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California Regional Water Quality Control Board

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San Francisco Bay Region

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ORDER NO. R2-2008-XXXX
NPDES NO. CA0038130

The following Discharger is subject to waste discharge requirements set forth in this Order.

Table 1. Discharger Information

Discharger	Cities of South San Francisco and San Bruno
Name of Facility	South San Francisco and San Bruno Water Quality Control Plant and Collection System
Facility Address	195 Belle Air Road
	South San Francisco, CA 94080
	San Mateo County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the South San Francisco and San Bruno Water Quality Control Plant from the discharge point identified below is subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
E-002	Secondary Treated Municipal Wastewater	37º 39' 55" N	122º 21' 41" W	Lower San Francisco Bay

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	**November 12, 2008**
This Order shall become effective on:	**<Effective Date>**
This Order shall expire on:	**<Expiration Date>**
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date**

IT IS HEREBY ORDERED that this Order supersedes Order No. R2-2003-0010 except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on **November 12, 2008**.

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Bruce H. Wolfe**,** Executive Officer

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Attachments

I. FACILITY INFORMATION

The following Discharger is subject to the waste discharge requirements set forth in this Order:

Table 4. Facility Information

Discharger	Cities of South San Francisco and San Bruno
Name of Facility	South San Francisco and San Bruno Water Quality Control Plant and Collection System
Facility Address	195 Belle Air Road
	South San Francisco, CA 94080
	San Mateo County
Facility Contact, Title, and Phone	David Castagnola, Plant Superintendent (650) 829-3844
Mailing Address	Same as Facility Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	13 million gallons per day (MGD) (average dry weather design treatment capacity)
Service Areas	Cities of San Francisco and San Bruno; portions of Daly City; and the town of Colma
Service Population	105,870

II. FINDINGS

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

A. Background. The Cities of South San Francisco and San Bruno (hereinafter the Discharger) are currently discharging under Order No. R2-2003-0010 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038130. The Discharger submitted a Report of Waste Discharge, dated September 24, 2007, and applied to renew its NPDES permit to discharge up to 13 million gallons per day (MGD) of secondary treated wastewater (average dry weather flow) from the South San Francisco and San Bruno Water Quality Control Plant and its collection system (Plant).

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

B. Facility Description. The Discharger owns and operates the Plant, which provides secondary treatment of wastewater from domestic, commercial and industrial sources from the service areas listed in Table 4, above. The total service population is approximately 105,867 (2007 estimate). The Discharger has an average dry weather design treatment capacity of 13 MGD. The average discharge rate is 9.82 MGD, based on flow data from 2003 to 2006, and the maximum daily effluent flow rate from 2003 to 2006 was 24.31 MGD. The collection system is 100% separate sanitary sewer.

Wastewater treatment processes at the Plant include screening and grit removal, primary clarification, secondary treatment by an activated sludge process, secondary clarification, filtration, disinfection, and dechlorination. Biosolids are concentrated using dissolved air flotation thickeners, anaerobically digested, and filtered in belt filter presses. Biosolids are placed in a landfill in

Livermore. The Discharger is a member of the North Bayside System Unit (NBSU), a joint powers authority that also includes the Cities of Burlingame and Millbrae, and the San Francisco International Airport. Treated, disinfected wastewater from the Plant enters the NBSU force main and combines with treated, disinfected wastewaters from other NBSU members. The combined effluent is dechlorinated and discharged through the NBSU outfall at Discharge Point E-002. The Order also establishes two effluent monitoring locations to determine compliance with the requirements of the Order. Monitoring Location E-001 is located at a point after full treatment of wastewater but prior to its entry into the NBSU force main, and Monitoring Location E-002 is located at a point after entry of treated wastewater into the NBSU force main and after dechlorination, but prior to discharge into Lower San Francisco Bay.

Recent Plant improvements allow full secondary treatment of the design dry weather flow (13 MGD) plus peak wet weather flows up to 30 MGD. To prevent hydraulic overload of the activated sludge process, influent flows greater than 30 MGD receive primary treatment and disinfection only, and are blended with secondary treated wastewater prior to being discharged. Effluent flows greater than 62 MGD, which exceed the Plant's pumping capacity, are retained in a 7 million gallon storage pond until flow rates subside; however, during extreme wet weather events, when the effluent storage capacity is exceeded, treated wastewater is sometimes discharged through a nearshore outfall to Colma Creek. Consistent with Basin Plan requirements, discharges at any location other than Discharge Point E-002 are not authorized by this Order.

Attachment B provides a map of the area around the Plant. Attachment C provides a flow schematic of the Plant.

C. Legal Authorities. This Order is issued pursuant to Clean Water Act (CWA) section 402 and implements regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapters 5.5, Division 7 of the California Water Code (CWC) (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from the Plant to surface waters. This Order also serves as Waste Discharge Requirements pursuant to Article 4, Chapter 4, Division 7 of the CWC (commencing with section 13260).

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

E. California Environmental Quality Act (CEQA). Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA.

F. Technology-Based Effluent Limitations. CWA Section 301(b) and NPDES regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at minimum and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133. A detailed discussion of technology-based effluent limitation development is included in the Fact Sheet.

G. Water Quality-Based Effluent Limitations. CWA section 301(b) and NPDES regulations at 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

NPDES regulations at 40 CFR 122.44(d)(1)(i) mandate that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant that has no numeric criterion or objective, water quality-based effluent limitations (WQBELs) must be established using (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. *The Water Quality Control Plan for the San Francisco Bay Basin* (the Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Water Board), USEPA, and the Office of Administrative Law. Requirements of this Order implement the Basin Plan.

The Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of the marine influence on receiving waters of San Francisco Bay, total dissolved solids levels in San Francisco Bay exceed 3,000 milligrams per liter (mg/L) and thereby meet an exception to State Water Board Resolution No. 88-63. The MUN designation is therefore not applicable to Lower San Francisco Bay. Beneficial uses applicable to Lower San Francisco Bay are as follows.

Table 5. Basin Plan Beneficial Uses of Lower San Francisco Bay

Discharge Point	Receiving Water Name	Beneficial Uses
E-002	Lower San Francisco Bay	Industrial Service Supply (IND) Navigation (NAV) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Ocean, Commercial and Sport Fishing (COMM) Wildlife Habitat (WILD) Preservation of Rare and Endangered Species (RARE) Fish Migration (MIGR) Shellfish Harvesting (SHELL) Estuarine Habitat (EST)

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. About forty criteria in the NTR apply in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the State. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

J. State Implementation Policy. On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. Compliance Schedules and Interim Requirements. Section 2.1 of the SIP provides that, based on an existing discharger's request and demonstration that it is infeasible for it to achieve immediate compliance with an effluent limitation derived from a CTR criterion, a compliance schedule may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. The Basin Plan allows compliance schedules and interim effluent limitations or discharge specifications to allow time to implement a new or revised water quality objective.

On April 15, 2008, the State Water Board adopted Resolution No. 2008-0025, *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, which was approved by the U.S. EPA on August 27, 2008. This Order includes a compliance schedule and discharge specifications for dioxin-TEQ. A detailed discussion of the basis for the compliance schedule and discharge specifications is included in the Fact Sheet.

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

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on oil and grease, pH, total suspended solids (TSS), and biochemical oxygen demand (BOD). Derivation of these technology-based limitations is discussed in the Fact Sheet (Attachment F). This Order's technology-based pollutant restrictions implement the minimum

applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements as necessary to meet water quality standards.

WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under State law and submitted to USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for the purposes of the CWA" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

N. Antidegradation Policy. NPDES regulations at 40 CFR 131.12 require that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law and requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. CWA Sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in Order No. R2-2003-0010. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

P. Monitoring and Reporting. NPDES regulations at 40 CFR 122.48 require that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

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

R. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.C, IV.D, and V.B of this Order are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA, and consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

S. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet.

T. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

III. DISCHARGE PROHIBITIONS

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

B. The average dry weather flow, as measured at Monitoring Location E-001, as described in the attached Monitoring and Reporting Plan (MRP) (Attachment E), shall not exceed 13 MGD. The average dry weather flow shall be determined for compliance with this prohibition over three consecutive dry weather months each year.

C. Discharge of wastewater into Lower San Francisco Bay at any point where it does not receive an initial dilution of at least 10:1 is prohibited.

D. The bypass of untreated or partially treated wastewater to waters of the United States is prohibited, except as provided for in Section I.G.2 of Attachment D of this Order.

Blended wastewater is biologically treated wastewater blended with wastewater that has been diverted around biological treatment units or advanced treatment units. Such discharges are approved under the bypass conditions stated in 40 CFR 122.41(m)(4) when (1) the Discharger's peak wet weather influent flow volumes exceed the capacity of the secondary treatment unit(s) of 30 MG, (2) the discharge complies with the effluent and receiving water limitations contained in this Order, and (3) the Discharger is in compliance with Provision VI.C.7 of this Order. Furthermore, the Discharger shall operate the Plant as designed and in accordance with the Plant's Operations and Maintenance Manual. This means that it shall optimize storage and use of equalization units, and shall fully utilize the biological treatment units and advanced treatment units if applicable. The Discharger shall report incidents of blended effluent discharges in routine monitoring reports and shall conduct monitoring of this discharge as specified in the MRP (Attachment E).

E. Any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point E-002

1. Effluent Limitations for Conventional and Non-Conventional Pollutants

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point E-002, with compliance measured at Monitoring Location E-001 as described in the attached MRP (Attachment E).

Table 6. Effluent Limitations for Conventional and Non-Conventional Pollutants

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (BOD)	mg/L	30	45	---	---	---
Oil and Grease	mg/L	10	---	20	---	---
pH [1]	s.u.	---	---	---	6.0	9.0
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---
Total Residual Chlorine	mg/L	---	---	---	---	0.0 [2]

Footnotes for Table 6:

[1] If the Discharger monitors pH continuously, pursuant to 40 CFR 401.17, 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.

[2] This requirement is defined as below the limit of detection in standard test methods as defined in the latest 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, sodium hypochlorite, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff will conclude that these chlorine residual exceedances are false positives and are not violations of the Order's Total Residual Chlorine limit. Chlorine residual compliance shall be demonstrated by monitoring at the NBSU common outfall (E-002).

b. BOD and TSS 85 Percent Removal: The concentration-based average monthly percent removal of BOD and TSS shall not be less than 85 percent.

c. Fecal Coliform Bacteria: The treated wastewater shall meet the following limits of bacteriological quality:

(1) The geometric mean value for the last five samples analyzed for fecal coliform bacteria within each calendar month shall not exceed 200 MPN/100 mL; and

(2) The 90th percentile of the last ten samples collected within each calendar month shall not exceed a fecal coliform bacteria level of 400 MPN/100 mL.

d. Enterococci Bacteria: The monthly geometric mean enterococci bacteria density in samples of treated wastewater collected at Monitoring Location E-001 shall not exceed a Most Probable Number (MPN) of 400 per 100 milliliters (MPN/100 mL).

2. Effluent Limitations for Toxic Pollutants

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point E-002, with compliance measured at Monitoring Location E-001 (except as specified), as described in the attached MRP (Attachment E).

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Effluent Limitations [1,2]	
		AMEL	MDEL
Copper [3]	µg/L	73	92
Nickel	µg/L	31	68
Cyanide[4]	µg/L	20	43
Dioxin-TEQ [5]	µg/L	1.4×10^{-8}	2.8×10^{-8}
Benzo(k)fluoranthene	µg/L	0.48	0.97
Bis(2-ethylhexyl)phthalate	µg/L	58	117
Chrysene	µg/L	0.48	0.96
Dibenzo(a,h)anthracene	µg/L	0.49	0.98
Indeno(1,2,3-cd)pyrene	µg/L	0.48	0.96
alpha-BHC	µg/L	0.13	0.26
4,4'-DDD	µg/L	0.00084	0.0017
Tributyltin	µg/L	0.045	0.095
Ammonia, Total	mg/L N	110	230

Footnotes for Table 7:

(1) a. Limitations for toxic pollutants apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).
b. All metals limitations are expressed as total recoverable metal.

(2) A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limitation and the Reporting Level for that constituent. As outlined in SIP Section 2.4.5, Table 8, below, indicates the Minimum Level (ML) for compliance determination purposes. An ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

(3) Alternate Effluent Limits for Copper:
a. If copper Site Specific Objectives (SSOs) for the receiving water become legally effective, resulting in an adjusted saltwater Criterion Continuous Concentration (CCC) of 2.5 micrograms per liter (µg/L) and a Criterion Maximum Concentration (CMC) of 3.9 µg/L, as documented in the Basin Plan Amendment Resolution R2-2007-0042 and in *Copper Site-Specific Objectives in San Francisco Bay: Proposed Basin Plan Amendment and Draft Staff Report* (dated June 6, 2007), then upon their effective date, the following limitations shall supersede those copper limitations listed in Table 7 (the rationale for these effluent limitations can be found in the Fact Sheet [Attachment F]).
Maximum Daily Effluent Limitation (MDEL) = 69 µg/L and Average Monthly Effluent Limitation (AMEL) = 55 µg/L.
b. If a different copper SSO for the receiving water is adopted, alternate WQBELs based on the SSO will be determined after the SSO effective date.

(4) Compliance with the effluent limitations for cyanide shall be determined at Monitoring Location E-002, as described in the attached MRP. The Discharger shall be solely responsible for all violations of the cyanide limitations at Discharge Point E-002.

(5) Dioxin-TEQ is subject to the compliance schedule in Provision C.8. of this Order. The final effluent limitations shall become effective ten years following the effective date of this Order.

Table 8. Minimum Levels for Pollutants with Effluent Limitations

Parameter	Minimum Level	Units
Copper	0.5 or 2	µg/L
Nickel	1 or 5	µg/L
Cyanide	5	µg/L
Benzo(k)fluoranthene	2	µg/L
Bis(2-ethylhexyl)phthalate	5	µg/L
Chrysene	5	µg/L
Dibenzo(a,h)anthracene	0.1	µg/L
Indeno(1,2,3-cd)pyrene	0.05	µg/L
alpha-BHC	0.01	µg/L
4,4'-DDD	0.05	µg/L
Tributyltin	0.005	µg/L
Ammonia	0.2	mg/L
Dioxin-TEQ	½ the USEPA specified MLs for Method 1613	µg/L
2,3,7,8-TCDD	5	pg/L
1,2,3,7,8-PeCDD	25	pg/L
1,2,3,4,7,8-HxCDD	25	pg/L
1,2,3,6,7,8-HxCDD	25	pg/L
1,2,3,7,8,9-HxCDD	25	pg/L
1,2,3,4,6,7,8-HpCDD	25	pg/L
OCDD	50	pg/L
2,3,7,8-TCDF	5	pg/L
1,2,3,7,8-PeCDF	25	pg/L
2,3,4,7,8-PeCDF	25	pg/L
1,2,3,4,7,8-HxCDF	25	pg/L
1,2,3,6,7,8-HxCDF	25	pg/L
1,2,3,7,8,9-HxCDF	25	pg/L
2,3,4,6,7,8-HxCDF	25	pg/L
1,2,3,4,6,7,8-HpCDF	25	pg/L
1,2,3,4,7,8,9-HpCDF	25	pg/L
OCDF	50	pg/L

3. Acute Toxicity:

a. Representative samples of the effluent at Monitoring Location E-001 shall meet the following limits for acute toxicity: Bioassays shall be conducted in compliance with Section V.A of the MRP (Attachment E).

