sources are from current and historical air emissions.

Nickel

76. *Water Quality Objective.* The Basin Plan contains a numeric water quality objective for total nickel of 7.1 µg/L. No translator value is needed.
77. *Final Effluent Limitations.* Based on the comparison of MEC and the AMEL calculated based on Section 1.4 of the SIP, the discharger can comply with the final WQBELs, monthly average of 30.2 µg/L and daily maximum of 70 µg/L. The final WQBEL may be revised based on TMDL/WLA or SSO and translator. The current 303(d) list includes Carquinez Strait as impaired by nickel. The discharger is participating in impairment assessment studies aimed at gathering additional data on nickel concentration in San Pablo Bay and Carquinez Strait. The Regional Board will consider these studies in its 303(d) listing decision in 2002, and when considering any SSO proposed for nickel. Existing RMP dissolved nickel results show most of the Bay north of the Dumbarton Bridge is in compliance with the CTR's dissolved nickel WQO of 8.2 µg/L.
78. *Treatment Plant Performance and Compliance Attainability.* Effluent concentrations during the past seven years (1994-2000) range from 2.0 to 20.0 µg/L (32 samples). The effluent discharged to Carquinez Strait has been in consistent compliance with the previous permit daily average limit of 65 µg/L.

Cyanide

79. The CTR specifies that the salt water Criterion Chronic Concentration (CCC) of 1 µg/L for cyanide is applicable to Central San Francisco Bay. This CCC value is below the presently achievable reporting limit (ranges from approximately 3 to 5 µg/L).

80. The background data set was very limited as there was only six dissolved and six total cyanide data points, which were all non-detects (<1 ug/L) collected in 1993 from the two background stations. The final WQBEL 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).
81. Concern has been raised by the discharger 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 US EPA Region X.
82. This Order contains a provision requiring the discharger to conduct a study for data collection. The discharger 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 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 final limit, the permit revision will establish a maximum five-year compliance schedule. In the meantime, an interim limit is established based on the previous permit limit of 25 µg/L.

Whole Effluent Acute Toxicity

83. This Order includes effluent limits for whole-effluent acute toxicity. Compliance evaluation is based on 96-hour flow-through bioassays. USEPA promulgated updated test methods for acute and chronic toxicity bioassays on October 16, 1995, in 40 CFR Part 136. Dischargers have identified several practical and technical issues that need to be resolved before implementing the new procedures, referred to as the 4th Edition. The primary unresolved issue is the use of younger, possibly more sensitive fish, which may necessitate a reevaluation of permit limits. SWRCB staff recommended to the regional boards that new or renewed permit holders be allowed a time period in which laboratories can become proficient in conducting the new tests. A provision is included in this Order granting the discharger 12 months to implement the new test method. In the interim, the discharger is required to continue using the current test protocols.

Whole Effluent Chronic Toxicity

84. a. *Program History.* The Basin Plan contains a narrative toxicity objective stating that "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms" and that "there shall be no chronic toxicity in ambient waters." In 1986, the Board initiated the Effluent Toxicity Characterization Program (ETCP), with the goal of developing and implementing toxicity limits for each discharger based on actual characteristics of both receiving waters and waste streams. Dischargers were required to monitor their effluent using critical life stage toxicity tests to generate information on toxicity test species sensitivity and effluent variability to allow development of appropriate chronic toxicity effluent limitations. In 1988 and 1991, selected dischargers conducted two rounds of effluent characterization. A second round was completed in 1995, and the Board is evaluating

the need for a third round. Board guidelines for conducting toxicity tests and analyzing results were published in 1988 and last updated in 1991. The Board adopted Order No. 92-104 in August 1992 amending the permits of eight dischargers to include numeric chronic toxicity limits. However, due to the court decision which invalidated the California Enclosed Bays and Estuaries Plan and Inland Surface Waters Plan, on which Order No. 92-104 was based, the SWRCB stated, by letter dated November 8, 1993, that the Board will have to reconsider the order. In the meantime, permits now include narrative rather than numeric limits. The numeric test values should then be used as toxicity "triggers" to first accelerate monitoring and then initiate Toxicity Reduction Evaluations (TREs).

- b. *Regional Board Program Update.* The Board intends to reconsider Order No. 92-104 as directed by the SWRCB, and to update, as appropriate, the Board's Whole Effluent Toxicity (chronic and acute) program guidance and requirements. This will be done based on analysis of discharger routine monitoring and ETCP results, and in accordance with current USEPA and SWRCB guidance. In the interim, decisions regarding the need for and scope of chronic toxicity requirements for individual dischargers will continue to be made based on BPJ as indicated in the Basin Plan.
- c. *Discharge Monitoring.* The discharger participated in the second round of ETCP screening and variability testing in 1993-1995. The variability study was conducted in full (eighteen events) for two of the three most sensitive species, the mysids and fathead minnow. The third test organism, the echinoderm, proved to be less sensitive than the other two species and testing was discontinued at the midpoint of the study. The minnow test has two possible endpoints, survival and growth. Of the two endpoints, growth appears to be the most sensitive endpoint. A Toxicity Identification Evaluation (TIE) was performed on the eleventh sample event. The TIE treatments for the minnows indicated that ammonia was most likely responsible for the observed toxicity. The TIE treatment interpretations for mysids were complex. The mysid test has three possible endpoints, survival, growth and reproduction. Of these three endpoints, reproduction, followed by growth, are the most sensitive endpoints. Test results were unable to definitively identify a source or mechanism for the intermittent low level toxicity observed with the mysids. The overall results indicated that mysids appeared to be the most sensitive of the species tested.
- d. *Permit Requirements.* In accordance with USEPA and SWRCB Task Force guidance, and based on BPJ, this Permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective. This Permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as "triggers" to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE).
- e. *Permit Reopener.* The Board will consider amending this Permit to include numeric toxicity limits if the discharger fails to aggressively implement all reasonable control measures included in its approved TRE workplan, following detection of consistent significant non-artifactual toxicity.

Coliform Limits

85. 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 Regional 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 with water contact recreation (REC-1) beneficial uses, such as board surfing, in the vicinity of their outfalls (e.g., Central Marin Sanitation Agency and San Mateo), this has resulted in applying the Basin Plan's five day geometric mean fecal coliform water quality objectives of 200 MPN/100mL and 90th percentile limits of 400 MPN/100mL as effluent limits.

This Order includes fecal coliform limits with the stipulation that a completed receiving water study shows that such a substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving waters. The receiving water study may be done jointly with other dischargers. Since there is the potential for water contact recreation (e.g., board surfing) in the vicinity of the discharger's outfall in Carquinez Straits, the effluent limits will be set equal to the Basin Plan water contact recreation objectives. The chlorination reduction and receiving water studies will be performed according to the provisions.

Pollutant Prevention and Pollutant Minimization

86. The discharger has an approved Pretreatment Program and has established a Pollution Prevention Program under the requirements specified by the Regional Board.
- Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.
 - There may be some redundancy required between the Pollution Prevention Program and the Pollutant Minimization Program.
 - Where the two programs' requirements overlap, the discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
 - For copper, mercury, and selenium, 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 permit process for preparation, review, approval, and implementation of pollution minimization measures.
87. The Board staff intends to require an objective third party to establish baseline programs, and to review program proposals and reports for adequacy.

Special 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 the 2,3,7,8 TCDD congeners (as listed in Provision 14), whether or not an effluent limit is required for 2,3,7,8 - TCDD. The monitoring is intended to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries. The Regional Boards will use these monitoring data to establish strategies for a future multi-media approach to control these chemicals.

Effluent Characterization for Selected Constituents

89. Staff's review of effluent monitoring data from January 1995 through March 2000 found that there were insufficient effluent monitoring data to determine reasonable potential for some pollutants listed in the SIP. Therefore, this Order contains provisions to expand the analytical list for effluent monitoring (Listed in Table 2 of the SMP).

Ambient Background Concentration Determination

90. 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 contains provisions to expand the analytical list for ambient receiving water monitoring (Listed in Table 2 of the SMP) at representative ambient background stations. The discharger may meet this requirement by participating in new or expanded RMP special studies or by conducting equivalent studies jointly with other dischargers.

Optional Studies

91. *Optional Mass Offset.* 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, 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.
92. *Copper Translator Study.* The Basin Plan does not establish a water quality objective for copper. Therefore, the CTR water quality criterion for copper, 3.1 µg/L dissolved, 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 since the discharge is to the deep-water channel of the Carquinez Strait. Data are being collected and translators will be calculated as part of the North of Dumbarton Copper/Nickel site-specific objective technical work scheduled for completion by the end of 2001.

Other Discharge Characteristics and Permit Conditions***Increase in Permitted Discharge Flow***

93. The discharger completed upgrades to the secondary treatment system and other plant facilities in 2000. The discharger, at its discretion, may conduct capacity related stress testing to determine the extent to which, if any, average dry weather flow (ADWF) treatment capacity has been increased by these improvements. The Board will consider any such data submitted, and related anti-degradation analyses, to determine whether to reopen this permit and consider increasing permitted capacity. Any request for increased capacity will need to demonstrate that the permitted discharge is consistent with the anti-degradation provisions of 40 CFR 131.12 and State Water Resources Control Board's Resolution No. 68-16. The request will need to demonstrate, at a minimum, that (1) any increase in the volume and mass of pollutants discharged will not unreasonably affect present and anticipated receiving water beneficial uses, (2) that the discharge will continue to comply with the effluent limitations and water quality control policies prescribed in the Basin Plan, and (3) that the increase in the discharge is necessary to provide wastewater utility service required to accommodate housing and economic expansion in the area.

Compliance with BOD and TSS Effluent Limits during Wet Weather Conditions

94. In reviewing compliance with the 85% removal limits for BOD and TSS as given in this Order (Effluent Limitation B.3) and considering potential discretionary enforcement actions for exceeding

these limits, the Board will take special note of difficulties encountered in achieving compliance during wet weather periods when ordinary treatment capabilities are impeded by peak flows and storm water-diluted influent, provided that all wastewater facilities are operated in a manner to optimize treatment performance and compliance with these requirements.

Pretreatment Program

95. The discharger has implemented and is maintaining an USEPA 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.
96. *O & M Manual.* An Operations and Maintenance Manual is maintained by the discharger for purposes of providing 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.
97. *NPDES Permit.* 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.
98. *Notification.* 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.
99. *Public Hearing.* 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 Benicia (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 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 4.5 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

The following effluent limitations apply to effluent discharged to Carquinez Strait through the Carquinez Strait Discharge outfall (Sampling Station E-001):

1. The effluent shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Instantaneous Maximum</u>
a. Biochemical Oxygen Demand (BOD) mg/L		30	45	60	--
or Carbonaceous BOD	mg/L	25	40	50	
b. Total Suspended Solids (TSS)	mg/L	30	45	60	--
c. Oil & Grease	mg/L	10	--	20	--
d. Settleable Matter	ml/l-hr	0.1	--	0.2	--
e. Total Chlorine Residual (1)	mg/L	--	--	--	0.0

(1) 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 exceedances are false positives. If convincing evidence is provided, Board staff will conclude that these false positive chlorine residual exceedances are not violations of this permit limit.

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 both of the following conditions are satisfied: (i) 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 (ii) 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 (BOD₅, 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, by weight, 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 geometric mean value for all samples analyzed for fecal coliform within each calendar month shall not exceed a Most Probable Number (MPN) of fecal coliform bacteria of 200 MPN/100 ml; and
- b. No more than ten percent (10 %) of all samples collected within each calendar month shall exceed a fecal coliform bacteria level of 400 MPN/100 ml.

Toxic Pollutants

5. Whole Effluent Acute Toxicity

Representative samples of the effluent shall meet the following limits for acute toxicity. Compliance with these limits shall be achieved in accordance with Provision E.11 of this Order.

- a. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be:
 - (1) an 11-sample median value of not less than 90 percent survival ^{(b(1))}; and
 - (2) an 11-sample 90th percentile value of not less than 70 percent survival ^{(b(2))}.
- b. These acute toxicity limits are further defined as follows:
 - (1) 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.
 - (2) 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 shows less than 70 percent survival.
 - (3) 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. 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 E.17 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:

- (1) Routine monitoring;
- (2) Accelerated monitoring after exceeding a three sample median value of 10 chronic toxicity² (TUc) or a single sample maximum of 20 TUc or greater. Accelerated

² A TUc equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. 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.

monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order;

- (3) Return to routine monitoring if accelerated monitoring does not exceed either "trigger" in "2", above;
- (4) Initiate approved toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) work plan if accelerated monitoring confirms consistent toxicity above either "trigger" in "2", above;
- (5) Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below "trigger" level in "2", above or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

7. **Toxic Substances:** The effluent shall not exceed the following limits (1):

<u>Constituent</u>	<u>Daily Max</u>	<u>Monthly Average</u>	<u>Interim Daily Maximum</u>	<u>Interim Monthly Average</u>	<u>Units</u>	<u>Notes</u>
a. Cadmium	17.4	5.7			µg/L	(1)
b. Copper			32		µg/L	(1), (6)
c. Lead	45.7	17.3			µg/L	(1)
d. Mercury			1	0.087	µg/L	(1), (2)
e. Nickel	70	30.2			µg/L	(1)
f. Selenium			31		µg/L	(1), (6)
i. Cyanide				25	µg/L	(1), (3), (5)
j. Dieldrin	0.00028	0.00014			µg/L	(1), (4)
k. 4,4-DDE	0.00119	0.00059			µg/L	(1), (4)

Footnotes :

- (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 USEPA methods, or equivalent methods approved in writing by the Executive Officer.
 - (c) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).
- (2) 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. The interim limits for mercury shall remain in effect until March 31, 2010, or until the Board amends the limit based on the Waste Load Allocation in the TMDL for mercury. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.
- (3) Cyanide: Compliance may be demonstrated by measurement of weak acid dissociable cyanide.
- (4) Dieldrin and 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: 0.01 µg/L for dieldrin and 0.05 µg/L for 4,4-DDE. A daily maximum or monthly average value for a given constituent shall be considered non-compliant with the effluent limits only if it exceeds the effluent limitation and the reported ML for that constituent.

- (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) These interim limits shall remain in effect until August 31, 2006, or until the Board amends the limits based on site-specific objectives or the Waste Load Allocations in the TMDLs for copper and selenium. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.

8. **Interim Mass Emission Limits – Mercury and Selenium**

Until TMDL and Waste Load Allocation (WLA) efforts for mercury provide enough information to establish a different WQBEL, the discharger shall demonstrate that the total mercury mass loading from discharges to Carquinez Strait has not increased by complying with the following:

- a. **Interim mass emission limit: The mass emission limit for mercury is 0.11 kilograms per month (kg/month).** The total mercury mass load shall not exceed this limit. (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 MDL)
- b. **Interim mass emission limit: The mass emission limit for selenium is 1.67 kilograms per month (kg/month).** The total selenium mass load shall not exceed this limit. (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 MDL)
- c. Compliance with this limit shall be evaluated using monthly moving averages of total mass load, computed as described below:
$$\text{12-Month Monthly Moving Average of Total Mass Load} = \text{Average of the monthly total mass loads from the past 12 months}$$
$$\text{Monthly Total Mass Load (kg/month)} = \text{monthly plant effluent flows in mgd from Carquinez Strait Outfall (E-001)} \times \text{monthly effluent concentration measurements in } \mu\text{g/L corresponding to the above flows, for samples taken at E-001} \times 0.1151. \text{ (If more than one concentration measurement is obtained in a calendar month, the average of these measurements is used as the monthly concentration value for that month. If test results are less than the method detection limit used, the concentration value shall be assumed to be equal to the method detection limit.)}$$
- d. The discharger shall submit a cumulative total of mass loadings for the previous twelve months with each monthly Self-Monitoring Report. Compliance each month will be determined based on the 12-month moving averages over the previous twelve months of monitoring. The discharger may use monitoring data collected under accelerated schedules (i.e., special studies) to determine compliance.