The survival of organisms in undiluted effluent shall be:

- an eleven (11) sample median value of not less than 90 percent survival, and
- an eleven (11) sample 90 percentile value of not less than 70 percent survival.

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

11 sample median: 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 less bioassay tests show less than 90 percent survival.

90th percentile: 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 less bioassay tests show less than 70 percent survival.

c. Bioassays shall be performed using the most up-to-date USEPA protocol and the most sensitive species based on the most recent screening test results. Bioassays shall be conducted in compliance with *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,* currently 5th Edition (EPA-821-R-02-012).

d. If the Discharger can demonstrate 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 in compliance with effluent limits, then such toxicity does not constitute a violation of this effluent limitation.

4. Chronic Toxicity

a. Compliance with the Basin Plan narrative chronic toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated final effluent at Discharge Point E-001 meeting test acceptability criteria and Section V.B of the MRP (Attachment E). Failure to conduct the required toxicity tests or a TRE within the period designated in the MRP, shall result in the establishment of effluent limitations for chronic toxicity.

(1) Conduct routine monitoring.

(2) Accelerate monitoring after exceeding a three sample median of 10 chronic toxicity units (TUc) or single-sample maximum of 20 TUc, consistent with Table 4-5 of the Basin Plan for dischargers monitoring chronic toxicity more frequently than semi-annually. Accelerated monitoring shall consist of monthly monitoring.

(3) Return to routine monitoring if accelerated monitoring does not exceed the "trigger" in (2), above.

(4) If accelerated monitoring confirms consistent toxicity above the "trigger" in (2), above, initiate toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) in accordance with a work plan submitted in accordance with Section V.B.3 of the MRP (Attachment E) that incorporates any and all comments from the Executive Officer.

(5) Return to routine monitoring after appropriate elements of the TRE work plan are implemented and either the toxicity drops below the "trigger" level in (2), above, or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

b. The Discharger shall conduct routine monitoring with the test species and protocols specified in Section V.B of the MRP (Attachment E). The Discharger shall also perform Chronic Toxicity Screening Phase monitoring as described in the Appendix E-1 of the MRP (Attachment E). Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Appendices E-1 and E-2 of the MRP (Attachment E).

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

1. Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharges shall not cause the following in Lower San Francisco Bay:

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

   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 and other products of petroleum origin; or

   e. Toxic or other deleterious substances to be present in concentrations or quantities that will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or that 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 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, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

   b. Dissolved Sulfide Natural background levels

   c. pH Within a range from 6.5 to 8.5

   d. 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.

VI. PROVISIONS

A. Standard Provisions

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

2. The Discharger shall comply with all applicable items of the Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (Standard Provisions, Attachment G). Where provisions or reporting requirements specified in this Order and Attachment G are different from equivalent or related provisions or reporting requirements given in the Standard Provisions in Attachment D, the specifications of this Order and/or Attachment G shall apply in areas where those provisions are more stringent. Duplicative requirements in the federal Standard Provisions in VI.A.1, above (Attachment D), and the regional Standard Provisions (Attachment G) are not separate requirements. A violation of a duplicative requirement does not constitute two separate violations.

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the MRP (Attachment E) and future revisions thereto. The Discharger shall also comply with the requirements contained in *Self Monitoring Programs, Part A*, August 1993 (Attachment G).

C. Special Provisions

1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances as allowed by law:

a. If present or future investigations demonstrate that the discharges governed by this Order will have, or will cease to have, a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters.

b. If new or revised WQOs or Total Maximum Daily Loads (TMDLs) come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs and wasteload allocations in TMDLs. Adoption of effluent limitations contained in this Order is not intended to restrict in any way future modifications based on legally adopted WQOs or TMDLs, or as otherwise permitted under Federal regulations governing NPDES permit modifications.

c. If translator or other water quality studies provide a basis for determining that a permit condition should be modified.

d. If an administrative or judicial decision on a separate NPDES permit or WDR addresses requirements similar to this discharge.

e. Or as otherwise authorized by law.

The Discharger may request permit modifications based on the above. The Discharger shall include in any such request an antidegradation and antibacksliding analysis.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Effluent Characterization for Selected Constituents

The Discharger shall continue to monitor and evaluate the discharge from the Plant to the NBSU force main (measured at Monitoring Location E-001) for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001, Letter entitled, *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (Attachment G) according to the sampling frequency specified in the attached MRP (Attachment E). Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Water Board's August 6, 2001, Letter under Effluent Monitoring for Major Dischargers.

The Discharger shall evaluate on an annual basis if concentrations of any constituent increase over past performance. The Discharger shall investigate the cause of the increase. The investigation may include, but need not be limited to, an increase in the effluent monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. This requirement may be satisfied through identification of these constituents as "pollutants of concern" in the Discharger's Pollutant Minimization Program described in Provision VI.C.3, below. A summary of the annual evaluation of data and source investigation activities shall also be reported in the annual self-monitoring report.

A final report that presents all the data shall be submitted to the Regional Water Board no later than 180 days prior to the Order expiration date. This final report shall be submitted with the application for permit reissuance.

b. Ambient Background Receiving Water Study

The Discharger shall collect or participate in collecting background ambient receiving water monitoring data for priority pollutants for which the Regional Water Board is required to perform reasonable potential analyses and calculate effluent limitations. The data for the conventional water quality parameters (pH, salinity, and hardness) shall be sufficient to characterize these parameters in the receiving water at a point after the discharge has mixed with the receiving waters. This provision may be met through monitoring through a Collaborative Bay Area Clean Water Agencies (BACWA) Study or a similar ambient monitoring program for San Francisco Bay. This Order may be reopened, as appropriate, to incorporate effluent limits or other requirements based on Regional Water Board review of these data.

The Discharger shall submit a final report that presents all these data to the Regional Water Board 180 days prior to Order expiration, or cause one to be submitted on its behalf. This final report shall be submitted prior to or with the application for permit reissuance.

c. Optional Mass Offset

If the Discharger can demonstrate that further net reductions of the total mass loadings of 303(d)-listed pollutants (e.g., dioxin-TEQ) to the receiving water cannot be achieved through economically feasible measures such as aggressive source control, wastewater reuse, and treatment plant optimization, but only through a mass offset program, the Discharger may submit to the Regional Water Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Regional Water Board may modify this Order to allow an approved mass offset program.

3. Best Management Practices and Pollution Minimization

a. Pollution Minimization Program

The Discharger shall continue to improve, in a manner acceptable to the Executive Officer, its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.

b. Annual Pollution Prevention Report

The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28th of each calendar year. The annual report shall cover January through December of the preceding year. Each annual report shall include at least the following information:

(1) *A brief description of its treatment plant, treatment plant processes and service area.*

(2) *A discussion of the current pollutants of concern.* Periodically, the Discharger shall 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.

(3) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify pollutant sources. 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.

(4) *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. The Discharger may implement the tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

(5) *Outreach to employees.* The Discharger shall inform its employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants. The Discharger may provide a forum for employees to provide input to the program.

(6) *Continuation of Public Outreach Program.* The Discharger shall prepare a public outreach program to communicate pollution minimization measures 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, conducting school outreach programs, conducting plant tours, and providing public information in various media. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.

(7) *Discussion of criteria used to measure PMP's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its PMP. This discussion shall address the specific criteria used to measure the effectiveness of each of the tasks in Provision VI.C.3.b.(3-6), above.

(8) *Documentation of efforts and progress.* This discussion shall detail all of the Discharger's activities in the Pollution Minimization Program during the reporting year.

(9) *Evaluation of Program's and tasks' effectiveness.* The Discharger shall use the criteria established in b.(7), above, to evaluate the Pollutant Minimization Program's and tasks' effectiveness.

(10) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation of effectiveness, the Discharger shall describe how it will continue or change its PMP tasks to more effectively reduce the loadings of pollutant to the treatment plant, and subsequently to receiving waters.

c. Pollutant Minimization Program for Reportable Priority Pollutants

The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as Detected but Not Quantified [DNQ] when the effluent limitation is less than the method detection limit [MDL]), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

(1) A sample result is reported as DNQ and the effluent limitation is less than the Reporting Limit (RL); or

(2) A sample result is reported as Not Detected (ND) and the effluent limitation is less than the MDL, using definitions described in the SIP.

d. If triggered by the reasons in c. above, the Discharger's PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

(1) 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;

(2) 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;

(3) 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;

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

(5) The annual report required by 3.b. above, shall specifically address the following items:

i. All PMP monitoring results for the previous year;

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

iii. A summary of all actions undertaken pursuant to the control strategy; and

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

4. Construction, Operation, and Maintenance Specifications

a. Wastewater Facilities Review and Evaluation and Status Reports

(1) 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.

(2) The Discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with (1) above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.

(3) The Discharger shall provide the Executive Officer, upon request, a report describing the current status of its wastewater facilities and operation practices, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects.

b. Operations and Maintenance (O&M) Manual, Review and Status Reports

(1) The Discharger shall maintain an O&M manual for its wastewater facilities. The O&M Manual shall be maintained in usable condition and be available for reference and use by all applicable personnel.

(2) The Discharger shall regularly review, revise, or update, as necessary, the O&M Manual(s) to ensure that the document(s) may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. Applicable revisions of the O&M manual shall be completed within 90 days of any significant changes being made in the Plant equipment or operation practices.

(3) The Discharger shall provide the Executive Officer a report describing the current status of its O&M manual, including any recommended or planned actions and an estimated time schedule for these actions, upon request. The Discharger shall also include a description or summary of review and evaluation procedures and applicable changes to its O&M manual in each Annual Self-Monitoring Report.

c. Contingency Plan, Review and Status Reports

(1) The Discharger shall maintain a Contingency Plan as required by Regional Water Board Resolution 74-10 (Attachment G) 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 CWC.

(2) The Discharger shall regularly review the Contingency Plan so that the plan may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.

(3) The Discharger shall provide the Executive Officer a report describing the current status of its review and update of the Contingency Plan upon request. The Discharger shall also include a description or summary of review and evaluation procedures and applicable changes to its Contingency Plan in each Annual Self-Monitoring Report.

5. Special Provisions for POTWs

a. Pretreatment Program

(1) The Discharger shall implement and enforce its approved pretreatment program in accordance with federal Pretreatment Regulations (40 CFR 403); pretreatment standards promulgated under Sections 307(b), 307(c), and 307(d) of the Clean Water Act; pretreatment requirements specified under 40 CFR 122.44(j); and the requirements in Attachment H, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to:

i. Enforcement of National Pretreatment Standards of 40 CFR 403.5 and 403.6;

ii. 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 its approved pretreatment program;

iii. Submission of reports to USEPA, the State Water Board, and the Regional Water Board, as described in Attachment H "Pretreatment Requirements"; and

iv. Evaluation of the need to revise local limits under 40 CFR 403.5(c)(1) and, within 180 days after the effective date of this Order, submission of a report describing the changes, with a plan and schedule for implementation. To ensure no significant increase in the discharge of copper, and thus compliance with antidegradation requirements, the Discharger shall not consider eliminating or relaxing local limits for copper in this evaluation.

(2) The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board, or USEPA may take enforcement actions against the Discharger as authorized by the Clean Water Act.

b. Sludge Management Practices Requirements

(1) All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR 503. If the Discharger desires to dispose of sludge by a different method, a request for permit modification must be submitted to USEPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR 503 are enforceable by USEPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger. The Regional Water Board should be copied on relevant correspondence and reports forwarded to USEPA regarding sludge management practices.

(2) Sludge treatment, storage and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.

(3) The Discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal which has a likelihood of adversely affecting human health or the environment.

(4) The discharge of sludge shall not cause waste material to be in a position where it is or can be carried from the sludge treatment and storage site and deposited in waters of the State.

(5) The sludge treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.

(6) For sludge that is applied to the land, placed on a surface disposal site, or fired in a sludge incinerator as defined in 40 CFR 503, the Discharger shall submit an annual report to USEPA and the Regional Water Board containing monitoring results and pathogen and vector attraction reduction requirements as specified by 40 CFR 503, postmarked February 15 of each year, for the period covering the previous calendar year.

(7) Sludge that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. In the annual Self-Monitoring Report, the Discharger shall include the amount of sludge disposed of and the landfill(s) to which it was sent.

(8) Permanent on-site sludge storage or disposal activities are not authorized by this Order. 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.

(9) Sludge Monitoring and Reporting Provisions of this Regional Water Board's Standard Provisions (Attachment G), apply to sludge handling, disposal and reporting practices.

(10) The Regional Water Board may amend this Order prior to expiration if changes occur in applicable state and federal sludge regulations.

c. Sanitary Sewer Overflows and Sewer System Management Plan

The Discharger's collection system is part of the Plant subject to this Order. As such, the Discharger must properly operate and maintain its collection system (Attachment D, Standard Provisions - Permit Compliance, subsection I.D). The Discharger must report any noncompliance (Attachment D, Standard Provision - Reporting, subsections V.E.1 and V.E.2) and mitigate any discharge from the Discharger's collection system in violation of this Order (Attachment D, Standard Provisions - Permit Compliance, subsection I.C). The General Waste Discharge Requirements for Sanitary Sewer Systems (General WRDs for Wastewater Collection Agencies, State Water Board Order No. 2006-0003 DWQ) has requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must comply with both the General WDRs for Wastewater Collection Agencies and this Order, the General WDRs for Wastewater Collection Agencies more clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows.

Implementation of the requirements of the General WDR for Wastewater Collection Agencies for proper operation and maintenance and mitigation of spills will satisfy the corresponding federal NPDES requirements specified in this Order. Following reporting requirements in the General WDRs for Wastewater Collection Agencies will satisfy NPDES reporting requirements for sewage spills. Furthermore, the Discharger shall comply with the schedule for development of sewer system management plans (SSMPs) as indicated in the letter issued by the Regional Water Board on July 7, 2005, pursuant to CWC Section 13267; and with the sanitary sewer overflow and unauthorized discharge notification and reporting requirements of the letter issued by the Regional Water Board

on May 1, 2008, pursuant to CWC Section 13267. The Discharger shall report sanitary sewer overflows electronically using the State Water Board's on-line reporting system.

6. Corrective Measures to Eliminate Use of the Nearshore Outfall

Any discharge of wastewater from the nearshore outfall is a violation of Discharge Prohibitions III.A and C of this Order. The Discharger shall undertake the following steps to eliminate discharges from the nearshore outfall.

Table 9. Corrective Measures to Eliminate Use of the Nearshore Outfall

Task	Deadline
1. Implement the alternatives identified in the Discharger's No Feasible Alternatives Analysis submitted on August 26, 2008. At a minimum, these should include using the effluent storage pond as needed during wet weather events.	Effective date of this Order
2. a. Investigate the conditions under which nearshore discharges have occurred. Identify alternatives to eliminate the use of the nearshore outfall. b. Submit a proposal to monitor Colma Creek during wet weather months.	Six months after the effective date of this Order
2. Implement actions identified in Task 2 and provide annual progress updates for Tasks 1 and 2.	Annually with the Annual Report

7. Corrective Measures to Minimize Blending

The Discharger shall adhere to the following requirements to minimize the occurrence of blending primary and secondary treated wastewaters prior to discharge.

Table 10. Corrective Measures to Minimize Blending

Task	Deadline
1. *Wet Weather Improvements*. Submit a technical report to the Regional Water Board that evaluates alternatives for potential wet weather conveyance and treatment plant improvements. Comparisons of various alternatives should be based on costs, effectiveness, and implementability. The report should propose preferred alternative(s) based on the results of the analysis. At a minimum, the report should include the alternatives identified in the Discharger's No Feasible Alternatives Analysis submitted on August 28, 2008: • Remediate and/or replace gravity and trunk lines and reduce Inflow and Infiltration in the South San Francisco collection system. • Minimize slug loading from industrial users through Pretreatment and Pollution Prevention Program prohibitions. • Implement "enhanced primary treatment" through adding ferric chloride and anionic polymer to enhance settling in the primary clarifiers. • Revise the South San Francisco Municipal Code to strengthen provisions relating to pretreatment, slug discharges, etc. • Implement the Capacity, Management, Operations, and Maintenance (C-MOM) Program. • Install an ultrasonic level sensor and totalizer to better quantify the bypassed primary effluent. • Develop and implement operational guidelines for blending	August 10, 2009

operations for primary effluent in chlorine contact tank no. 1 (CCT-1) to be routed back to Return Activated Sludge Pump Station for additional treatment. • Identify and implement wet weather procedures so flows up to 40 MGD will receive full secondary treatment. • Tasks identified in Provision 6 will also minimize blending	
2. *Workplan*. Prepare a workplan to implement the preferred alternatives from the technical report.	November 10, 2009
3. *Alternatives*. Begin implementing the measures identified in the workplan upon approval of the plan by the Regional Water Board.	In accordance with the workplan described in Task 2, above
4. *Completion Report*. Provide annual updates on the progress in completing measures specified in the workplan.	Annually with the Annual Report
5. *No Feasible Alternatives Analysis*. Complete a utility analysis if the Discharger seeks to continue to bypass peak wet weather flows around its secondary treatment units. The utility analysis must satisfy 40 CFR 122.41(m)(4)(i)(A)-(C) and any applicable policy or guidance such as the process set forth in Part 1 of USEPA's Peak Wet Weather Policy's No Feasible Alternatives Analysis Process (available at http://cfpub.epa.gov/npdes/wetweather.cfm) once it is finalized.	180 days prior to the Order expiration date

8. Compliance Schedule

The Discharger shall adhere to the following schedule to comply with final effluent limitations established by this Order for dioxin-TEQ.

Table 11. Dioxin-TEQ Compliance Schedule

Task	Deadline
1. Continue source control measures identified in the Discharger's Infeasibility Report to reduce concentrations of dioxin-TEQ to the treatment plant, and therefore to receiving waters.	Upon the effective date of this Order.
2. Evaluate and report on the effectiveness of source control measures in reducing concentrations of dioxin-TEQ to the treatment plant. If previous measures have not been successful in enabling the Discharger to comply with final limits for dioxin-TEQ, the Discharger shall also identify and implement additional source control measures to further reduce concentrations of these pollutants.	Annually by February 28th with the Annual Pollution Prevention Report required by Section VI.C.3.b, above.
3. In the event that source control measures are insufficient for meeting the final water quality based effluent limit specified in Effluent Limitations and Discharge Specifications A.2 for dioxin-TEQ, submit a schedule for implementation of additional actions to reduce the concentrations of these pollutants.	No later than 12 months after a detection of dioxin-TEQ that is out of compliance with the final effluent limits.
4. Commence implementation of the identified additional actions in accordance with the schedule submitted in task 3, above.	Annually by February 28th with the Annual Pollution Prevention Report required by Section VI.C.3.b, above.
5. Comply with IV. Effluent Limitations and Discharger Specifications A.2 for dioxin-TEQ. Alternatively, the Discharger may comply with the limit through implementation of a mass offset strategy for dioxin-TEQ in accordance with policies in effect at that time (see Provision VI.C.2c).	10 years following the effective date of this Order

9. Action Plan for Copper

The Discharger shall implement pretreatment, source control, and pollution prevention for copper in accordance with the following tasks and time schedule.

Table 12. Copper Action Plan

Task	Compliance Date
1. Review Potential Copper Sources The Discharger shall submit an inventory of potential copper sources to the treatment plant.	By February 28, 2009.
2. Implement Copper Control Program The Discharger shall submit a plan for and begin implementation of a program to reduce copper discharges identified in Task 1 consisting, at a minimum, of the following elements: a. Provide education and outreach to the public (e.g., focus on proper pool and spa maintenance and plumbers' roles in reducing corrosion). b. If corrosion is determined to be a significant copper source, work cooperatively with local water purveyors to reduce and control water corrosivity, as appropriate, and ensure that local plumbing contractors implement best management practices to reduce corrosion in pipes. c. Educate plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharges.	February 28, 2010, with 2009 annual pollution prevention report.
3. Implement Additional Measures If the three-year rolling mean copper concentration of the receiving water exceeds 2.2 µg/L, evaluate the effluent copper concentration trend, and if it is increasing, develop and implement additional measures to control copper discharges.	Within 90 days of exceedance
4. Report Status of Copper Control Program Submit a report to the Regional Water Board documenting implementation of the copper control program.	Annually with annual pollution prevention reports due February 28.

10. Action Plan for Cyanide

The Discharger shall implement monitoring and surveillance, pretreatment, source control, and pollution prevention for cyanide in accordance with the following tasks and time schedule (based on Regional Water Board letter dated August 8, 2008, entitled, *Alternate Cyanide Effluent Limitations Effective, Requirement for Cyanide Action Plan, and Requirement for Influent Monitoring*).

Table 13. Cyanide Action Plan

Task	Compliance Date
1. Implement Cyanide Control Program The Discharger shall submit a plan for and begin implementation of a program to minimize cyanide discharges to the sanitary sewer system consisting, at a minimum, of the following elements: a. Inspect each potential contributor to assess the need to include that contributing source in the control program. b. Inspect contributing sources included in the control program annually. Inspection elements may be based on U.S. EPA guidance, such as Industrial User Inspection and Sampling Manual for POTWs (EPA 831-B-94-01). c. Develop and distribute educational materials to contributing sources and potential contributing sources regarding the need to prevent cyanide discharges. d. Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. e. If ambient monitoring shows cyanide concentrations of 1.0 µg/L or higher in the main body of San Francisco Bay, undertake actions to identify and abate cyanide sources responsible for the elevated ambient concentrations.	With the Annual Pollution Prevention report due February 28th of each year.
2. Report Status of Cyanide Control Program Submit a report to the Regional Water Board documenting implementation of the cyanide control program.	With the Annual Pollution Prevention report due February 28th of each year.

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. General.

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in Attachment A to the MRP (Attachment E) and Fact Sheet Section VI. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data.

When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ), also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$

where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL) is the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (*CV*) is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in this Order), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ) are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA) is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of San Francisco Bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in California Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation is the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation is the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL) means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND) are those sample results less than the laboratory's MDL.

Ocean Waters are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to California Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in California Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences.

Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Satellite Collection System is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ) is a measure of variability that is calculated as follows:

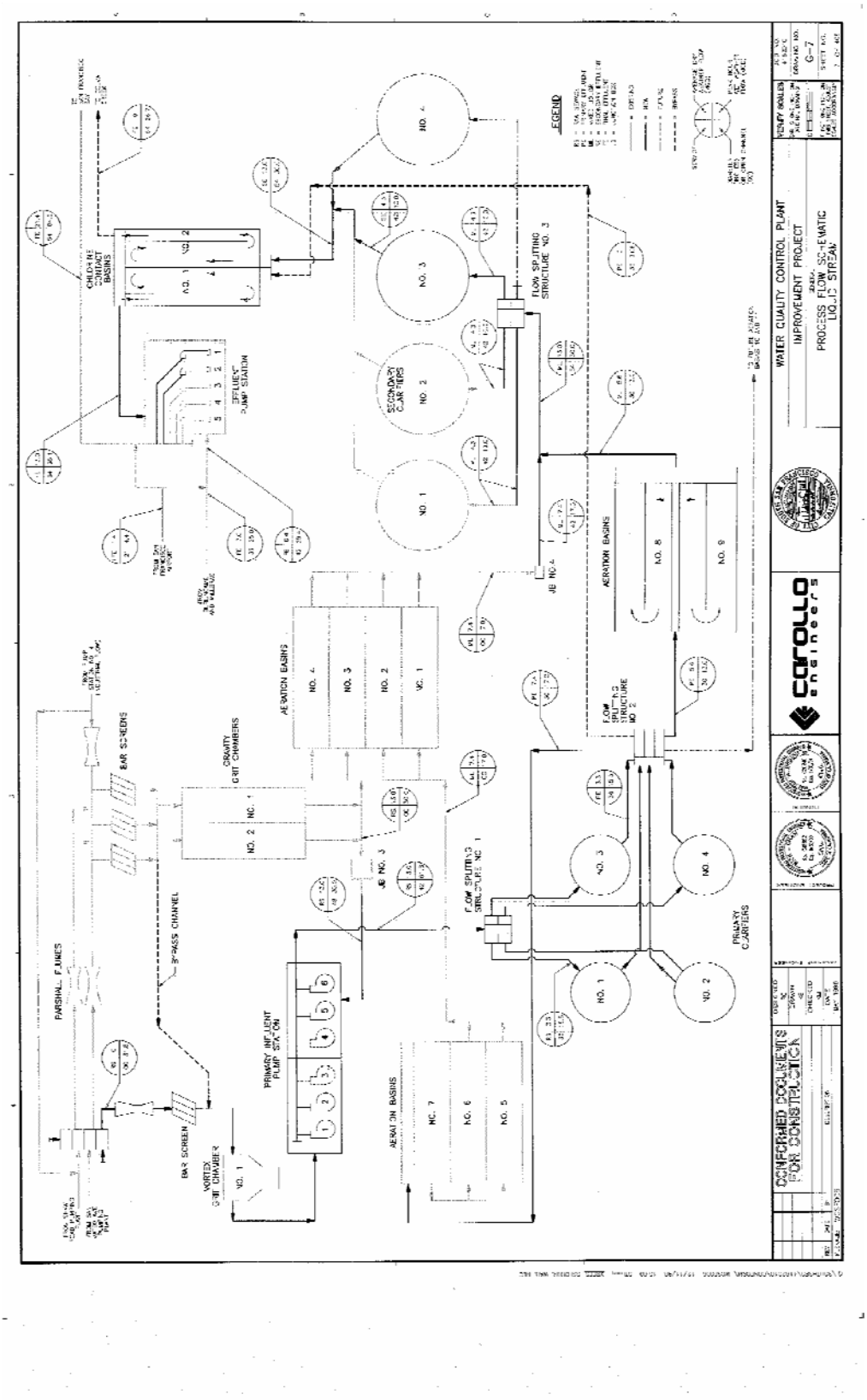
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – FACILITY MAP

ATTACHMENT C – PROCESS FLOW DIAGRAM



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order (40 C.F.R. § 122.41(e)).

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions

   a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)

   b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment

should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).).

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of this Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 C.F.R. § 122.22(a)(3).).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant

manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

    a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

    b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application

process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 C.F.R. § 122.42(b)(2).)

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

National Pollutant Discharge Elimination System (NPDES) regulations at 40 CFR 122.48 require that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and State regulations.

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with the MRP for this Order as adopted by the Regional Water Board, and with all of Self-Monitoring Program (SMP), Part A, dated August 1993 (SMP, Attachment G). The MRP and SMP may be amended by the Executive Officer pursuant to U.S. Environmental Protection Agency (USEPA) regulations 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and SMP, the MRP prevails.

B. All analyses shall be conducted using current USEPA methods, methods that have been approved by the USEPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits and to perform reasonable potential analyses. Equivalent methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit, and must be approved for use by the Executive Officer, following consultation with the State Water Quality Control Board (State Water Board) Quality Assurance Program.

C. Sampling and analysis of additional constituents is required pursuant to Table 1 of the Regional Water Board's August 6, 2001, Letter entitled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (Attachment G).

D. Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with Water Code section 13176 and shall include quality assurance/quality control data with their reports.

E. For compliance and reasonable potential monitoring, analyses shall be conducted using commercially available and reasonably achievable detection levels that are lower than the effluent limitations. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels (MLs) given below.

MLs are the concentrations at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed. All MLs are expressed as micrograms per liter (µg/L).

Table E-1 lists the test methods the Discharger may use for compliance and reasonable potential monitoring for the pollutants with effluent limits.

Table E-1. Test Methods and Minimum Levels for Pollutants with Reasonable Potential

CTR #	Constituent	Types of Analytical Methods [1] Minimum Levels (µg/L)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICPMS	SPGFAA	HYDRIDE	CVAF	DCP
6	Copper								0.5	2			
9	Nickel								1	5			
14	Cyanide				5								
	Dioxin-TEQ [2]												
64	Benzo(k)fluoranthene			2									
68	Bis(2-ethylhexyl) phthalate		5										
73	Chrysene			5									
74	Dibenzo(a,h) anthracene			0.1									
92	Indeno(1,2,3 cd) pyrene			0.05									
103	alpha-BHC	0.01											
110	4,4'-DDD	0.05											
--	Tributyltin [3]	0.005											
--	Ammonia	0.2 mg/L (as N) using titration method											

Footnotes for Table E-1:

[1] Analytical Methods / Laboratory techniques are defined as follows:
Color = Colorimetric;
CVAF = Cold Vapor Atomic Fluorescence.
DCP = Direct Current Plasma
FAA = Furnace Atomic Absorption;
GC = Gas Chromatography
GCMS = Gas Chromatography Mass Spectroscopy
GFAA = Graphite Furnace Atomic Absorption;
ICP = Inductively Coupled Plasma
ICPMS = Inductively Coupled Plasma/Mass Spectrometry;
LC = Liquid Chromatography
SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. USEPA 200.9)

[2] Use USEPA Method 1613. MLs shall be those specified by Table 8 of the Order for each congener.

[3] Analysis of tributyltin shall be by GC-FPD, GS-MS, or a USEPA-approved method; the method shall be capable of speciating organotins and have limits of detection for tributyltin of 5 ng/L. Alternative methods of analysis must be approved by the Executive Officer.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order.

Table E-2. Monitoring Station Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Influent	A-001	At a point in the treatment facilities upstream of the primary clarifiers and immediately downstream from where all influent flow streams combine.
Effluent	E-001	At a point after full treatment, including disinfection, and prior to entry into the North Bayside System Unit (NBSU) joint force main.
Effluent	E-002	At a point where all wastes tributary to the NBSU combined outfall are present, after dechlorination and preceding discharge into Lower San Francisco Bay.