- e. 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 one 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 at a permitted landfill. If the discharger desires to dispose of sludge by a different method, the discharger shall notify the Board and USEPA 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 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 503. All the requirements of 40 CFR Part 503 are enforceable by the USEPA whether or not they are stated in an NPDES permit or 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

1. Permit Compliance and Rescission of Previous Waste Discharge Requirements

The discharger shall comply with all sections of this Order beginning on September 1, 2001.

Requirements prescribed by this Order supersede the requirements prescribed by Order No. 94-094.

Order No. 94-094 is hereby rescinded on September 1, 2001.

Special Studies

2. Receiving Water Study and Schedule

The discharger shall conduct a receiving water beneficial use study to assess the appropriateness of testing for fecal instead of total coliform concentrations in compliance with Basin Plan coliform objectives. Depending on the results of the final study, the permit may be amended to specify either total or fecal coliform limits.

Task

Compliance Date

- (1) Receiving Water Study Plan. April 1, 2002
Develop a study plan, acceptable to the Executive Officer, to include, but not be limited to, a receiving water coliform study, and tasks and schedules necessary to assess the beneficial uses attributed to the outfall location.
- (2) Study Commencement. July 1, 2002
Following approval by the Executive Officer commence work in accordance with the study plan and time schedule submitted pursuant to the approved plan.
- (3) Final Report completion 6 months after Study
Submit a final report, acceptable to the Executive Officer, documenting the results of the beneficial use investigation described above.

3. Mercury Source Control and Mass Loading Reduction Study and Schedule

The discharger shall develop an aggressive source control and pollution prevention program to identify sources and evaluate options for control and reduction of mercury loadings. Objectives of the program shall include maintaining loadings at or below the mass emission level specified in this Order, and evaluating the feasibility of attaining effluent mercury concentrations at or below the Basin Plan objective of 0.025 µg/L. This program shall consider reductions in mercury effluent concentrations achieved through source control and economically feasible optimization of treatment plant processes. If necessary, alternative control strategies shall be investigated, through participation with the Board and other North Bay dischargers in identifying cross media watershed-wide sources of mercury impacting the receiving water, and potential control measures. This program shall be developed in accordance with the following time schedule.

Task: Mercury Source and Reduction Study Plan.

Compliance Date: 60 days after violation of mass emission limit.

Submit a proposed Study Plan for approval by the Executive Officer, to investigate mercury sources and reduction measures. The proposed investigation shall include:

- sampling and characterizing mercury in residential and commercial wastewater at representative locations in the collection system over a reasonable period of time;
- evaluating means for reducing significant sources;
- identifying means of optimizing mercury removal by treatment plant processes; and
- assessing the feasibility of controlling effluent mercury loadings through:
 - improving education and outreach;
 - reducing infiltration and inflow, and
 - increasing reclamation and reuse of treated effluent.

Submit an interim report for approval by the Executive Officer, documenting the initial source reduction options identified, and past and proposed future efforts to encourage minimization of mercury discharges to the collection system and to the Carquinez Strait.

Task: Final Report

Compliance Date: 12 months after Executive Officer approves Interim Report

Submit a final report for approval by the Executive Officer, documenting the source reduction work and efforts made to minimize mercury loading to the collection system. This report shall include a feasibility assessment for controlling effluent mercury loadings through, at a minimum:

- identifying and reducing sources,
- optimizing treatment plant performance,
- improving public education and outreach,
- reducing infiltration and inflow, and
- increasing reclamation and reuse of treated effluent.

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

The discharger shall submit the following proposals and reports acceptable to the Executive Officer within the specified time periods. Each proposal shall include detailed description of the scope of the study for cyanide, along with an implementation schedule that is based on the shortest practicable time required to perform each task.

- a) A proposal for ambient background water quality characterization for cyanide shall be submitted within 90 days of the effective date of this Order. It shall include, but is not limited to, the description of the location(s) for water quality sampling, analytical method(s) to be used, monitoring frequency, and reporting requirements.
- b) A proposal for site-specific objective study for cyanide shall be submitted within 120 days of the effective date of this Order. It shall include, but is not limited to, the information specified in section 5.2 (1), (2), and (3) of the SIP.
- c) Upon approval by the Executive Officer, the discharger shall implement the proposals. Annual reports shall be submitted by January 31 of each year documenting the progress of the ambient background characterization for cyanide, and site-specific objective studies for cyanide. 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.
- d) By May 18, 2003, the discharger shall complete the ambient background water quality characterization study for cyanide, and submit a report of the results.
- e) By June 30, 2003, the discharger shall submit a report of completion for the site-specific objective study for cyanide. This study shall be adequate to allow the Regional Board to initiate the development and adoption of the site-specific objective for cyanide. This permit may be reopened based on the site-specific objective developed.

5. Effluent Characterization for Selected Constituents

The discharger shall monitor and evaluate effluent discharged to Carquinez Strait for the constituents listed in Table 2 of the SMP of this Order (SMP Table 2 Constituents). Compliance with this requirement shall be achieved in accordance with the following:

- a. This effluent monitoring shall include a minimum of six effluent sampling and analysis events, with at least three sampling events conducted in the wet weather season and at least three sampling events conducted in the dry weather season, with the first sampling event no later than August 12, 2002.
- b. This report shall include analytical procedures used and achieved for each constituent, including the minimum level (ML) and method detection limit (MDL). For each constituent, the applicable analytical measurement levels should be adequate to evaluate observed effluent concentrations with respect to the water quality objective given in SMP Table 2, where technically and reasonably feasible.

- c. This report shall include an evaluation of observed effluent concentrations with respect to the water quality objectives given in SMP Table 2, and an assessment of the costs of monitoring the effluent for these constituents.
- d. The SMP of this Order may subsequently be revised to include routine monitoring for all or some of the SMP Table 2 Constituents.
- e. 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: January 31, 2006.
- f. Some constituents that are required by the CTR are not included in Table 2 of the SMP as there has been shown to be no reasonable potential based on previous plant effluent monitoring and the organics reasonable potential analysis outlined in the attachment. Please note that the discharger still bears the responsibility to determine the presence or absence of all 126 constituents in the CTR in the plant effluent in preparation for the next NPDES permit reissuance process.

6. Dioxin Study

In accordance with the SIP, major dischargers shall conduct effluent monitoring for the seventeen 2, 3, 7, 8-TCDD congeners listed below. The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach. Major dischargers are required to monitor the effluent once during the dry season and once during the wet season for a period of three consecutive years.

<u>Isomer Group</u>	<u>Toxicity Equivalence Factor</u>
2,3,7,8-tetra CDD	1.0
1, 2,3,7,8-penta CDD	1.0
1, 2, 3, 4, 7, 8-HexaCDD	0.1
1, 2, 3, 6, 7, 8-HexaCDD	0.1
1, 2, 3, 7, 8,9-HexaCDD	0.1
1, 2, 3, 4, 6, 7, 8-HeptaCDD	0.01
octa CDD	0.0001
2,3,7,8-Tetra CDF	0.1
1,2,3,7,8-Penta CDF	0.05
2,3,4,7,8-Penta CDF	0.5
1, 2, 3, 4, 7, 8-HexaCDF	0.1
1, 2, 3, 6, 7, 8-HexaCDF	0.1
1, 2, 3, 7, 8, 9-HexaCDF	0.1
2, 3, 4, 6, 7, 8-HexaCDF	0.1
1, 2, 3, 4, 6, 7, 8-HeptaCDF	0.01
1, 2, 3, 4, 7, 8,9-HeptaCDF	0.01
octa CDF	0.0001

<u>Task</u>	<u>Compliance Date</u>
(a) <u>Sampling Plan</u> Submit a proposed sampling plan, acceptable to the Executive Officer, to sample the effluent for seventeen congeners. This submittal shall include a proposed plan and time schedule for performing the work.	1 year after permit adoption
(b) <u>Implement Plan</u> Following approval by the Executive Officer, commence work in a timely fashion in accordance with the sampling plan.	30 days after approval of study

- (c) Annual Report Annually for 3 years, but no later than January 31, 2006
 Submit a report, to the Board, documenting the work performed in the sampling plan for the seventeen congeners.