Overflows and Bypass Station	OV-1 through OV-'n'	Locations of bypass or overflow from manholes, pump stations, or the collection system under the Discharger's control.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor influent to the Plant at A-001 as follows.

Table E-3. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate [1]	MGD	Cont/D	Cont	[2]
Biochemical Oxygen Demand (BOD)	mg/L	C-24	3/Week	[2]
	kg/day	C-24	3/Week	[2]
Total Suspended Solids (TSS)	mg/L	C-24	5/Week	[2]
	kg/day	C-24	5/Week	[2]

Footnotes for Table E-3:

[1] For influent flows, the following information shall also be reported monthly:
Daily: Total Daily Flow Volume (MG)
Monthly: Monthly Average Flow (MGD)
Monthly: Maximum Daily Flow (MGD)
Monthly: Minimum Daily Flow (MGD)
Monthly: Total Flow Volume (MG)

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

IV. EFFLUENT MONITORING REQUIREMENTS

A. The Discharger shall monitor treated effluent from the Plant at E-001 as follows:

Table E-4. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate [1]	MGD	Cont	Cont/D	[2]
Oil and Grease [3]	mg/L	G	1/Month	[2]
	kg/day	G	1/Month	[2]
pH [4]	s.u.	G	1/Day	[2]
BOD_5 [5]	mg/L	C-24	3/Week	[2]
	kg/day	C-24	3/Week	[2]
TSS [5]	mg/L	C-24	5/Week	[2]
	kg/day	C-24	5/Week	[2]
Acute Toxicity [6]	% survival	C-24	1/Month	[2]
Chronic Toxicity [7]	TUc	C-24	2/Year	[2]
Dissolved Oxygen	mg/L	G	1/Day	[2]
	% saturation	G	1/Day	[2]
Fecal Coliform Bacteria	MPN/100mL	G	3/Week	[2]
Enterococcus Bacteria [8]	MPN/100mL	G	M	[2]
Temperature	°C	G	1/Day	[2]
Ammonia (total as N)	mg/L as N	C-24	1/Month	[2]
	kg/day as N	C-24	1/Month	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Unionized Ammonia	mg/L as N	C-24	1/Month	Calculated
Copper	µg/L	C-24	1/Month	(2)
Nickel	µg/L	C-24	1/Month	(2)
Dioxin-TEQ	µg/L	G	2/Year	(2)
Benzo(k)fluoranthene	µg/L	G	2/Year	(2)
Bis(2-ethylhexyl)phthalate	µg/L	G	2/Year	(2)
Chrysene	µg/L	G	2/Year	(2)
Dibenzo(a,h)anthracene	µg/L	G	2/Year	(2)
Indeno(1,2,3-cd)pyrene	µg/L	G	2/Year	(2)
alpha-BHC	µg/L	G	2/Year	(2)
4,4'-DDD	µg/L	G	2/Year	(2)
Tributyltin	µg/L	G	2/Year	(2)
Remaining Priority Pollutants	µg/L	G	2/Year (9)	(2)

Footnotes for Table E-4:

Units:

MG	=	million gallons
MGD	=	million gallons per day
s.u.	=	standard units
TUc	=	chronic toxicity units
MPN/100mL	=	most probable number per 100 milliliters
°C	=	degrees Celsius
µg/L	=	micrograms per liter
mg/L	=	milligrams per liter
kg/d	=	kilograms per day

(1) For effluent flows, the following information shall also be reported monthly:
Daily: Total Daily Flow Volume (MG)
Monthly: Monthly Average Flow (MGD)
Monthly: Maximum Daily Flow (MGD)
Monthly: Minimum Daily Flow (MGD)
Monthly: Total Flow Volume (MG)

(2) Pollutants and pollutant parameters shall be analyzed using the analytical methods described in 40 CFR 136. For priority pollutants, the methods shall meet the lowest MLs specified in Attachment 4 of the SIP. Where no methods are specified for a given pollutant, the methods shall be approved by this Regional Water Board or the State Water Board.

(3) Each oil and grease sampling event shall consist 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 analyzed separately with the result of each analysis weighted by instantaneous flow rates to calculate a composite sample result. 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 respective grab sample for extraction and analysis.

(4) If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in monthly Self-Monitoring Reports (SMRs).

(5) The percent removal for BOD and TSS shall be reported for each calendar month. Samples for BOD and TSS shall be collected simultaneously with influent samples.

(6) Acute bioassay tests shall be performed in accordance with Section V.A of this MRP.

(7) Critical Life Stage Toxicity Test shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in Section V.B of this MRP.

(8) The Discharger shall monitor for Enterococci using EPA-approved methods, including the IDEXX Enterolert Method.

(9) Sampling for all priority pollutants in the State Implementation Plan (SIP) is addressed in a Regional Water Board letter dated August 6, 2001, entitled *Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (not attached but available for review or download on the Regional Water Board's website at http://www.waterboards.ca.gov/sanfranciscobay/). For these pollutants, the sampling frequencies shall be the higher ones under this table or under the pretreatment program sampling required in Section X.A of this MRP. Pretreatment program monitoring can be used to satisfy part of these sampling requirements.

B. The Discharger shall monitor treated effluent from the Plant at E-002 as follows:

Table E-5. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate [1]	MGD	Cont	Cont/D	[2]
Cyanide [3]	µg/L	G	1/Month	[2]
Total Chlorine Residual [4]	mg/L	Cont	Cont/D	[2]
Standard Observations [5]	---	---	1/Day	[2]

Footnotes for Table E-5:

Units:

MG = million gallons
MGD = million gallons per day
µg/L = micrograms per liter
mg/L = milligrams per liter
kg/d = kilograms per day

[1] For effluent flows, the following information shall also be reported monthly:

Daily: Total Daily Flow Volume (MG)
Monthly: Monthly Average Flow (MGD)
Monthly: Maximum Daily Flow (MGD)
Monthly: Minimum Daily Flow (MGD)
Monthly: Total Flow Volume (MG)

[2] Pollutants and pollutant parameters shall be analyzed using the analytical methods described in 40 CFR 136. For priority pollutants, the methods shall meet the lowest MLs specified in Attachment 4 of the SIP. Where no methods are specified for a given pollutant, the methods shall be approved by this Regional Water Board or the State Water Board.

[3] The Discharger may, at its 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 the latest edition. Alternative methods of analysis must be approved by the Executive Officer.

[4] During all times when chlorination is used for disinfection of the effluent, effluent chlorine residual concentrations shall be monitored continuously. The Discharger may record discrete readings from the continuous monitoring every hour on the hour, and report on a daily basis, the maximum concentration observed following dechlorination. Chlorine residual concentrations shall be monitored and reported for sampling points both prior to and following dechlorination. Total chlorine dosage (kg/day) shall be recorded on a daily basis, and dechlorination chemical dosage and/or residual shall also be recorded for proof of any false exceedance. However, any confirmed chlorine residual exceedance occurring at any time of the day is an effluent limitation violation and must be reported in accordance with SMP Part A and Standard Provisions, Attachments D and G

[5] Standard observations. As specified in the SMP, Part A.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor acute and chronic toxicity at E-001 as follows.

A. Whole Effluent Acute Toxicity

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

2. Test organisms shall be fathead minnow or rainbow trout unless specified otherwise in writing by the Executive Officer.

3. All bioassays shall be performed according to the most up-to-date protocols in 40 CFR 136, currently in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,* 5th Edition.

4. If specific identifiable substances in the discharge can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the

influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment. Compliance with the acute toxicity limitation may be demonstrated after adjusting the effluent pH through the addition of concentrated sulfuric acid to minimize the concentration of un-ionized ammonia.

5. Effluent used for fish bioassays shall be dechlorinated prior to testing. The effluent sample may be taken from E-001 prior to disinfection instead of continuously dechlorinating effluent at E-001 for an acute toxicity monitoring sample. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be recorded and maintained with all other analytical documents.

   If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), or if the control fish survival rate is less than 90 percent; a new test shall be initiated and the Discharger shall investigate the cause of the mortalities and report its findings in the next self-monitoring report (SMR). Bioassay tests shall continue back-to-back until compliance is demonstrated.

B. Whole Effluent Chronic Toxicity

1. Chronic Toxicity Monitoring Requirements

   a. *Sampling*. The Discharger shall collect 24-hour composite samples of the effluent at the compliance point specified in Table E-4 above for critical life stage toxicity testing. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

   b. *Test Species*. The test species shall be *Mysidopsis bahia*. The Executive Officer may change to another test species if data suggest that another test species is more sensitive to the discharge.

   c. *Methodology*. Sample collection, handling and preservation shall be in accordance with USEPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in **Appendix E-1.** These are *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms,* currently third edition (EPA-821-R-02-014), and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* currently fourth Edition (EPA-821-R-02-013), with exceptions granted the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

   d. *Dilution Series.* The Discharger shall conduct tests at 2%, 5%, 10%, 20%, and 40%. The "%" represents percent effluent as discharged. The Discharger may use a buffer only after obtaining written approval from the Executive Officer.

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 dates

      (2) Test initiation date

      (3) Test species

      (4) End point values for each dilution (e.g., number of young, growth rate, percent survival)

      (5) No Observed Effect Concentration (NOEC) values in terms of "percent effluent"

      (6) Inhibition Concentration (IC) values at IC_{15}, IC_{25}, IC_{40}, and IC_{50} (or Effective Concentration (EC) values at EC_{15}, EC_{25} ... etc.) in terms of "percent effluent"

      (7) Chronic Toxicity Units (TUc) values (100/NOEC, $100/IC_{25}$, or $100/EC_{25}$)

      (8) Mean percent mortality (±s.d.) after 96 hours in 100% effluent (if applicable)

      (9) NOEC and Lowest Observed Effect Concentration (LOEC) values for reference toxicant tests

      (10) IC_{50} or EC_{50} values for reference toxicant tests

      (11) Available water quality measurements for each test (pH, dissolved oxygen [DO], temperature, conductivity, hardness, salinity, ammonia)

   b. *Compliance Summary*. The results of the chronic toxicity testing shall be provided in the Self-Monitoring Report (SMR) 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 items listed above under 2.a, specifically item numbers (1), (3), (5), (6) (IC_{25} or EC_{25}), (7), and (8).

3. Chronic Toxicity Reduction Evaluation (TRE)

   a. To be ready to respond to toxicity events, the Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order. The Discharger shall review and update the work plan as necessary to remain current and applicable to the discharge and discharge facilities.

   b. Within 30 days of exceeding the trigger for accelerated monitoring, the Discharger shall submit to the Regional Water Board a specific TRE work plan, which should be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.

c. Within 30 days of the date of completion of the accelerated monitoring tests observed to exceed either trigger, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.

d. The TRE shall be specific to the discharge and be prepared in accordance with current technical guidance and reference materials, including USEPA guidance materials. The TRE shall be conducted as a tiered evaluation process, such as summarized below:

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

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

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

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

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

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

e. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (complying with requirements of Section IV.A.4 of this Order).

f. 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.

g. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources 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.

h. 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.

i. The Regional Water 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 Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

Not Applicable.

VII. RECLAMATION MONITORING REQUIREMENTS

Not Applicable.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall continue to participate in the Regional Monitoring Program for Trace Substances (RMP), which involves collection of data on pollutants and toxicity in water, sediment, and biota of the Estuary. The Discharger's participation and support of the RMP is used in consideration of the level of receiving water monitoring required by this Order.

IX. LEGEND FOR MRP TABLES

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

Frequency of Sampling

Cont.	=	Continuous
Cont/D	=	Continuous monitoring & daily reporting
H	=	Once each hour (at about hourly intervals)
2H	=	once every 2 hours
1/W	=	Once each week
2/W	=	Twice each week
4/W	=	Four times each week
1/M	=	Once each month
1/Q	=	Once each calendar quarter (at about three month intervals)
1/Y	=	Once each calendar year
2/Y	=	Twice each calendar year (at about 6 months intervals, once during dry season, once during wet season)

Parameter and Unit Abbreviations

BNA	=	Base, Neutral, Acid-extractable compounds
CBOD	=	Carbonaceous Biochemical Oxygen Demand
TUc	=	Chronic Toxicity Units
°C	=	Degrees Celsius
DO	=	Dissolved Oxygen
kg/d	=	Kilograms per day
kg/mo	=	Kilograms per month
µg/L	=	Micrograms per liter
mg/L	=	Milligrams per liter
MG	=	Million Gallons
MGD	=	Million Gallons per Day
MPN/100 mL	=	Most Probable Number per 100 milliliters
Metals	=	Multiple metals; See SMP Section VI.G.
% survival	=	Percent survival
s.u.	=	Standard units
TSS	=	Total Suspended Solids

VOC = Volatile Organic Compounds

X. OTHER MONITORING REQUIREMENTS

A. Pretreatment Requirements

The Discharger shall comply with the pretreatment requirements specified in Table E-5 for influent (A-001), effluent (E-001), and biosolids.

Table E-6. Pretreatment Monitoring Requirements

Constituents/EPA Method	Influent [1] (A-001)	Effluent [1] (E-001)	Biosolids
VOCs / 624 [2]	2/Y	2/Y	
BNA / 625 [3]	2/Y	2/Y	
Metals [4]	M	M	
Organophosphorus Pesticides	2/Y	2/Y	
Carbamate and Urea Pesticides	2/Y	2/Y	
Biosolids [5]			2/Y

Footnotes for Table E-6:

[1] Influent and effluent monitoring conducted in accordance with Tables E-3 and E-4 can be used to satisfy these pretreatment monitoring requirements.
[2] Volatile organic compounds.
[3] Base neutral, acid extractable compounds.
[4] Same USEPA method used to determine compliance with the respective NPDES permit. Analyses for metals shall include arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, selenium and cyanide.
[5] USEPA approved methods.

B. Biosolids Monitoring

The Discharger shall adhere to sludge monitoring requirements required by 40 CFR 503.

XI. MODIFICATIONS TO PART A OF SELF-MONITORING PROGRAM (ATTACHMENT G)

A. If any discrepancies exist between SMP Part A, August 1993 (Attachment G) and this MRP, this MRP prevails.

B. Modify SMP, Part A, as follows:

1. Sections C.3, C.4, and C.5 are satisfied by participation in the Regional Monitoring Program.

7. Section C.2.h of Part A:

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

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

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

ii. When bypassing the chlorination process grab samples at least daily for fecal coliform analysis, and continuous monitoring of flow.

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

12. Modify Section F.4 of Part A as follows:

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board in accordance with the requirements listed in Self-Monitoring Program, Part 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.

[And add at the end of Section F.4 the following:]

g. If the Discharger wishes to invalidate any measurement, the letter of transmittal will include identification of the measurement suspected to be invalid and notification of intent to submit, within 60 days, a formal request to invalidate the measurement, the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports the invalidation (e.g., laboratory sheet, log entry, test results, etc.), and discussion of the corrective actions taken or planned (with a time schedule for completion), to prevent recurrence of the sampling or measurement problem.

h. Reporting Data in Electronic Format

The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit SMRs electronically, the following shall apply:

1) Reporting Method: 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) and in the Progress Report letter dated December 17, 2000, or in a subsequently approved format that the Permit has been modified to include.

2) Monthly or Quarterly Reporting Requirements: For each reporting period (monthly or quarterly as specified in SMP Part B), an electronic SMR shall be submitted to the Regional Water Board in accordance with Section F.4.a-g. above. However, until U.S. EPA approves the electronic signature or other signature technologies, Dischargers that are using the ERS must submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, a violation report, and a receipt of the electronic transmittal.

3) Annual Reporting Requirements: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting an annual report electronically, but a hard copy of the annual report per Sections F.5.b, F.5.c, and F.5.d below shall be submitted.

XII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachments D and G) related to monitoring, reporting, and recordkeeping.

B. Self Monitoring Reports

1. At any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event that there will be service interruption for electronic submittal.

2. The Discharger shall submit monthly and annual SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order for each calendar month. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Monthly SMRs shall be due on the 30th day following the end of each calendar month, covering samples collected during that calendar month; Annual Reports shall be due on February 1 following each calendar year.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Day after permit effective date	All
Hourly	Day after permit effective date	Hourly
Daily	Day after permit effective date	Midnight through 11:59 PM or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1st day of calendar month through last day of calendar month

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31
Annually	January 1 following (or on) permit effective date	January 1 through December 31
Per Discharge Event	Anytime during the discharge event or as soon as possible after aware of the event	At a time when sampling can characterize the discharge event

4. The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL) as determined by the procedure in 40 CFR 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

      For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy ($\pm$ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected" or ND.

   d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

5. The Discharger shall submit SMRs in accordance with the following requirements:

   a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Plant is operating in compliance with effluent limitations in this Order. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic

submittal of data are required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned, and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

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

C. Discharge Monitoring Reports

1. As described in Section XII.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to one of the addresses listed below:

Standard Mail	FedEx/UPS/Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated will not be accepted unless they follow the exact same format of EPA Form 3320-1.

D. Other Reports

The Discharger shall report the results of any special studies, monitoring, and reporting required by Section VI.C.2 (Special Studies, Technical Reports, and Additional Monitoring Requirements) of

this Order with the first monthly SMR following the respective due date. The Discharger shall include a report of progress towards meeting compliance schedules established by section VI.C.2 of this Order in the annual SMR.

APPENDIX E-1
CHRONIC TOXICITY
DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

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

B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent 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 nonlethal, nonquantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA'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 **Appendix E-2**, attached, and use of the protocols referenced in those tables.

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 **Appendix E-2** (attached).

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.

3. Appropriate controls.

4. Concurrent reference toxicant tests.

5. Dilution series of 2%, 5%, 10%, 20%, and 40%, where "%" is percent effluent as discharged.

C. The Discharger shall submit a screening phase proposal acceptable to the Executive Officer. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharge shall commence with screening phase monitoring.

APPENDIX E-2
SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Critical Life Stage Toxicity Tests for Estuarine Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	*(Skeletonema costatum)* *(Thalassiosira pseudonana)*	Growth rate	4 days	1
Red alga	*(Champia parvula)*	Number of cystocarps	7–9 days	3
Giant kelp	*(Macrocystis pyrifera)*	Percent germination; germ tube length	48 hours	2
Abalone	*(Haliotis rufescens)*	Abnormal shell development	48 hours	2
Oyster Mussel	*(Crassostrea gigas)* *(Mytilus edulis)*	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	*(Strongylocentrotus purpuratus, S. franciscanus)* *(Dendraster excentricus)*	Percent fertilization	1 hour	2
Shrimp	*(Mysidopsis bahia)*	Percent survival; growth	7 days	3
Shrimp	*(Holmesimysis costata)*	Percent survival; growth	7 days	2
Topsmelt	*(Atherinops affinis)*	Percent survival; growth	7 days	2
Silversides	*(Menidia beryllina)*	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.

Critical Life Stage Toxicity Tests for Fresh Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	*(Pimephales promelas)*	Survival; growth rate	7 days	4
Water flea	*(Ceriodaphnia dubia)*	Survival; number of young	7 days	4
Alga	*(Selenastrum capricornutum)*	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.

Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay(2)	
	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(1) Marine/Estuarine	 0 4	 1 or 2 3 or 4	 3 0
Total number of tests	4	5	3

Footnotes:
(1) The freshwater species may be substituted with marine species if:
  a. The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or
  b. 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.
(2) a. Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.
  b. Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

ATTACHMENT F - FACT SHEET

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List of Tables

ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the South San Francisco and San Bruno Water Quality Control Plant (Plant) and its collection system.

Table F-1. Facility Information

WDID	2 417038001
Discharger	Cities of South San Francisco and San Bruno
Name of Facility	South San Francisco and San Bruno Water Quality Control Plant and Collection System
Facility Address	195 Belle Air Road
	South San Francisco, CA 94080
	San Mateo County
Facility Contact, Title, Phone	David Castagnola, Superintendent, (650) 829-3844
Authorized Person to Sign and Submit Reports	David Castagnola, Superintendent, (650) 829-3844
Mailing Address	Same as Facility Address
Billing Address	Same as Facility Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	N
Facility Permitted Flow	13 million gallons per day (MGD) average dry weather flow
Facility Design Flow	13 MGD (average daily dry weather treatment capacity)
Watershed	San Francisco Bay
Receiving Water	Lower San Francisco Bay
Receiving Water Type	Marine

A. The Cities of South San Francisco and San Bruno own and operate the Plant, which discharges to Lower San Francisco Bay through the North Bayside System Unit (NBSU) force main.

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

B. The Plant discharges treated wastewater through the NBSU force main into the deep-water channel of Lower San Francisco Bay, a water of the United States, and is currently regulated by Order No. R2-2003-0010 (NPDES Permit No. CA0038130), which was adopted on January 22, 2003.

The terms and conditions of Order No. R2-2003-0010 have been automatically continued past the Order's original expiration date of March 31, 2008, and remain in effect until new Waste Discharge Requirements (WDRs) and a new NPDES permit are adopted pursuant to this Order.

C. The Discharger filed a Report of Waste Discharge and submitted an application for renewal of its WDRs and NPDES permit on September 24, 2007.

II. FACILITY DESCRIPTION

A. Description of Wastewater Treatment

The Discharger owns and operates the Plant and its collection system, which provides primary and secondary treatment of domestic and commercial wastewater, serving a population of approximately 105, 900 in the Cities of South San Francisco and San Bruno. The Plant has an average daily dry weather design treatment capacity of 13 MGD and can treat up to 62 MGD during wet weather. The Discharger is a member of the North Bayside System Unit (NBSU), a joint powers authority that includes the Cities of Burlingame, Millbrae, South San Francisco, and San Bruno, and the San Francisco International Airport (both industrial and domestic waste treatment plants).

The Plant consists of bar screens, grit chambers, primary sedimentation, secondary aeration tanks, final clarifiers, and disinfection equipment. A treatment process schematic diagram is included as Attachment C.

Chlorinated secondary effluent enters the NBSU force main, where it combines with chlorinated treated wastewater from the other members of the NBSU. The combined effluent is dechlorinated at the Plant prior to discharge into Lower San Francisco Bay through the NBSU outfall (Discharge Point E-002), a submerged diffuser located northeast of Point San Bruno about 5,300 feet offshore at a depth of 20 feet below mean lower low water (37º 39' 55" N latitude and 122º 21' 41" W longitude).

During the previous permit term, the Discharger made improvements to its collection system to reduce the occurrences of sanitary sewer overflows (SSOs). With the completion of the infiltration and inflow (I/I) improvements and the upgrade of 2 major raw sewage pump stations, peak wet-weather flow at the treatment plant was increased to provide treatment for a 5-year storm of 60 MGD. The pumping capacity of two of the large raw sewage pump stations has been increased in order to draw down the levels of sewage and I/I in the collection system in order to prevent SSOs.

The Discharger also constructed a 7 million gallon effluent storage pond at the site of the former sludge drying beds to control the rate of discharge to the NBSU effluent pump station, which is equipped with five vertical turbine pumps having a maximum rated capacity of 64 MGD and a firm rated capacity (with the largest pump out of service) of 47 MGD.

Most stormwater captured within the Plant 's site is directed to the headworks of the Plant except for two locations where storm drains flow directly to Colma Creek. Stormwater discharge from the

Plant entrance and parking lots that are directed to the two storm drains are covered under the Statewide Industrial Storm Water Permit (NPDES General Permit No. CAS000001).

B. Discharge Points and Receiving Waters

The receiving water and the location of the NBSU discharge point are shown in Table F-2 below and Attachment B. Discharge Point E-002 is location where the combined effluent is discharged to Lower San Francisco Bay. Compliance monitoring for this Discharger for most parameters takes place at Monitoring Location E-001, as described in the attached MRP. A second compliance monitoring station (E-002) for the combined effluent, as described in the attached MRP, is located at the outfall prior to contact with the receiving water. Lower San Francisco Bay is located in the South Bay Basin watershed management area, between the Dumbarton Bridge and the San Francisco-Oakland Bay Bridge.

Table F-2. Outfall Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
E-002	POTW Effluent	37º 39' 55" N	122º 21' 41" W	Lower San Francisco Bay

C. Summary of Existing Requirements and Self-Monitoring Report Data

Effluent limitations contained in the previous Order (Order No. R2-2003-0010) for discharges to Lower San Francisco Bay and representative monitoring data from the term of Order No. R2-2003-0010 are as follows:

Table F-3. Effluent Limitations (Order No. R2-2003-0010) and Monitoring Data for Conventional and Non-Conventional Pollutants

Parameter	(units)	Effluent Limitations			Monitoring Data (From 01/02 to 05/08)		
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
Oil and Grease	mg/L	10	---	20	8.12	NA	35
pH	standard units	6.0 – 9.0			6.7 (min)	NA	8.0
Total Suspended Solids (TSS)	mg/L	30	45	---	19.04	26.71	72
Acute Toxicity	% survival	(1)	(1)	(1)	NA	NA	NA
Biochemical Oxygen Demand (BOD)	mg/L	30	45	---	36.76	53.86	128
Fecal Coliform	MPN/100 mL	(2)	(2)	(2)	56.96	NA	9,200
Chlorine, Total Residual (TRC)	mg/L	---	---	0.0 (3)	(4)	(4)	(4)
Settleable Matter	mL/L-hr.	0.1	---	0.2	3.5	NA	3.5

Footnotes for Table F-3:
mg/L = milligrams per liter
mL/L-hr = milliliters per liter per hour
Most Probable Number per 100 milliliters = MPN/100 mL
ND = Non-Detect
NA = Not Applicable

% survival = percent survival

(1) An 11-sample median value of not less than 90 percent survival and an 11-sample 90th percentile value of not less than 70 percent survival.

(2) The geometric mean for each calendar month shall not exceed 200 MPN/100 mL, and no more than 10 percent of the samples in each calendar month shall exceed 400 MPN/100 mL.

(3) For TRC, 0.0 mg/L was established as an instantaneous maximum effluent limitation.

(4) Compliance is measured at the NBSU outfall for all NBSU dischargers. TRC was not detected at the NBSU outfall over the time period covered in this table.

Table F-4. Effluent Limitations (Order No. R2-2003-0010) and Monitoring Data for Toxic Pollutants

Parameter	Units	Final Limits		Interim Limits		Monitoring Data (From 02/02 to 08/07)
		Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Highest Daily Concentration
Copper	µg/L	-----	-----	37	-----	14
Mercury	µg/L	-----	-----	-----	0.087	0.023
Nickel	µg/L	68	31	-----	-----	17
Silver	µg/L	22	5	-----	-----	1.3
Selenium	µg/L	-----	-----	17	-----	3.8
Zinc	µg/L	500	483	-----	-----	62
Cyanide	µg/L	-----	-----	10	-----	8.5
Dieldrin	µg/L	0.00028	0.00014	-----	-----	(0.002) (1)
4,4-DDE	µg/L	0.00119	0.00059	-----	-----	(0.003) (1)
Tributyltin	µg/L	-----	-----	0.045	-----	0.00873
Tetrachloroethylene	µg/L	178	89	-----	-----	1.5

Footnotes for Table F-4:

Units: µg/L = micrograms per liter

(1) Analyte not detected in effluent. Number in parenthesis is the method detection limit (MDL) as reported by the analytical laboratory.

D. Compliance Summary

1. **Compliance with Numeric Effluent Limits.** Exceedances of numeric effluent limits were observed during the permit term for total settleable solids, fecal coliform, and BOD. The exceedances are outlined below:

Table F-5. Numeric Effluent Exceedances

Date of Violation	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
January 30, 2003	Cyanide – Effluent Daily Maximum	µg/L	10	119
April 1, 2003	Oil and Grease – Effluent Daily Maximum	mg/L	20	35
July 1, 2003	Cyanide – Effluent Daily Maximum	µg/L	10	19
October 3, 2003	BOD – Effluent Weekly Average	mg/L	45	52
October 11, 2003	BOD – Effluent Weekly Average	mg/L	45	54
October 31, 2003	BOD – Effluent Monthly Average	mg/L	30	37
December 2, 2003	Acute Toxicity – An 11-Sample 90th Percentile Value Less Than 70% Survival	%	70	45
December 4, 2003	Acute Toxicity – An 11-Sample 90th Percentile Value Less Than 70% Survival	%	70	0
December 5, 2003	Acute Toxicity – An 11-Sample 90th Percentile Value Less Than 70% Survival	%	70	0
December 7, 2003	Acute Toxicity – An 11-Sample 90th Percentile Value	%	70	0

Date of Violation	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
	Less Than 70% Survival			
December 7, 2003	Acute Toxicity – An 11-Sample Median Value Less Than 90% Survival	%	90	75
January 5, 2005	Acute Toxicity – An 11-sample 90th percentile of Less Than 70% Survival	%	70	0
February 15, 2005	Total Settleable Solids - Effluent Daily Maximum	mL/L-hr	0.2	3.5
March 23, 2005	Fecal Coliform – 90th Percentile of last 10 Samples	MPN/100 mL	400	490
September 30, 2006	Oil & Grease – Average Monthly Effluent Limit	-----	10	11

Regional Water Board Enforcement Order R2-2002-0119 imposed Mandatory Minimum Penalties for violations incurred up until January 30, 2003. Regional Water Board Enforcement Order R2-2004-0075 imposed Mandatory Minimum Penalties for violations incurred between April 1, 2003 and October 31, 2003. State Water Board Notice of Violation for Mandatory Minimum Penalties issued a settlement for violations incurred between November 1, 2003 and March 31, 2008.

E. Planned Changes

No major changes are planned at the Plant at this time.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to the Clean Water Act (CWA) section 402 and implementing regulations adopted by the USEPA and Chapter 5.5, Division 7 of the CWC (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from the Plant to surface waters. This Order also serves as WDRs pursuant to CWC Article 4, Chapter 4, Division 7 (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Water Quality Control Plan for the San Francisco Bay Basin (the Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was adopted by the Regional Water Board and approved by the State Water Resources Control Board, USEPA, and the Office of Administrative Law. Requirements of this Order implement the Basin Plan.

The Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of the marine influence on receiving waters of San Francisco Bay, total dissolved solids levels in San Francisco Bay commonly (and often significantly) exceed 3,000 mg/L and thereby meet an exception to State Water Board Resolution No. 88-63. The designation MUN does not apply to Lower San Francisco Bay. Beneficial uses applicable to Lower San Francisco Bay are as follows:

Table F-6. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
E-002	Lower San Francisco Bay	Industrial Service Supply (IND) Navigation (NAV) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Ocean, Commercial and Sport Fishing (COMM) Wildlife Habitat (WILD) Preservation of Rare and Endangered Species (RARE) Fish Migration (MIGR) Shellfish Harvesting (SHELL) Estuarine Habitat (EST)

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority toxic pollutants, which are applicable to Lower San Francisco Bay.

3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP*).* The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes [40 CFR 131.21, 65 Fed. Reg. 24641 (April 27, 2000)]. Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final

rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

5. **Antidegradation Policy.** 40 CFR 131.12 requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16. Resolution 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

   The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. With limited exceptions discussed in section IV.D.2 of the Fact Sheet, the Order does not authorize increases in discharges of pollutants, in terms of mass or concentration, and therefore, will not result in a change in receiving water quality from the level of water quality ensured by the previous permit. Final effluent limitations limits in this Order comply with applicable State and federal antidegradation requirements and meet the requirements of the SIP. These limits hold the Discharger to performance levels that will neither cause nor contribute to water quality impairment, nor further water quality degradation.

   As antidegradation has been addressed, there will be no lowering of water quality beyond the current level authorized in the previous permit, which is the baseline by which to measure whether degradation will occur, and further analysis in this permit is unnecessary. Findings authorizing degradation are thus unnecessary.

6. **Anti-Backsliding Requirements.** CWA Sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

D. Impaired Water Bodies on CWA 303(d) List

In November 2006, the USEPA approved a revised list of impaired water bodies prepared by the State [hereinafter referred to as the 303(d) list], prepared pursuant to provisions of CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Lower San Francisco Bay is listed as an impaired waterbody for chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, and dioxin-like PCBs. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be consistent with total maximum daily loads and associated waste load allocations.

The Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list in Lower San Francisco Bay within the next ten years. (A TMDL for mercury was adopted February 12, 2008.)

TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, and will result in achieving the water quality standards for the

waterbodies. The discharge of mercury from the Plant is regulated by Regional Water Board Order No. R2-2007-0077, which implements the adopted mercury TMDL and contains monitoring and reporting requirements.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the NPDES regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where Reasonable Potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs may be established (1) using USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) using an indicator parameter for the pollutant of concern; or (3) using a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

Several specific factors affecting the development of limitations and requirements in this Order are discussed as follows.

A. Discharge Prohibitions

1. **Discharge Prohibition III.A (No discharge other than that described in this Order):** This prohibition is the same as in the previous permit and is based on CWC section 13260, which requires filing a Report of Waste Discharge (ROWD) before discharges can occur. Discharges not described in the ROWD, and subsequently in this Order, are prohibited.

2. **Discharge Prohibition III.B (Average dry weather flow not to exceed dry weather design capacity):** This prohibition is based on the design treatment capacity of the Plant. Exceedance of the Plant's average dry weather flow design capacity of 13 MGD may result in lowering the reliability of achieving compliance with water quality requirements.

3. **Discharge Prohibition III.C (No discharge receiving less than 10:1 dilution):** This prohibition is the same as in the previous permit and is based on Discharge Prohibition No. 1 from Table 4-1 of the Basin Plan, which prohibits discharges that do not receive a minimum 10:1 initial dilution. Further, this Order allows a 10:1 dilution credit in the calculation of some water quality based effluent limitations, and these limits would not be protective of water quality if the discharge did not actually achieve a 10:1 minimum initial dilution.

4. **Discharge Prohibition III.D (No bypass or overflow of untreated or partially treated wastewaters):** This prohibition grants bypass of peak wet weather flows above 30 MGD when recombined with secondary treatment flows and discharged at the combined outfall in accordance with the conditions at 40 CFR 122.41(m)(4)(i)(A)-(C).

Background
During significant storm events, high influent flows can overwhelm certain parts of the wastewater treatment process and may cause damage or failure of the system. Operators of wastewater treatment plants must manage these high flows to both ensure the continued operation of the treatment process and to prevent backups and overflows of raw wastewater in basements or on city streets. USEPA recognizes that peak wet weather flow diversions around secondary treatment units (blending) at POTW treatment plants serving separate sanitary sewer conveyance systems may be necessary in some circumstances.

In December 2005, USEPA invited public comment on a proposed Peak Wet Weather Policy that interprets 40 CFR 122.41(m) to apply to wet weather diversions recombined with flow from secondary treatment, and provides guidance regarding when the Regional Water Board may approved blending in an NPDES permit. The draft policy requires that dischargers must meet all the requirements of NPDES permits and encourages municipalities to make investments in ongoing maintenance and capital improvements to improve their system's long-term performance. While USEPA has not formally adopted the draft policy, the proposal is a useful tool for Regional Water Board consideration.

Criteria of 40 CFR 122.41(m)(4)(i)(A)-(C)
If the criteria of 40 CFR 122.41(m)(4)(i)(A)-(C) are met, the Regional Water Board can approve wet weather diversions that are recombined with flow from secondary treatment. The criteria of 40 CFR 122.41(m)(4)(i) (Federal Standard Provisions, Attachment D) are (A) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; (B) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime; and (C) the Discharger submitted notice to the Regional Water Board as required under Federal Standard Provision – Permit Compliance I.G.5.

On August 26, 2008, the Discharger submitted a No Feasible Alternatives Analysis that addresses measures it has taken and plans to take to reduce and eliminate bypasses during wet weather events so that such bypasses can be approved by 40 CFR 122.41(m)(4). During the past several years, the Discharger has undertaken sewer system improvements that have reduced the volume of storm flows to the treatment plant. The Discharger has implemented Phase II of the Plant's Wet Weather Improvements for replacing two major sanitary sewage pump stations. Those improvements began in 2004 and were completed in 2005. The Discharger also plans to continue improvements to the South San Francisco collection system to remediate or replace gravity and trunk lines and to reduce inflow and infiltration. The Discharger has also proposed the following actions, which are required by Provision VI.C.7:

- Minimize slug loading from industrial users through Pretreatment and Pollution Prevention Program prohibitions;
- Implement "enhanced primary treatment" through adding ferric chloride and anionic polymer to enhance settling in the primary clarifiers;
- Revise the South San Francisco Municipal Code to strengthen provisions relating to pretreatment, slug discharges, etc.;
- Implement the Capacity, Management, Operations, and Maintenance (C-MOM) Program.
- Install an ultrasonic level sensor and totalizer to better quantify volume of the bypassed primary effluent;

- Develop and implement operational guidelines for blending operations for primary effluent in chlorine contact tank no. 1 (CCT-1) to be routed back to the return activated sludge pump station for additional treatment; and
- Identify and implement wet weather procedures so flows up to 40 MGD will receive full secondary treatment.

The Discharger has satisfied the criteria of 40 CFR 122.41(m)(4)(i)(A-C). Bypasses are necessary to prevent sever property damage when flows exceed the capacity of the secondary treatment. The Discharger has analyzed alternatives to bypassing and has determined that no feasible alternatives exist at this time. The Discharger has submitted notice to the Regional Water Board as required under Federal Standard Provision – Permit Compliance I.G.5.

5. **Discharge Prohibition III. E (No sanitary sewer overflows to waters of the United States).** Discharge Prohibition No. 15 from Basin Plan Table 4-1, and the CWA prohibit the discharge of wastewater to surface waters except as authorized under an NPDES permit. POTWs must achieve secondary treatment, at a minimum, and any more stringent limitations necessary to achieve water quality standards [33 U.S.C. § 1311 (b)(1)(B and C)]. Therefore, a sanitary sewer overflow that results in the discharge of raw sewage, or sewage not meeting secondary treatment requirements, to surface waters is prohibited under the CWA and the Basin Plan.

B. Technology-Based Effluent Limitations

1. Scope and Authority

CWA section 301(b)(1)(B) requires USEPA to develop secondary treatment standards (the level of effluent quality attainable through application of secondary or equivalent treatment) for POTWs. USEPA promulgated such technology-based effluent guidelines for POTWs at 40 CFR 133. These Secondary Treatment Regulations include the following minimum requirements for POTWs, which are applicable to discharges from the Plant.

Table F-7. Secondary Treatment Requirements

	30-Day Average	7-Day Average
BOD [(1)]	30 mg/L	45 mg/L
TSS [(1)]	30 mg/L	45 mg/L
pH	6.0 – 9.0	

Footnotes for Table F-7:
(1) The 30 day average percent removal shall not be less than 85 percent.

2. Applicable Technology-Based Effluent Limitations

This Order retains the following technology-based effluent limitations, applicable to Discharge Point E-001, from Order No. R2-2003-0010.

Table F-8. Summary of Technology-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD_5	mg/L	30	45		---	---
TSS	mg/L	30	45		---	---
Oil and Grease	mg/L	10	---	20	---	---
pH	s.u.	---	---	---	6.0	9.0
Total Residual Chlorine	mg/L	---	---	---	---	0.0 (1)

Footnotes for Table F-8:
(1) Chlorine residual compliance are to be demonstrated by monitoring at the NBSU common outfall (E-002).

Effluent limitations for BOD and TSS, including the 85% removal requirement, are retained from Order No. R2-2003-0010. 40 CFR 122.45(d)(2) specifies that discharge limitations for POTWs shall be stated as average weekly limitations and average monthly limitations, unless impracticable.

The limitations established for Oil and Grease are levels attainable by secondary treatment and are required by the Basin Plan Table 4-2 for all discharges to inland surface waters and enclosed bays and estuaries of the San Francisco Bay Region.

The pH limitation is retained from Order No. R2-2003-0010 and is required by USEPA's Secondary Treatment Regulation at 40 CFR 133 and by Basin Plan Table 4-2 for deep water discharges.

This Order retains the instantaneous maximum limitation for chlorine of 0.0 mg/L, which is based on Basin Plan Table 4-2.

The technology-based effluent limitations for settleable matter are not retained from Order No. R2-2003-0010 as the Regional Water Board has determined that compliance with the Secondary Treatment Regulations at 40 CFR 133 and with Basin Plan Table 4-2 requirements for all discharges to inland surface waters and enclosed bays and estuaries of the San Francisco Bay Region will ensure removal of settleable solids to acceptably low levels below 0.1 mL/L-hr (30 day average) and 0.2 mL/L-hr (daily maximum).

3. Bacteria

a. Fecal Coliform: Effluent limitations for fecal coliform bacteria are retained from Order No. R2-2003-0010. These limitations reflect applicable water quality objectives for water contact recreation in established by Basin Plan Table 3-1 and are applied as end-of-pipe effluent limitations.

b. Enterococci: This Order establishes a technology-based effluent limitation for enterococci bacteria. This limitation is based on the enterococci concentration currently economically and technologically achievable by six other POTWs in the San Francisco Bay Region. This limitation is also consistent with the requirements of the Basin Plan at Table 4-2, footnote d, and with the BEACH Act of 2004 [40CFR 133.41(e)(1)]. This

effluent limitation will ensure that there are no "unacceptable adverse impacts on the beneficial uses" of lower San Francisco Bay.

Enterococci are more closely associated with gastrointestinal disease contracted by water contact than are fecal coliform bacteria. USEPA established bacteriological criteria for water contact recreation in coastal waters, including coastal estuaries such as San Francisco Bay, pursuant to the BEACH Act on November 16, 2004 (Federal Register, Volume 69, No. 220). This Order's effluent limitation on enterococci, a geometric mean of 35 MPN/100 mL, is equivalent to the BEACH Act's saltwater bacteriological criterion for water contact recreation.

Bacteria concentrations in sewage treatment plant effluent are primarily a function of disinfectant application, so the Discharger can meet this limitation with its existing technology. Because this technology-based limitation does not account for dilution in the receiving waters, it is likely to be conservative in terms of protecting beneficial uses, and therefore consistent with Basin Plan Table 4-2, footnote d.

Although USEPA also established single sample maximum criteria for enterococci bacteria, this Order implements only the geometric mean criterion of 35 MPN/100 mL. When these criteria were promulgated, USEPA expected that the single sample maximum values would be used for making beach notification and beach closure decisions. "Other than in the beach notification and closure decision context, the geometric mean is the more relevant value for assuring that appropriate actions are taken to protect and improve water quality because it is a more reliable measure, being less subject to random variation…" [Federal Register, Volume 69, No 220].

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

a. NPDES regulations at 40 CFR 122.44(d)(1)(i) require permits to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard (Reasonable Potential). The process for determining Reasonable Potential and, when necessary, calculating WQBELs is intended to (1) protect the designated beneficial uses of the receiving water specified in the Basin Plan and (2) achieve applicable Water Quality Objectives contained in the California Toxics Rule (CTR), National Toxics Rule (NTR), and the Basin Plan.

b. NPDES regulations and the SIP provide the basis to establish Maximum Daily Effluent Limitations (MDELs).

(1) NPDES Regulations. NPDES regulations at 40 CFR 122.45(d) state, "For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works."

(2) SIP. The SIP (page 8, Section 1.4) requires that WQBELs be expressed as MDELs and average monthly effluent limitations (AMELs). Since the SIP requires MDELs, not average weekly effluent limits, it is impracticable to impose average weekly effluent limits. MDELs are necessary to protect against acute water quality effects (e.g. for preventing fish kills or acute mortality to aquatic organisms).

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Water Quality Criteria (WQC) and Water Quality Objectives (WQOs) applicable to the receiving waters for this discharge are from the Basin Plan; the CTR, established by USEPA at 40 CFR 131.38; and the NTR, established by USEPA at 40 CFR 131.36. Some pollutants have WQC or WQOs established by more than one of these three sources.

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

b. CTR. The CTR specifies numeric aquatic life criteria for 23 toxic pollutants and numeric human health criteria for 57 toxic pollutants. These criteria apply to all inland surface waters and enclosed bays and estuaries of the San Francisco Bay Region, although Basin Plan Tables 3-3 and 3-4 contain numeric objectives for certain toxic pollutants that supersede the CTR criteria (except in the South Bay south of the Dumbarton Bridge).

c. NTR. The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento River Delta. These criteria apply to Lower San Francisco Bay, the receiving water for this Discharge.