7. Ambient Background Receiving Water Study

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. Data shall be collected at the two designated RMP deepwater discharger ambient background stations: Yerba Buena Island and Richardson Bay.

A sampling plan shall be submitted to the Executive Officer for approval, prior to sampling. The discharger may choose to coordinate with other POTWs in the area in order to effectively acquire and the same information required of them.

<u>Task</u>	<u>Compliance Date</u>
a. Sampling Plan Submit a proposed sampling plan, acceptable to the Executive Officer, to sample background, ambient receiving waters. This submittal shall include a proposed plan and time schedule for performing the work.	One year after permit adoption
b. Implement Plan Commence work in accordance with the sampling plan.	Schedule according to the Sampling Plan
c. Interim Report	May 18, 2003
d. Final Report	January 31, 2006

Submit a report, to the Board, documenting the work performed in the sampling plan. Information included, but not limited to, in report are as follows: constituent sampled for, sampling results, location of the samples, time the samples were taken, sample methodology used in the lab analysis, QA/QC data, and map showing the location of the sampling site(s) in relation to the location of the discharge.

Background ambient samples are required for constituents that have a reasonable potential or have an incomplete RPA for the constituent.

8. Pollutant Prevention Program and Pollutant Minimization Program (PMP)

- a. The discharger shall continue to develop and improve its existing Pollution Prevention Program (i.e., for mercury, copper and selenium) in order to reduce pollutant loadings to the treatment plant and therefore to the receiving waters.
- b. 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 report 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 develop 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 development of each task.
 - (v) *Continuation of outreach tasks for City employees.* The discharger shall continue outreach tasks for City and/or District 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 concerns into the treatment plant. The discharger may provide a forum for employees to provide input to the Program.
 - (vi) *Continuation of a public outreach program.* The discharger shall continue to develop a public outreach program to communicate pollution prevention 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 site. 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 b. (iv), b. (v), and b. (vi).
 - (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 b. (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.
- c. 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 expand its existing Pollution Prevention Program to include the reportable priority pollutant. A priority pollutant becomes a reportable priority pollutant when (1) there is evidence that it is present in the effluent above an effluent limitation and either (c)(i) or (c) (ii) is

triggered or (2) if 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.

- d. If triggered by the reasons in Provision 16.c. and notified by the Executive Officer, the discharger's Pollution Prevention Program shall, within 6 months, also 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 when 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 when 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 concentrations of the reportable priority pollutant(s) in the effluent 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 RWQCB 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.
- e. To the extent where the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
- f. 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

9. Acute Toxicity

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

- a. From permit adoption date to **July 31, 2002**:
 - (6) 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.
 - (7) Test organisms shall be fathead minnows or three-spined sticklebacks unless specified otherwise in writing by the Executive Officer.
 - (8) 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 **August 1, 2002** on:

- (1) 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 July 1, 2002, identifying the reasons why flow-through bioassay is not feasible using the approved EPA protocol (4th edition).
- (2) Test organisms shall be fathead minnows unless specified otherwise in writing by the Executive Officer.
- (3) 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).

10. Whole Effluent Chronic Toxicity Requirements

The discharger shall monitor and evaluate effluent discharged to the Carquinez Strait 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:
 - (1) a three sample median value of 10 TU_c ⁽³⁾; and
 - (2) a single sample maximum value of 20 TU_c ⁽³⁾.
 - (3) These parameters are defined as follows:
 - (a) Three-sample median: A test sample showing chronic toxicity greater than 10 TU_c represents an exceedance of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than 10 TU_c .
 - (b) TU_c (chronic toxicity unit): A TU_c equals 100/NOEL (e.g., If NOEL = 100, then toxicity = 1 TU_c). NOEL is the no observed effect level determined from IC, EC, or NOEC values ^(c).
 - (c) 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:
 - (1) 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.
 - (2) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.
 - (3) The TRE shall be conducted in accordance with an approved work plan.

- (4) The TRE needs to be specific to the discharge and discharger facility, and be in accordance with current technical guidance and reference materials including US EPA guidance materials. TRE shall be conducted as a tiered evaluation process, such as summarized below:
- (a) Tier 1 consists of basic data collection (routine and accelerated monitoring).
 - (b) Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.
 - (c) Tier 3 consists of a toxicity identification evaluation (TIE).
 - (d) Tier 4 consists of evaluation of options for additional effluent treatment processes.
 - (e) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.
 - (f) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- (5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.
- (6) 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.
- (7) 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.
- (8) 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.
- (9) 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.
- h. 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.
 - i. 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.

Collection System Programs

11. 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 and minimize collection system overflows.
- 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.

Ongoing Programs

12. Regional Monitoring Program

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.

13. Pretreatment Program.

Pretreatment Program: The discharger shall implement and enforce its approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403), pretreatment standards promulgated under Section 307(b), 307(c), and 307(d) of the Clean Water Act, and the requirements in Attachment F, "Pretreatment Requirements." The discharger's responsibilities include, but are not limited to:

- a. Enforcement of National Pretreatment Standards in accordance with 40 CFR 403.5 and 403.6;
- b. Implementation of its pretreatment program in accordance with legal authorities, policies, procedures and financial provisions described in the General Pretreatment regulations (40 CFR 403) and the discharger's approved pretreatment program;
- c. Submission of reports to U.S. EPA, the State Board and the Board, as described in Attachment F, "Pretreatment Requirements;"

The discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the discharger fails to perform the pretreatment functions, the Regional Water Quality Control Board (RWQCB), the State Water Resources Control Board (SWRCB), or the United States Environmental Protection Agency (U.S. EPA) may take enforcement actions against the discharger as authorized by the Clean Water Act.

Optional Studies

14. Optional Mass Offset

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

15. Copper Translator Study and Schedule

In order to develop information that may be used to establish a water quality based effluent limit based on dissolved copper criteria, 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 a dissolved to total copper translator. 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:

Task

- a. Copper 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 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 August 31, 2003, 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.

Facilities Status Reports and Permit Administration

16. 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.

17. 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.

18. 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.

19. Annual Status Reports

The reports identified above in Provisions E.16.c, E.17.c., and E.18.c. shall be submitted to the Board annually, by June 30 of each year. Modification of report submittal dates may be authorized, in writing, by the Executive Officer.

20. 303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review

The discharger shall participate in the development of a TMDL or site-specific objective for copper, nickel, mercury, selenium, 4,4-DDE, and Dieldrin. By January 31 of each year, the discharger shall submit an update to the Board to document efforts made on participation in development of TMDL or site-specific objective. Regional Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by the TMDL development.

21. New Water Quality Objectives

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.

22. Self-Monitoring Program

The discharger shall comply with the Self-Monitoring Program (SMP) for this Order as adopted by the Board. The SMP may be amended by the Executive Officer pursuant to U.S. EPA regulations 40 CFR 122.62, 122.63, and 124.5.

23. Standard Provisions and Reporting Requirements

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.

24. Change in Control or Ownership.

- a. 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.
- b. 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.

25. Permit Reopener

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.

26. NPDES Permit

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 on September 1, 2001, provided the USEPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

27. Order Expiration and Reapplication

- a. This Order expires on July 31, 2006.
- b. 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 August 15, 2001.

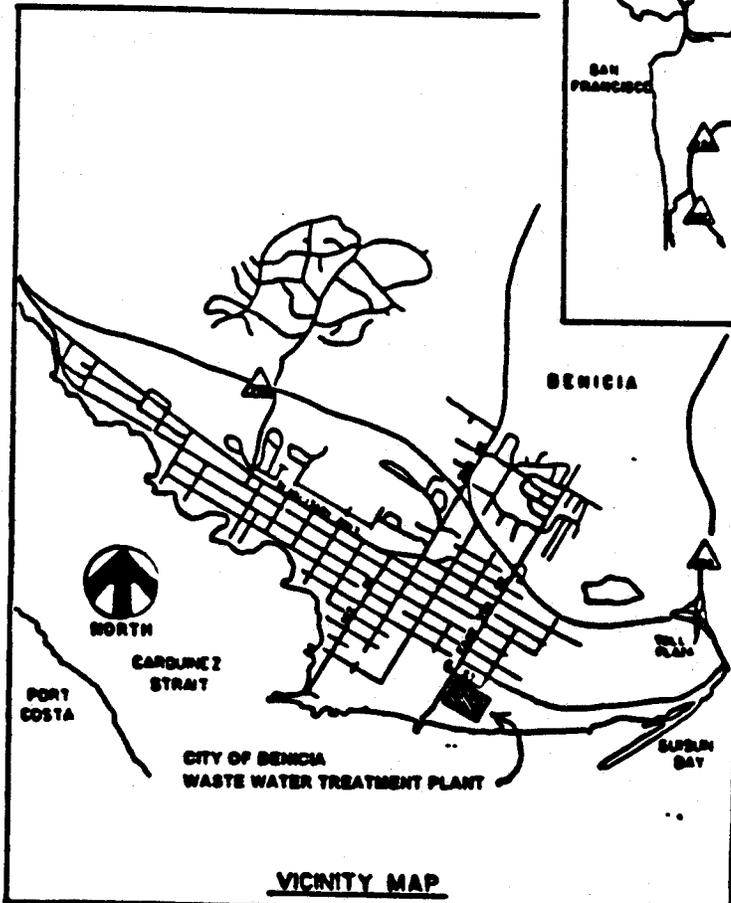
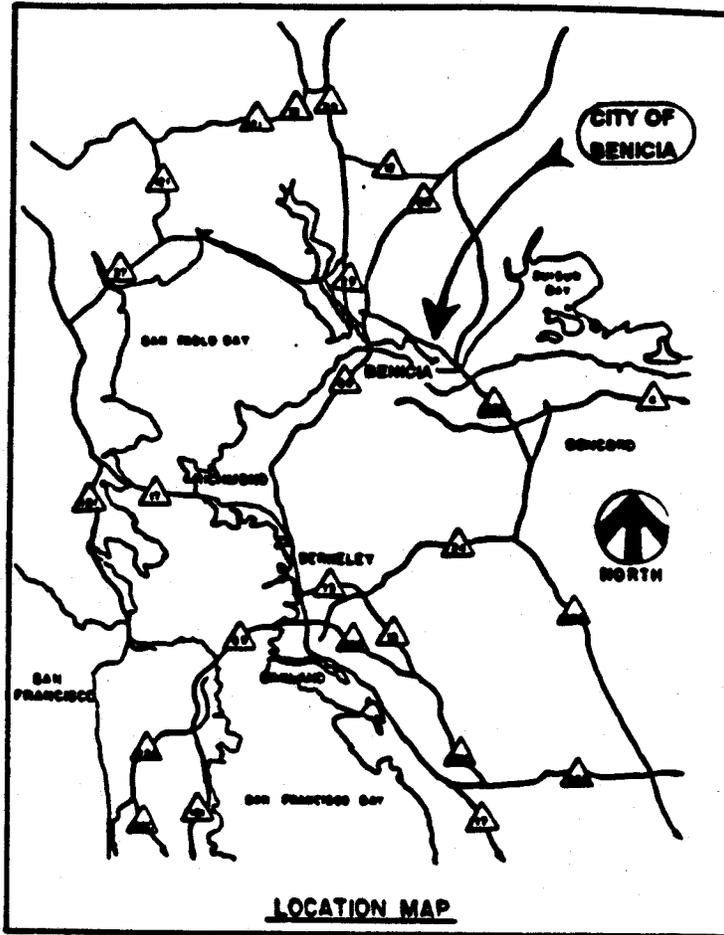


LORETTA K. BARSAMIAN

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
- F. Pretreatment Program Requirements



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Attachment

Location Map
City of Benicia WWTP, Solano County

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

SELF-MONITORING PROGRAM

FOR

**CITY OF BENICIA
WASTEWATER TREATMENT PLANT**

BENICIA, SOLANO COUNTY

NPDES PERMIT NO. CA0038091

ORDER NO. 01 - 096

Consists of:

**Part A (not attached, except as modified in Section III of Part B)
Adopted August 1993**

and

**Part B (Attached)
Adopted: August 15, 2001**

Note: Part A (dated August 1993) and Standard Provisions and Reporting Requirements for NPDES Surface Water Discharger Permits (dated August 1993) referenced in this Self Monitoring Program are not attached but are available for review or download on the Board's website at www.swrcb.ca.gov/rwqcb2.

SELF-MONITORING PROGRAM – Part B

I. Description of Sampling and Observation Stations

A. INFLUENT

Station Description

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

Station Description

E-001 Carquinez Strait Discharge
At a point in the treatment facility following all treatment processes at which all effluent to be discharged through the Carquinez Strait Discharge outfall to Carquinez Strait is present, prior to the point of discharge. (May be the same as E-001-D).

E-001-D Disinfected Effluent
At a point in the treatment facility at which all effluent to be discharged to the Carquinez Strait Discharge outfall is present, and at which point adequate contact with the disinfectant has been achieved.

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.

C. OVERFLOWS and BYPASSES

Station Description

OV-'n' Bypass or overflows from manholes, pump stations, portions of the collection system under the discharger's control.

NOTE:

A map and description of each known or observed overflow or bypass location shall accompany each monthly report. A summary of these occurrences and their location shall be included with the Annual Report for each calendar year.

D. TREATMENT PLANT PERIMETER (Land Observations)

Station Description

P-1 to
P='n' Points located along the perimeter of the wastewater treatment facility,
at equidistant intervals of about 500 feet.

II. Schedule of Sampling, Analysis and Observations

The schedule of sampling, analysis and observation shall be that given in Table 1 below.

TABLE 1 - SCHEDULE of SAMPLING, ANALYSES and OBSERVATIONS [1]

Sampling Station:			A-001	E-001		E-001-D	
			Influent	Effluent to Carquinez Strait		Effluent to Carquinez Strait	
Type of Sample:			C-24	G	C-24	G	C-24
Parameter	Units	Notes	[11]	[11]	[11]		
Flow Rate	MGD	[2]	Cont/D		Cont/D		
pH	pH units			3/W			
Temperature	°C			3/W			
Dissolved Oxygen	mg/L			3/W			
BOD ₅ ,20°C or CBOD ₅ ,20°C	mg/L		3/W		3/W		
TSS	mg/L		3/W		5/W		
Oil & Grease	mg/L	[3]			2/M		
Settleable Matter	ml/l-hr			M			
Fecal Coliform	MPN/100 ml					2/W	
Chlorine Residual	mg/L	[4]			Cont/2H		Cont/2H
Sulfides		[5]					
Unionized Ammonia							
Total Dissolved Solids							
Salinity							
Hardness as CaCO ₃		[6]					
Acute Toxicity	% Survival	[7]			M		
Chronic Toxicity		[8]			2/Y		
Arsenic	µg/L				M		
Cadmium	µg/L				M		
Chromium	µg/L			M			
Copper	µg/L				M		
Lead	µg/L				M		
Mercury	µg/L & kg/mo	[9]		M			
Nickel	µg/L				M		
Selenium	µg/L				M		
Silver	µg/L				M		
Zinc	µg/L				M		
Cyanide	µg/L	[10]		M			
4,4'-DDE	pg/l	[17]		2/Y			
Dieldrin	pg/l	[17]		2/Y			
2,3,7,8-TCDD and congeners	pg/l	[12]		2/Y			
Tributyltin	µg/L	[13]		2/Y			
Diazinon and Chlorpyrifos	µg/L or ppb	[14]			2/Y		
Table 2 Selected Constituents (except those specified above)	µg/L or ppb	[15]		2/Y			
Pretreatment Requirements (Table 3)	µg/L or ppb	[16]					

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:

BOD₅ 20°C = Biochemical Oxygen Demand, 5-day, at 20°C
CBOD₅ 20°C = Carbonaceous BOD, 5-day, at 20 °C
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
pg/L = picograms per liter

FOOTNOTES FOR TABLE 1

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

[2] Flow Monitoring.
Flow monitoring indicated as continuous monitoring in Table 1 shall be conducted by continuous measurement of flows, and reporting of the following measurements:
Influent (A-001), and Effluent (E-001):
a. Daily: (1) Average Daily Flow (mgd)
(2) Maximum Daily Flow (mgd)
(3) Minimum Daily Flow (mgd).
b. 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).