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

The receiving water for this discharge, Lower San Francisco Bay, is a salt water environment based on salinity data generated through the Regional Monitoring Program for Trace Substances (RMP) at the Alameda (BB70), Oyster Point (BB30), and San Bruno Shoal (BB15) sampling stations between 1993 and 2001. In that period, the average salinity at the three sampling stations was 23.8 ppt; the minimum observed salinity levels were 12, 11, and 0.5 ppt. As salinity was greater than 10 ppt in at least 95 percent of these receiving water samples, the saltwater objectives from the Basin Plan, NTR, and CTR apply to this discharge.

f. Site-Specific Metals Translators. Because NPDES regulations at 40 CFR 122.45(c) require that effluent limitations for metals be expressed as total recoverable metal, and applicable WQOs for metals are typically expressed as dissolved metal, factors or translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. In the CTR, USEPA establishes default translators that are used in NPDES permitting activities; however, site-specific conditions, such as water temperature, pH, suspended solids, and organic carbon, greatly affect the form of metal (dissolved, filterable, or otherwise) that is present in the water and therefore available to cause toxicity. In general, the dissolved form of the metals is more available and more toxic to aquatic life than the filterable forms. Site-specific translators can be developed to account for site-specific conditions, thereby preventing exceedingly stringent or under protective WQOs.

For deep water discharges to Lower San Francisco Bay, the Regional Water Board used the following translators for copper and nickel, based on recommendations of the Clean Estuary Partnership's *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). In determining the need for and calculating WQBELs for all other metals, the Regional Water Board staff used thr default translators established by the USEPA in the CTR at 40 CFR 131.38(b)(2), Table 2.

Table F-9. Translators for Copper and Nickel for Deepwater Discharges of North of Dumbarton Bridge

Cu and Ni Translators for Deepwater Discharges to Lower San Francisco Bay	Copper		Nickel	
	AMEL Translator	**MDEL Translator**	**AMEL Translator**	**MDEL Translator**
	0.74	0.88	0.65	0.85

3. Determining the Need for WQBELs

NPDES regulations at 40 CFR 122.44(d)(1)(i) require permits to include WQBELs for all pollutants (non-priority and priority) "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 narrative or numeric criteria within a State water quality standard." Thus, assessing whether a pollutant has "Reasonable Potential" is the fundamental step in determining whether or not a WQBEL is required. For non-priority pollutants, Regional Water Board staff used available monitoring data, the receiving water's designated beneficial uses, and/or previous permit pollutant limitations to determine Reasonable Potential. For priority pollutants, Regional Water Board staff used the methods prescribed in Section 1.3 of

the SIP to determine if the discharge from the Plant demonstrates Reasonable Potential as described below in sections 3.a – 3.e.

a. Reasonable Potential Analysis (RPA)

Using the methods prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent data to determine if the discharge from the Plant demonstrates Reasonable Potential. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC in the NTR and CTR. The governing Basin Plan objectives and CTR criteria are shown in Table F-10.

b. Reasonable Potential Methodology

Using the methods and procedures prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent and background data and the nature of Plant's operations to determine if the discharge has Reasonable Potential to cause or contribute to exceedances of applicable WQOs and WQC. The RPA considers the maximum effluent concentration (MEC) for each pollutant based on existing data, while accounting for a limited data set and effluent variability. There are three triggers in determining Reasonable Potential.

(1) The first trigger is activated if the MEC is greater than or equal to the lowest applicable WQO (MEC ≥ WQO), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted WQO, then that pollutant has Reasonable Potential, and a WQBEL is required.

(2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO (B > WQO) and the pollutant is detected in any of the effluent samples (MEC > ND).

(3) The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQO. A limitation may be required under certain circumstances to protect beneficial uses.

c. Effluent Data

The Regional Water Board's August 6, 2001, letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (August 6, 2001 Letter – available online; see Standard Language and Other References Available Online, below) to all permittees, formally required the Discharger (pursuant to Section 13267 of the CWC) to initiate or continue monitoring for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. Regional Water Board staff analyzed these effluent data and the nature of the Plant to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Discharger from June 2005 through May 2008 for most inorganic pollutants, and from August 2003 through August 2007 for most organic pollutants.

d. Ambient Background Data

Ambient background values are used to determine reasonable potential and to calculate effluent limitations, when necessary. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for WQOs intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. The RMP station at Yerba Buena Island, located in the Central Bay, has been monitored for most of the inorganic (CTR constituent numbers 1–15) and some of the organic (CTR constituent numbers 16–126) toxic pollutants, and these data from the RMP were used as background data in performing the RPA for this discharge.

Not all the constituents listed in the CTR have been analyzed by the RMP. These data gaps are addressed by the August 6, 2001, Letter. The August 6, 2001, Letter formally requires Dischargers (pursuant to CWC Section 13267) to conduct ambient background monitoring and effluent monitoring for those constituents not currently monitored by the RMP, and to provide this technical information to the Regional Water Board.

On May 15, 2003, a group of several San Francisco Bay Region dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the *San Francisco Bay Ambient Water Monitoring Interim Report* (2003). This study includes monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not monitored by the RMP. The RPA was conducted and the WQBELs were calculated using RMP data from 1996 through 2003 for inorganics and organics at the Yerba Buena Island RMP station, and additional data from BACWA's *Ambient Water Monitoring: Final CTR Sampling Update* (2004) for the Yerba Buena Island RMP station.

e. Reasonable Potential Determination

The MECs, most stringent applicable WQOs, and background concentrations used in the RPA are presented in Table F-10, along with the RPA results (Yes or No) for each pollutant analyzed. Reasonable Potential was not determined for all pollutants as there are not applicable WQOs for all pollutants and monitoring data are not available for others. Based on a review of the effluent data collected during the previous permit term, the pollutants that exhibit Reasonable Potential (all by Trigger 1) are copper, nickel, cyanide, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, alpha-BHC, 4,4'-DDD, and total ammonia. The pollutants that exhibit Reasonable Potential (by Trigger 3) are dioxin-TEQ and tributyltin and are discussed in below in Sections C.4.d.(4) and (12).

Table F-10. Reasonable Potential Analysis Summary

CTR #	Priority Pollutants	MEC or Minimum DL [(a)(b)] (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL [(a)(b)] (µg/L)	RPA Results [(c)]
1	Antimony	**0.6**	4300	1.8	No
2	Arsenic	**4.1**	36	2.81	No
3	Beryllium	**0.007**	No Criteria	0.215	Ud

CTR #	Priority Pollutants	MEC or Minimum DL [(a)(b)] (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL [(a)(b)] (µg/L)	RPA Results [(c)]
4	Cadmium	**0.538**	9.4	0.16	No
5a	Chromium (III)	**5.39**	No Criteria	Not Available	Ud
5b	Chromium (VI)	**4.9**	50	4.4	Ud
6	**Copper**	**14**	4.2	2.55	**Yes**
7	Lead	**1.2**	8.5	0.80	No
8	Mercury (303d listed) [(d)]	---	---	---	---
9	**Nickel**	**17**	13	3.7	**Yes**
10	Selenium	**3.8**	5.0	0.39	No
11	Silver	**1.3**	2.2	0.052	No
12	Thallium	**0.06**	6.3	0.21	No
13	Zinc	**62**	86	5.1	No
14	**Cyanide**	**8.5**	2.9	< 0.4	**Yes**
15	Asbestos	< 0.1977	No Criteria	Not Available	Ud
16	2,3,7,8-TCDD (303d listed)	< 5.58E-07	1.4E-08	8.00E-08	No
	Dioxin TEQ (303d listed)	1.3E-06	1.4E-08	7.10E-08	**Yes**
17	Acrolein	< 1	780	< 0.5	No
18	Acrylonitrile	< 0.354	0.66	0.03	No
19	Benzene	< 0.176	71	< 0.05	No
20	Bromoform	< 0.219	360	< 0.5	No
21	Carbon Tetrachloride	< 0.148	4.4	0.06	No
22	Chlorobenzene	< 0.101	21000	< 0.5	No
23	Chlorodibromomethane	< 0.148	34	< 0.05	No
24	Chloroethane	< 0.232	No Criteria	< 0.5	Ud
25	2-Chloroethylvinyl ether	< 0.33	No Criteria	< 0.5	Ud
26	Chloroform	**5.8**	No Criteria	< 0.5	Ud
27	Dichlorobromomethane	**0.8**	46	< 0.05	No
28	1,1-Dichloroethane	< 0.11	No Criteria	< 0.05	Ud
29	1,2-Dichloroethane	< 0.167	99	0.04	No
30	1,1-Dichloroethylene	< 0.139	3.2	< 0.5	No
31	1,2-Dichloropropane	< 0.197	39	< 0.05	No
32	1,3-Dichloropropylene	< 0.158	1700	Not Available	No
33	Ethylbenzene	< 0.378	29000	< 0.5	No
34	Methyl Bromide	< 0.132	4000	< 0.5	No
35	Methyl Chloride	< 0.363	No Criteria	< 0.5	Ud
36	Methylene Chloride	**20**	1600	22	No
37	1,1,2,2-Tetrachloroethane	< 0.355	11	< 0.05	No
38	Tetrachloroethylene	**1.5**	8.85	< 0.05	No
39	Toluene	**2.6**	200000	< 0.3	No
40	1,2-Trans-Dichloroethylene	< 0.084	140000	< 0.5	No
41	1,1,1-Trichloroethane	< 0.29	No Criteria	< 0.5	Ud
42	1,1,2-Trichloroethane	< 0.172	42	< 0.05	No
43	Trichloroethylene	**0.9**	81	< 0.5	No
44	Vinyl Chloride	< 0.36	525	< 0.5	No
45	2-Chlorophenol	< 0.7	400	< 1.2	No
46	2,4-Dichlorophenol	< 0.15	790	< 1.3	No
47	2,4-Dimethylphenol	< 0.23	2300	< 1.3	No
48	2-Methyl- 4,6-Dinitrophenol	< 0.6	765	< 1.2	No
49	2,4-Dinitrophenol	< 0.21	14000	< 0.7	No
50	2-Nitrophenol	< 0.13	No Criteria	< 1.3	Ud
51	4-Nitrophenol	< 0.31	No Criteria	< 1.6	Ud
52	3-Methyl 4-Chlorophenol	< 0.13	No Criteria	< 1.1	Ud
53	Pentachlorophenol	< 0.52	7.9	< 1.0	No
54	Phenol	**100**	4600000	< 1.3	No

CTR #	Priority Pollutants	MEC or Minimum DL [(a)(b)] (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL [(a)(b)] (µg/L)	RPA Results [(c)]
55	2,4,6-Trichlorophenol	< 0.13	6.5	< 1.3	No
56	Acenaphthene	< 0.0153	2700	0.0019	No
57	Acenaphthylene	< 0.0119	No Criteria	0.00053	Ud
58	Anthracene	< 0.0001	110000	0.0005	No
59	Benzidine	< 1	0.00054	< 0.0015	No
60	Benzo(a)Anthracene	**0.0168**	0.049	0.0053	No
61	Benzo(a)Pyrene	< 0.0153	0.049	0.00029	No
62	Benzo(b)Fluoranthene	< 0.0153	0.049	0.0046	No
63	Benzo(ghi)Perylene	**1.1**	No Criteria	0.0027	Ud
64	**Benzo(k)Fluoranthene**	**1.2**	0.049	0.0015	**Yes**
65	Bis(2-Chloroethoxy)Methane	< 0.18	No Criteria	< 0.3	Ud
66	Bis(2-Chloroethyl)Ether	< 0.14	1.4	< 0.3	No
67	Bis(2-Chloroisopropyl)Ether	< 0.22	170000	Not Available	No
68	**Bis(2-Ethylhexyl)Phthalate**	**12**	5.9	0.091	**Yes**
69	4-Bromophenyl Phenyl Ether	< 0.2	No Criteria	< 0.23	Ud
70	Butylbenzyl Phthalate	**1.8**	5200	0.0056	No
71	2-Chloronaphthalene	< 0.18	4300	< 0.3	No
72	4-Chlorophenyl Phenyl Ether	< 0.11	No Criteria	< 0.3	Ud
73	**Chrysene**	**1.1**	0.049	0.0024	**Yes**
74	**Dibenzo(a,h)Anthracene**	**1.6**	0.049	0.00064	**Yes**
75	1,2-Dichlorobenzene	**0.5**	17000	< 0.8	No
76	1,3-Dichlorobenzene	**0.5**	2600	< 0.8	No
77	1,4-Dichlorobenzene	**2**	2600	< 0.8	No
78	3,3 Dichlorobenzidine	< 0.52	0.077	< 0.001	No
79	Diethyl Phthalate	**5.2**	120000	< 0.24	No
80	Dimethyl Phthalate	< 0.24	2900000	< 0.24	No
81	Di-n-Butyl Phthalate	**1**	12000	0.016	No
82	2,4-Dinitrotoluene	< 0.15	9.1	< 0.27	No
83	2,6-Dinitrotoluene	< 0.17	No Criteria	< 0.29	Ud
84	Di-n-Octyl Phthalate	< 0.29	No Criteria	< 0.38	Ud
85	1,2-Diphenylhydrazine	< 0.6	0.54	0.0037	No
86	Fluoranthene	< 0.0119	370	0.011	No
87	Fluorene	< 0.0168	14000	0.0035	No
88	Hexachlorobenzene	< 0.15	0.00077	0.000022	No
89	Hexachlorobutadiene	**0.36**	50	< 0.3	No
90	Hexachlorocyclopentadiene	< 0.36	17000	< 0.31	No
91	Hexachloroethane	< 0.2	8.9	< 0.2	No
92	**Indeno(1,2,3-cd)Pyrene**	**1.1**	0.049	0.004	**Yes**
93	Isophorone	< 0.15	600	< 0.3	No
94	Naphthalene	< 0.001	No Criteria	0.0026	Ud
95	Nitrobenzene	< 0.29	1900	< 0.25	No
96	N-Nitrosodimethylamine	< 0.8	8.1	< 0.3	No
97	N-Nitrosodi-n-Propylamine	< 0.14	1.4	< 0.001	No
98	N-Nitrosodiphenylamine	< 0.24	16	< 0.001	No
99	Phenanthrene	< 0.0168	No Criteria	0.0061	Ud
100	Pyrene	< 0.0001	11000	0.0194	No
101	1,2,4-Trichlorobenzene	**0.14**	No Criteria	< 0.3	Ud
102	Aldrin	< 0.002	0.00014	Not Available	No
103	**Alpha-BHC**	**0.03**	0.013	0.00050	**Yes**
104	Beta-BHC	< 0.003	0.046	0.00041	No
105	Gamma-BHC	< 0.002	0.063	0.00070	No
106	Delta-BHC	< 0.003	No Criteria	0.000053	Ud
107	Chlordane (303d listed)	< 0.02	0.00059	0.00018	No

CTR #	Priority Pollutants	MEC or Minimum DL [(a)(b)] (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL [(a)(b)] (µg/L)	RPA Results [(c)]
108	4,4'-DDT (303d listed)	< 0.003	0.00059	0.00017	No
109	4,4'-DDE (linked to DDT)	< 0.003	0.00059	0.00069	No
110	**4,4'-DDD**	**0.019**	0.00084	0.00031	**Yes**
111	Dieldrin (303d listed)	< 0.002	0.00014	0.00026	No
112	Alpha-Endosulfan	< 0.003	0.0087	0.000031	No
113	beta-Endolsulfan	< 0.003	0.0087	0.000069	No
114	Endosulfan Sulfate	< 0.002	240	0.000082	No
115	Endrin	< 0.002	0.0023	0.00004	No
116	Endrin Aldehyde	< 0.003	0.81	Not Available	No
117	Heptachlor	< 0.003	0.00021	0.000019	No
118	Heptachlor Epoxide	< 0.002	0.00011	0.000094	No
119-125	PCBs sum (303d listed)	< 0.01	0.00017	0.0015	No
126	Toxaphene	< 0.06	0.0002	Not Available	No
	Tributylin	0.0087	0.0074	0.002	**Yes**
	Total PAHs	**6.1**	15	0.051	No
	Total Ammonia (mg/L N)	**62**	1.52	0.21	**Yes**

Footnotes for Table F-10:

(a) The Maximum Effluent Concentration (MEC) and maximum background concentration are the actual detected concentrations unless preceded by a "<" sign, in which case the value shown is the minimum detection level (DL).