[6] Hardness shall be determined using the latest version of USEPA 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 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.10. and Attachment C of this Order.

1. *Chronic Toxicity Monitoring Requirements*

- a. 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.
- b. 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.
- c. Frequency:
 - (1) Routine Monitoring: Twice per year
 - (2) Accelerated Monitoring: Twice per quarter, or as otherwise specified by the Executive Officer.
- d. Conditions for Accelerated Monitoring: The discharger shall conduct accelerated monitoring when either of the following conditions are exceeded:
 - (1) three sample median value of 10 TU_c, or
 - (2) single sample maximum value of 20 TU_c.
- e. Methodology: Sample collection, handling and preservation shall be in accordance with USEPA 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.

- f. Dilution Series: The discharger shall conduct tests at 2.5%, 5%, 10%, 20%, and 40%. The "%" represents percent effluent as discharged.

2. *Chronic Toxicity Reporting Requirements*

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

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

b. 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 under Section F.2.a, item numbers 1, 3, 5, 6(IC₂₅ or EC₂₅), 7, and 8.

- [9] Use ultra-clean sampling (USEPA 1669) to the maximum extent practicable, and analytical methods (USEPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as EPA 245), if that alternate method has a detection limit of 2 ng/l or less.
- [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, USEPA Method OI 1677, or equivalent alternatives in latest edition. Alternative methods of analysis must be approved by the Executive Officer.
- [11] Composite sampling: 24-hour composites may be made up of discrete grabs collected over the course of a day and volumetrically or mathematically flow-weighted. Samples for inorganic pollutants may be combined prior to analysis. Samples for organic pollutants should be analyzed separately. If only one grab sample will be collected, it should be collected during periods of maximum peak flows. Samples shall be taken on random days.
- [12] Chlorinated Dibenzodioxins and Chlorinated Dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the method shall be capable of detecting concentrations on the order of picogram per liter or lower. Major dischargers are required to monitor the effluent once during the dry season and once during the wet season for a period of three consecutive years. Alternative methods of analysis must be approved by the Executive Officer.

- [13] To determine Tributyltin, the discharger shall use GC-FPD, GC/MS or an USEPA approved method; the method shall be capable of speciating organotins and detecting concentrations at low limits on the order of 5 nanograms per liter. Alternative methods of analysis must be approved by the Executive Officer.
- [14] Diazinon and Chlorpyrifos shall be analyzed using USEPA Method 614.
- [15] Table 2 Selected Constituents: see Table 2 below. These pollutants 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. The discharger shall report the analytical result for each of the seven PCB congeners, as specified in the CTR.
- [16] Pretreatment Program Requirements: see Table 3 below.
- [17] 1/5Y applies if the discharger chooses to participate in a coordinated effort as described in Finding No. 54.

Table 2. Minimum Levels (µg/l or ppb)

CTR #	Constituent [a]	Types of Analytical Methods [b]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
1.	Antimony					10	5	50	0.5	5	0.5		1000
2.	Arsenic				20		2	10	2	2	1		1000
3.	Beryllium					20	0.5	2	0.5	1			1000
4.	Cadmium					10	0.5	10	0.25	0.5			1000
5a.	Chromium (III) [c]												
5b.	Chromium (VI)				10	5							1000
6.	Copper [d]					25	5	10	0.5	2			1000
7.	Lead					20	5	5	0.5	2			10,000
8.	Mercury [e]								0.5			0.2	
9.	Nickel					50	5	20	1	5			1000
10.	Selenium						5	10	2	5	1		1000
11.	Silver					10	1	10	0.25	2			1000
12.	Thallium					10	2	10	1	5			1000
13.	Zinc					20		20	1	10			
14.	Cyanide				5								
15.	Asbestos [c, f]												
16.	2, 3, 7, 8-TCDD [c, j]												
17.	Acrolein	2.0	5										
18.	Acrylonitrile	2.0	2										
19.	Benzene	0.5	2										
20.	Bromoform	0.5	2										
21.	Carbon Tetrachloride	0.5	2										
22.	Chlorobenzene	0.5	2										
23.	Chlorodibromomethane	0.5	2										
24.	Chloroethane	0.5	2										
25.	2-Chloroethylvinyl Ether	1	1										
26.	Chloroform	0.5	2										

City of Benicia – NPDES Self-Monitoring Program, Part B

CTR #	Constituent [a]	Types of Analytical Methods [b]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
27.	Dichlorobromomethane	0.5	2										
28.	1,1-Dichloroethane	0.5	1										
29.	1,2-Dichloroethane	0.5	2										
30.	1, 1-Dichloroethylene or 1,1-Dichloroethene	0.5	2										
31.	1, 2-Dichloropropane	0.5	1										
32.	1, 3 –Dichloropropylene or 1,3-Dichloropropene	0.5	2										
33.	Ethylbenzene	0.5	2										
34.	Methyl Bromide	1.0	2										
35.	Methyl Chloride or Chloromethane	0.5	2										
36.	Methylene Chloride or Dichloromethane	0.5	2										
37.	1,1, 2,2-Tetrachloroethane	0.5	1										
38.	Tetrachloroethylene	0.5	2										
39.	Toluene	0.5	2										
40.	1,2-Trans-Dichloroethylene	0.5	1										
41.	1,1,1-Trichloroethane	0.5	2										
42.	1,1,2-Trichloroethane	0.5	2										
43.	Trichloroethylene or Trichloroethene	0.5	2										
44.	Vinyl Chloride	0.5	2										
45.	2-Chlorophenol	2	5										
46.	2, 4 Dichlorophenol	1	5										
47.	2,4-Dimethylphenol	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	10	5										
49.	2,4-Dinitrophenol	5	5										
50.	2-Nitrophenol		10										
51.	4-Nitrophenol	5	10										
52.	4-chloro-3-methylphenol	5	1										
53.	Pentachlorophenol	1	5										
54.	Phenol [g]	1	1		50								
55.	2, 4, 6 Trichlorophenol	10	10										
56.	Acenaphthene	1	1	0.5									
57.	Acenaphthylene		10	0.2									
58.	Anthracene		10	2									
59.	Benzidine		5										
60.	Benzo(a)Anthracene or 1,2-Benzanthracene	10	5										
61.	Benzo(a)Pyrene		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene		10	10									
63.	Benzo(ghi)Perylene		5	0.1									
64.	Benzo(k)Fluoranthene		10	2									
65.	Bis(2-Chloroethoxy) Methane		5										
66.	Bis(2-Chloroethyl) Ether	10	1										
67.	Bis(2-Chloroisopropyl)	10	2										

City of Benicia – NPDES Self-Monitoring Program, Part B

CTR #	Constituent [a]	Types of Analytical Methods [b]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
	Ether												
68.	Bis(2-Ethylhexyl) Phthalate	10	5										
69.	4-Bromophenyl Phenyl Ether	10	5										
70.	Butylbenzyl Phthalate	10	10										
71.	2-Chloronaphthalene		10										
72.	4-Chlorophenyl Phenyl Ether		5										
73.	Chrysene		10	5									
74.	Dibenzo(a,h) Anthracene		10	0.1									
75.	1, 2 Dichlorobenzene (volatile)	0.5	2										
	1, 2 Dichlorobenzene (semi-volatile)	2	2										
76.	1, 3 Dichlorobenzene (volatile)	0.5	2										
	1, 3 Dichlorobenzene (semi-volatile)	2	1										
77.	1, 4 Dichlorobenzene (volatile)	0.5	2										
	1, 4 Dichlorobenzene (semi-volatile)	2	1										
78.	3,3'-Dichlorobenzidine		5										
79.	Diethyl Phthalate	10	2										
80.	Dimethyl Phthalate	10	2										
81.	Di-n-Butyl Phthalate		10										
82.	2,4-Dinitrotoluene	10	5										
83.	2,6-Dinitrotoluene		5										
84.	Di-n-Octyl Phthalate		10										
85.	1,2-Diphenylhydrazine		1										
86.	Fluoranthene	10	1	0.05									
87.	Fluorene		10	0.1									
88.	Hexachlorobenzene	5	1										
89.	Hexachlorobutadiene	5	1										
90.	Hexachlorocyclopentadiene	5	5										
91.	Hexachloroethane	5	1										
92.	Indeno(1,2,3-cd)Pyrene		10	0.05									
93.	Isophorone	10	1										
94.	Naphthalene	10	1	0.2									
95.	Nitrobenzene	10	1										
96.	N-Nitrosodimethylamine	10	5										
97.	N-Nitrosodi-n-Propylamine	10	5										
98.	N-Nitrosodiphenylamine	10	1										
99.	Phenanthrene		5	0.05									
100.	Pyrene		10	0.05									
101.	1,2,4-Trichlorobenzene	1	5										
102.	Aldrin	0.005											
103.	α-BHC	0.01											
104.	β-BHC	0.005											

CTR #	Constituent [a]	Types of Analytical Methods [b]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
105.	γ-BHC (Lindane)	0.02											
106.	δ-BHC	0.005											
107.	Chlordane	0.1											
108.	4,4'-DDT	0.01											
109.	4,4'-DDE	0.05											
110.	4,4'-DDD	0.05											
111.	Dieldrin	0.01											
112.	Endosulfan (alpha)	0.02											
113.	Endosulfan (beta)	0.01											
114.	Endosulfan Sulfate	0.05											
115.	Endrin	0.01											
116.	Endrin Aldehyde	0.01											
117.	Heptachlor	0.01											
118.	Heptachlor Epoxide	0.01											
119-125	PCBs [h]	0.5											
126.	Toxaphene	0.5											
	Tributyltin [c]												
	Chlorpyrifos [c, i]												
	Diazinon [c, i]												

Notes 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.) The SIP does not contain an ML for this constituent.
- d.) 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.
- e.) Use ultra-clean sampling (USEPA 1669) to the maximum extent practicable, and analytical methods (USEPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as EPA 245), if that alternate method has a detection limit of 2 ng/l or less.
- f.) The discharger does not need to sample for this constituent because sampling is not required for receiving waters with a municipal beneficial use designation.
- g.) Phenol by colorimetric technique has a factor of 1.
- h.) PCBs refers to PCB 1016, 1221, 1232, 1242, 1248, 1254 and 1260.
- i.) The detection limit goals for these constituents are 0.03 µg/L.
- j.) Use Method 1613 for TCDD analysis and test for the seventeen congeners.

- k.) Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.

Table 3. Pretreatment Monitoring Requirements

Constituents / EPA Method	Influent	Effluent	Sludge
VOC / 624	Q	Q	
BNA / 625	Q	Q	
Metals [a]	Q	Q	
O-Pest / 614	2/Y	2/Y	
C-Pest / 632	2/Y	2/Y	
Sludge [b]			2/Y

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

C-Pest = carbamate and urea pesticides

Notes to Table 3 of Self-Monitoring Program:

[a] 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.

[b] EPA approved methods.

III. Modification of Self-Monitoring Program, Part A (Part A):

1. Section C. of Part A shall be modified as follows:

C. 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.

1. Influent Monitoring.

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

...

6. Treatment Process Bypass Monitoring.

During any time when bypassing occurs from any treatment process units (primary, secondary, chlorination, dechlorination, etc.), such that all wastewater does not receive full secondary treatment, other than wet weather discharges or bypasses addressed elsewhere in this permit and self-monitoring program, the monitoring program for effluent discharged from the treatment plant shall include the following sampling and analyses:

1. When bypassing either the primary or secondary treatment processes:
Collect composite samples for BOD and TSS analyses, based on composite of samples collected hourly for the duration of the bypass event (any one composite sample not to exceed 24-hour composite).
2. When bypassing the disinfection process:
Collect grab samples at least once every two hours for Coliform analyses.
3. When bypassing the dechlorination process:
Collect grab samples at least once every half hour for chlorine residual measurement.
4. When bypassing flow monitoring equipment:
Report estimated Average Flow Rate (mgd), estimated Total Flow Volume (million gallons), and total duration (hours, minutes).

2. Section F. of Part A shall be modified as follows:

F. REPORTING REQUIREMENTS

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

2. Monthly Self-Monitoring Report (SMR).

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the following:

- a. 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.
- b. The report shall be submitted to the Board no later than 30 days after the end of the reporting month.

- c. *Letter of Transmittal*

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

- (1) Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
- (2) Details of the violations: parameters, magnitude, test results, frequency, and dates;
- (3) The cause of the violations;
- (4) 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.
- (5) Signature: 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."

- (6) *Reporting Data in Electronic Format:* The Discharger has the option to submit all monitoring results in electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit the SMRs electronically, the Discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS).
- d. *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.
- e. *Results of Analyses and Observations.*
(1) Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result.
(2) 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.
(3) Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.
- f. *Effluent Data Summary - USEPA 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 USEPA NPDES Discharge Monitoring Report(s) (DMRs; US EPA Form 3320-1 or successor). Copies of these DMRs shall be provided to USEPA as required by USEPA.
- g. *Data Reporting for Results Not Yet Available.* The discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. The 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.
3. Construction Projects (same as Part A).
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 Program Annual Report (Annual Report).

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

- a. Annual Compliance Summary Table of treatment plant performance during the calendar year.
- b. 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.
- c. A plan view drawing or map showing the dischargers' facility, flow routing and sampling and observation station locations.
- d. List of Approved Analysis
 - 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.

5. Spill Reports.

- a. A report shall be made of any spill of oil or other hazardous material.
- b. 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 and fax as follows:
 - (1) During weekdays, during office hours of 8 am to 5 pm, to the Regional Board:
Current phone number: Phone: Tobi Tyler: (510) 622-2431, FAX: (510) 622 - 2460.
 - (2) During non-office hours, to the State Office of Emergency Services:
Current phone number: (800) 852 - 7550.
- c. 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:
 - (1) Date and time of spill, and duration if known.
 - (2) Location of spill (street address or description of location).
 - (3) Nature of material spilled.
 - (4) Quantity of material involved.
 - (5) Receiving water body affected.
 - (6) Cause of spill.
 - (7) Observed impacts to receiving waters (e.g., discoloration, oil sheen, fishkill).
 - (8) Corrective actions that were taken to contain, minimize or cleanup the spill.

- (9) Future corrective actions planned to be taken in order to prevent recurrence, and time schedule of implementation.
- (10) Persons or agencies contacted.

6. 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 Board in accordance with the following:

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

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

- i. 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:
 - Notify the current Board staff inspector, by phone call or message, or by facsimile:
[current staff inspector: Ray Balcom, phone number (510) 622-2312]
[current Regional Board Fax number: (510) 622-2460]; and
 - Notify the State Office of Emergency Services at phone number: (800) 852-7550.
- ii. Submit a written report of the incident in follow-up to telephone notification.
- iii. 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.
- iv. The written report for collection system overflow shall include the following:
 - (1) Estimated date and time of overflow start and end.
 - (2) Location of overflow (street address or description of location).
 - (3) Estimated volume of overflow.
 - (4) Final disposition of overflowed wastewater (to land, storm drain, surface water body).
Include the name of any receiving water body affected.
 - (5) Cause of overflow.
 - (6) Observed impacts to receiving waters if any (e.g., discoloration, fish kill).
 - (7) Corrective actions that were taken to contain, minimize or cleanup the overflow.
 - (8) Future corrective actions planned to be taken to prevent recurrence and time schedule of implementation.
 - (9) Persons or agencies contacted.

b. *Overflows less than 1,000 gallons.*

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

- i. The discharger shall prepare and retain records of such overflows, with records available for review by Board staff upon request.
- ii. The records for these overflows shall include the information as listed in 1.d. above.
- iii. A summary of these overflows shall be submitted to the Board annually, as part of the discharger's Self-Monitoring Program Annual Report.

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

- a. 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:
 - (1) experiences or intends to experience a bypass of any treatment process, or
 - (2) 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.
- b. Such incidents shall be reported to the Regional Board in accordance with the following:
 - (1) 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.
 - (2) Submit a written report of the incident in follow-up to telephone notification.
 - (3) 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.
 - (4) 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.
 - (5) 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.
- c. 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.

E. 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 Board or by the Regional Administrator of the US EPA, Region IX.

Records to be maintained shall include the following:

1. Parameter Sampling and Analyses, and Observations.

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

- a. Parameter
- b. Identity of sampling or observation station, consistent with the station descriptions given in this SMP.
- c. Date and time of sampling or observation.
- d. Method of sampling (grab, composite, other method)
- e. Date and time analysis started and completed, and name of personnel or contract laboratory performing the analysis.
- f. Reference or description of procedure(s) used for sample preservation and handling, and analytical method(s) used.
- g. Calculations of results.
- h. Analytical method detection limits and related quantitation parameters.
- i. Results of analyses or observations.

2. Flow Monitoring Data.

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

- a. Total flow or volume, for each day.
- b. Maximum, minimum and average daily flows for each calendar month.

3. Wastewater Treatment Process Solids.

a. For each treatment process unit which involves solids removal from the wastewater stream and off-site disposal, records shall include the following:

- (1) Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings), for each calendar month; and
- (2) Final disposition of such solids (e.g., landfill).

b. For final dewatered sludge from the treatment plant as whole, records shall include the following:

- (1) Total volume and/or mass quantification of dewatered sludge, for each calendar month;
- (2) Solids content of the dewatered sludge; and
- (3) Final disposition of dewatered sludge (point of disposal location and disposal method).

4. Disinfection Process.

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

a. For bacteriological analyses:

- (1) Date and time of each sample collected
- (2) Wastewater flow rate at the time of sample collection
- (3) Results of sample analyses (coliform count)
- (4) 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).

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

- (1) Chlorine residual in contact basin (mg/L)
- (2) Contact time (minutes)
- (3) Chlorine dosage (kg/day)
- (4) Dechlorination chemical dosage (kg/day)

5. 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:

- a. Identification of treatment process bypassed;
- b. Date and time of bypass start and end;
- c. Total duration time;
- d. Estimated total volume;
- e. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.

6. Collection System Overflows

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

- a. Location of overflow;
- b. Date and time of overflow start and end;
- c. Total duration time;
- d. Estimated total volume;
- e. Description of, or reference to other report(s) describing, overflow event, cause, corrective actions taken, and any additional monitoring conducted.

IV. 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.

V. 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.

VI. 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. 01-096.
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 September 1, 2001.



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-Kärber. 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 source control 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	REFER-ENCE
alga	(<u>Skeletonema costatum</u>) (<u>Thalassiosira pseudonana</u>)	growth rate	4 days	1
red alga	(<u>Champia parvula</u>)	number of cystocarps	7-9 days	3
Giant kelp	(<u>Macrocystis pyrifera</u>)	percent germination; germ tube length	48 hours	2
abalone	(<u>Halotis rufescens</u>)	abnormal shell development	48 hours	2
oyster mussel	(<u>Crassostrea gigas</u>) (<u>Mytilus edulis</u>)	{abnormal shell development; {percent survival	48 hours	2
Echinoderms (urchins - (sand dollar -	<u>Strongylocentrotus purpuratus</u> , <u>S. franciscanus</u>); <u>Dendraster excentricus</u>)	percent fertilization	1 hour	2
shrimp	(<u>Mysidopsis bahia</u>)	percent survival; growth	7 days	3
shrimp	(<u>holmesimysis costata</u>)	percent survival; growth	7 days	2
topsmelt	(<u>Atherinops affinis</u>)	percent survival; growth	7 days	2
silversides	(<u>Menidia beryllina</u>)	larval growth rate; percent survival	7 days	3

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. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994

TABLE C 2
CRITICAL LIFE STAGE TOXICITY TESTS FOR FRESH WATERS

SPECIES	(Scientific name)	EFFECT	TEST DURATION	REFERENCE
fathead minnow	(<u>Pimephales promelas</u>)	survival; growth rate	7 days	4
water flea	(<u>Ceriodaphnia dubia</u>)	survival; number of young	7 days	4
alga	(<u>Selenastrum capricornutum</u>)	cell division rate	4 days	4

Toxicity Test Reference:

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Third edition. EPA/600/4-91/002. July 1994

TABLE C 3

TOXICITY TEST REQUIREMENTS FOR STAGE ONE SCREENING PHASE

REQUIREMENTS	RECEIVING WATER CHARACTERISTICS		
	Discharges to Coast	Discharges to San Francisco Bay ‡	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic Diversity:	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater (†):	0	1 or 2	3
Marine/Estuarine:	4	3 or 4	0
Total number of tests:	4	5	3

† The fresh water species may be substituted with marine species if:

- 1) The salinity of the effluent is above 1 parts per thousand (ppt) greater than 95% of the time, or
- 2) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

‡ Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95% of the time during a normal water year.

Fresh refers to receiving water with salinities less than 1 ppt at least 95% of the time during a normal water year.

ATTACHMENT F

Attachment to the NPDES permit: Individual permit pretreatment language

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 Regional 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 to Pretreatment Requirements 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 to Pretreatment Requirements 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 to Pretreatment Requirements 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 to Pretreatment Requirements**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 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 Regional 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 Regional 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 the reason why the SIU is classified as "significant." 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 Regional 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



Winston H. Hickox
Secretary for
Environmental
Protection

California Regional Water Quality Control Board

San Francisco Bay Region

Internet Address: <http://www.swrcb.ca.gov>
1515 Clay Street, Suite 1400, Oakland, California 94612
Phone (510) 622-2300 ☎ FAX (510) 622-2460



Gray Davis
Governor

Date: **NOV 21 2001**
File No. 2129.2001 (TT)

Chris Tomasik
City of Benicia
614 East 5th Street
Benicia, CA 94510

Subject: Typographical Error Corrections to City of Benicia's NPDES permit, Order No. 01-096

Dear Ms. Tomasik:

Regional Board staff has reviewed the City of Benicia's request for minor changes to be made to their NPDES permit, Order No. 01-096, reissued on August 15, 2001. The following typographic errors in the permit and clarifications to the Self-Monitoring Program have been made:

Page 14, paragraph (5), the word "of" was inserted in front of "dioxins" in the second line.

Page 15, paragraph 56, fifth line, changed "that" to "than."

Page 18, paragraph 70, fifth line, an "o" was added to "Sacrament."

Page 22, second paragraph of item 85, inserted the word "study" after "water" in the third line.

Page 28, footnote (4), deleted the "d" in "valued" in the second line.

Page 28, footnote (6), changed "This" to "These."

Page 1 of SMP, "Tentative" deleted above the words "Self-Monitoring Program."

Page 4 of SMP, Legend, Parameter and Abbreviations, added "pg/L = picograms/liter."

Page 13 of SMP, paragraph g, inserted the word "a" after "in" in the second line.

Page 15 of SMP, paragraph 6b(i), changed "discharge" to "discharger" in the first line.

Page 16 of SMP, paragraph 7a(2) (ii), deleted the "2" before "ii."

Page 16 of SMP, paragraph E, deleted "(will be moved up to be before "F" in cleaned up version)" and move section to before "F."

Page 17 of SMP, paragraph 3, in (a) changed "solid" to "solids" and inserted the words "and off-site disposal" after "stream." In (1) deleted the words "undigested sludge" and in (2) deleted the words "other subsequent treatment unit."

The following changes that you requested could not be granted because they were beyond mere typographical errors in the permit or minor clarifications in the Self-Monitoring Program. These changes would, therefore, require a permit amendment.

"Page 38, paragraph 11(c), last line was to be revised to read: "treatment units necessary to meet secondary treatment standards."

Page 5 of SMP, footnote 8(c), Accelerated Monitoring was to change back to "Quarterly" from "Twice per quarter." These are \$1300 per test.

Page 13 of SMP, paragraph e(1), the words "and time" are to be deleted in the second line."

If you have questions concerning any of these matters, please call Tong Yin, your new case engineer, at (510) 622-1008 or by email her at ty@rb2.swrcb.ca.gov.

Sincerely,



Shin-Roei Lee
Division Chief
NPDES Division