(b) The MEC or maximum background concentration is "Not Available" when there are no monitoring data for the constituent.

(c) A Results = Yes, if MEC > WQO/WQC, B > WQO/WQC and MEC is detected, or Trigger 3;
= No, if MEC and B are < WQO/WQC or all effluent data are undetected;
= Undetermined (Ud), if no objectives have been promulgated or there are insufficient data.

(d) Discharges of mercury to the San Francisco Bay are now regulated by Regional Water Board Order No. R2-2007-0077, which became effective March 1, 2008. Order No. R2-2007-0077 is a Watershed Permit that implements the San Francisco Bay Mercury TMDL and establishes wasteload allocations for industrial and municipal wastewater discharges of this pollutant. The discharge of mercury from the Plant is therefore still regulated by another means.

(1) Constituents with limited data. The Discharger has performed sampling and analysis for the constituents listed in the CTR. This data set was used to perform the RPA. In some cases, Reasonable Potential cannot be determined because effluent data are limited or ambient background concentrations are not available. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to this Order or to continue monitoring.

(2) Pollutants with no Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for these pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Discharger is required to investigate the source(s) of the increase(s) (See Provision VI.C.2.a of this Order). Remedial measures are required if the increases pose a threat to water quality in the receiving water.

Order No. R2-2003-0010 included WQBELs for silver, zinc, dieldrin, 4,4'-DDE, and tetrachloroethylene; however, because the RPA showed that discharges from the Plant no longer demonstrate Reasonable Potential for these pollutants, this Order does not retain the effluent limitations for these pollutants and does not establish new effluent limitations. This is consistent with State Water Board Order WQ 2001-16.

4. WQBEL Calculations.

a. Pollutants with Reasonable Potential

WQBELs were developed for the toxic pollutants that were determined to have reasonable potential to cause or contribute to exceedances of WQOs. The WQBELs were calculated based on appropriate WQOs and the appropriate procedures specified in Section 1.4 of the SIP. The WQOs used for each pollutant with Reasonable Potential are discussed in Section 4.d below.

b. Shallow/Deep Water Discharge

The discharge from the Plant to Lower San Francisco Bay is viewed as a deep water discharge, which is defined the Basin Plan defines as a discharge through a diffuser that receives a minimum initial dilution of 10 to 1.

c. Dilution Credit

The SIP provides the basis for a dilution credit. The Plant outfall (the NBSU outfall) is designed to achieve a minimum initial dilution of at least 10:1. Based on review of RMP data from local and Central Bay stations, there is variability in receiving water quality, and the hydrology of the receiving water is complex. There is uncertainty therefore regarding the representative nature of ambient background data for effluent limitation calculations. Pursuant to section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on a pollutant-by-pollutant basis…." The Regional Water Board finds that a conservative 10:1 (D=9) dilution credit for most toxic priority pollutants and a zero dilution credit for those pollutants, which Lower San Ftancisco Bay is 303(d) listed as impaired for, are necessary for protection of beneficial uses. The detailed basis for each are explained below.

(1) For certain pollutants, dilution credits are not included in calculating WQBELs. This decision is based on the concentrations of these pollutants in aquatic organisms, sediment, and the water column. The Clean Water Act 303(d) list was updated and approved by the Regional Water Board on October 25, 2006. For Lower San Francisco Bay, the Regional Water Board placed polychlorinated biphenyls (PCBs) on the 303(d) list. USEPA added dioxin and furan compounds, chlordane, dieldrin, and 4,4'-DDT to the 303(d) list. The reasoning for these decisions is based on the following factors that suggest there is no more assimilative capacity in San Francisco Bay for these pollutants.

Samples of tissue taken from fish in San Francisco Bay show the presence of these pollutants at concentrations greater than screening levels (*Contaminant Concentrations in Fish from San Francisco Bay*, May 1997). The Office of Environmental Health and Hazard Assessment (OEHHA) also completed a preliminary review of data in the 1994 San Francisco Bay pilot study, *Contaminated Levels in Fish Tissue from San Francisco Bay*. The results of the study also showed elevated levels of chemical contaminants in fish tissues. In December 1994, OEHHA issued an interim consumption advisory covering certain fish species in the San

Francisco Bay. This advisory is still in effect for exposure to sport fish that are found to be contaminated with dioxins and the pesticides mentioned above (e.g., DDT).

(2) For most other constituents (except ammonia, which is discussed below), a conservative allowance of 10:1 dilution has been assigned to protect beneficial uses and is retained from the previous permit. This 10:1 dilution ratio also follows the Basin Plan's prohibition Number 1, which prohibits discharges with less than 10:1 dilution. The dilution credit is also based on SIP provisions, Section 1.4.2, that consider the following:

(a) A far-field background station is appropriate because the receiving water body (Lower San Francisco Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. The SIP allows background to be determined on a discharge-by-discharge or water body-by-water body basis (SIP section 1.4.3). Consistent with the SIP, Regional Water Board staff chose to use a water body-by-water body basis because of the uncertainties inherent in accurately characterizing ambient background conditions in a complex estuarine system on a discharge-by-discharge basis.

(b) Because of the complex hydrology of the San Francisco Bay, a mixing zone has not been established. There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used to predict dilution have not considered the three-dimensional nature of the currents in the estuary resulting from the interaction of tidal flushes and seasonal fresh water outflows. Being heavier and colder than fresh water, ocean salt water enters San Francisco Bay on diurnal tidal cycles, generally beneath the warmer fresh water that flows seaward during wet seasons. When these waters mix and interact, complex circulation patterns occur throughout the Estuary but are most prevalent in the San Pablo, Carquinez Straight, and Suisun Bay areas. The locations of this mixing and interaction change, depending on the strength of each tide and variable rate of delta outflow. Additionally, sediment loads from the Central Valley change on a longer term basis, affecting the depth of different parts of San Francisco Bay and resulting in alteration of flow patterns and mixing and dilution achieved at an outfall.

(c) The SIP allows a limited mixing zone and dilution credit for persistent pollutants. Discharges to the San Francisco Bay are defined by the SIP as incompletely mixed discharges. Thus, dilution credit should be determined using site-specific information. Section 1.4.2.2 of the SIP specifies that the Regional Water Board shall "significantly limit a mixing zone and dilution credit as necessary. … For example, in determining the extent of a mixing zone or dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are … persistent." The SIP defines persistent pollutants as "substances for which degradation or decomposition in the environment is nonexistent or very slow." The pollutants at issue here are persistent pollutants (e.g., copper). The dilution studies that estimate initial dilution do not address the effects of these persistent pollutants in the San Francisco Bay environment, such as their long term effects

on sediment concentrations. Though this concern does not apply to non-persistent pollutants like ammonia, a conservative dilution credit is still appropriate because of the lack of near field receiving water data for most pollutants.

(4) Estimated actual initial dilution levels have been used to calculate the effluent limits for ammonia, a non-persistent pollutant that is rapidly dispersed and degraded to a non-toxic state. As part of a study to estimate hydrodynamic impacts on San Francisco Bay by the proposed extension to San Francisco International Airport runways, a dilution study was completed on behalf of the NBSU in December 2000.

NBSU effluent is pumped through a 60 inch pipe to a 654-foot diffuser section located approximately 5,200 feet offshore from Point San Bruno, at a depth 20 feet below mean lower low water. The diffuser consists of 66 three-inch openings spaced 7 feet apart. At a point in the immediate vicinity of the diffuser, a 74:1 instantaneous dilution was calculated using the CORMIX model to estimate mixing of the effluent under tidal conditions. At a point approximately 1.5 km from the diffuser (to the east), a dilution ratio of 270:1 was estimated. In calculating the WQBELs (maximum daily and average monthly), the lowest dilution rate from the December 2000 dilution study [74:1 (or D = 73)] was used.

d. Calculation of Pollutant-Specific WQBELs

WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of applicable WQOs. The WQBELs were calculated based on appropriate WQOs and the appropriate procedures specified in Section 1.4 of the SIP. The WQOs used for each pollutant with Reasonable Potential are discussed below.

(1) Copper

(a) Copper WQC. The chronic and acute marine WQC for copper from the Basin Plan and the CTR are 3.1 and 4.8 micrograms per liter (µg/L), respectively, expressed as dissolved metal. Regional Water Board staff converted these WQC to total recoverable metal using the site-specific translators of 0.74 (chronic) and 0.88 (acute), as recommended by the Clean Estuary Partnership's (CEP) *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). The resulting chronic water quality criterion of 4.2 µg/L and acute water quality criterion of 5.5 µg/L were used to perform the RPA.

(b) RPA Results. This Order establishes effluent limitations for copper because the MEC of 13 µg/L exceeds the WQC for copper, demonstrating Reasonable Potential by Trigger 1.

(c) Copper WQBELs. WQBELs are calculated based on the CTR's WQC and the site-specific WQOs documented in the *Copper Site-Specific Objectives in San Francisco Bay: Proposed Basin Plan Amendment and Draft Staff Report*, dated June 6, 2007. Both sets of criteria are expressed as total recoverable metal using the site-specific translators and water effects ratio (WER) of 2.4. The Regional Water Board adopted Basin Plan Amendment Resolution R2-2007-0042. Upon its

effective date, the alternate SSO limitations shall supersede those copper limitations listed in Table 7 of this Order.

The following table compares effluent limitations for copper calculated according to SIP procedures (and a coefficient of variation (CV) of 0.16) using the two sets of criteria described above. The limitations take into account the deep water nature of the discharge, and are therefore based on an initial dilution of 10 to 1.

Table F-11. Effluent Limitations for Copper

Effluent Limitations for Copper		
	AMEL	**MDEL**
Based on CTR Criteria	73 µg/L	92 µg/L
Based on Proposed SSOs	55 µg/L	69 µg/L

(d) Immediate Compliance Feasible. Statistical analysis of effluent data for copper, collected over the period of June 2005 through May 2008, shows that the 95th percentile (12 µg/L) is less than the AMEL (73 µg/L); the 99th percentile (14 µg/L) is less than the MDEL (92 µg/L); and the mean (9.7 µg/L) is less than the long term average of the projected normal distribution of the effluent data set after accounting for effluent variability (65 µg/L). The Regional Water Board concludes therefore that immediate compliance with these effluent limitations is feasible; Final effluent limitations based on the CTR criteria will become effective on the effective date of this Order.

(e) Alternate Limitations for Copper. As described in the CEP's *North of Dumbarton Bridge Copper and Nickel Site-Specific Objective Determination* (December 2004), the Regional Water Board proposed site-specific criteria for copper in non-ocean, marine waters of the Region. Proposed SSOs for copper are 2.5 and 3.9 µg/L as four-day and one-hour average (i.e., chronic and acute) criteria, respectively. If these SSOs for copper become effective, effluent limitations, calculated according to Section 1.4 of the SIP, using a WER of 2.4, would be an AMEL of 55 µg/L and an MDEL of 69 µg/L. Therefore, the alternate effluent limitations will become effective, as long as the SSOs and their current justification remain unchanged.

(f) Antibacksliding. Antibacksliding requirements are satisfied as Order No. R2-2003-0010 did not include final effluent limitations for copper.

(2) Nickel

(a) Nickel WQC. The most stringent applicable WQC criteria for nickel, expressed as dissolved metal, are acute and chronic criteria from the CTR of 74 and 8.2 µg/L, respectively, established for protection of aquatic life. Regional Water Board staff converted these WQC to total recoverable metal using the site-specific translators of 0.65 µg/L (chronic) and 0.85 µg/L (acute), as recommended by the CEP's *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (2005). The resulting chronic WQC of 13 µg/L and acute WQC of 87 µg/L were used to perform the RPA.

(b) RPA Results. This Order establishes effluent limitations for nickel because the MEC of 17 µg/L exceeds the applicable WQC for this pollutant, demonstrating Reasonable Potential by Trigger 1.

(c) Nickel WQBELs. WQBELs for nickel, calculated according to SIP procedures (and a CV of 0.59), are an AMEL of 31 µg/L and an MDEL of 68 µg/L. These limitations take into account the deep water nature of the discharge and are therefore based on a minimum initial dilution of 10 to 1. The newly calculated limitations for nickel are equal to the effluent limitations established in the previous permit (Order No. R2-2003-0010).

(d) Immediate Compliance Feasible. Statistical analysis of effluent data for nickel, collected over the period of June 2005 through May 2008, shows that the 95th percentile (13 µg/L) is less than the AMEL (31 µg/L); the 99th percentile (17 µg/L) is less than the MDEL (68 µg/L); and the mean (5.3 µg/L) is less than the long term average of the actual distribution of the effluent data (49 µg/L). The Regional Water Board concludes that immediate compliance with these effluent limitations is feasible.

(**e) Antibacksliding**. Antibacksliding requirements are satisfied, as the effluent limitations for nickel are the same as those established by Order No. R2-2003-0010.

(3) Cyanide

(a) Cyanide WQC. The most stringent applicable WQC criteria for cyanide are an acute criterion of 9.4 µg/L from the Basin Plan Table 3-3 for protection of marine aquatic life in San Francisco Bay. These site-specific criteria were established by Regional Water Board Order No. R2-2006-0086 and approved by USEPA on July 22, 2008.

(b) RPA Results. This Order establishes effluent limitations for cyanide because the MEC of 8.5 µg/L exceeds the governing WQC of 2.9 µg/L, demonstrating Reasonable Potential by Trigger 1.

(c) Cyanide WQBELs. Final WQBELs for cyanide, calculated according to SIP procedures (and a CV of 0.66), are an AMEL of 20 µg/L and an MDEL of 43 µg/L. These limitations take into account the deep water nature of the discharge and are therefore based on a minimum initial dilution of 10 to 1.

(d) Immediate Compliance Feasible. Statistical analysis of effluent data for cyanide collected over the period of May 2005 through May 2008, shows that the 95th percentile (7 µg/L) is less than the AMEL (20 µg/L); the 99th percentile (10 µg/L) is less than the MDEL (43 µg/L); and the mean (3 µg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (13 µg/L). Based on this analysis, the Regional Water Board concludes that immediate compliance with these WQBELs for cyanide is feasible.

(**e) Antibacksliding**. Antibacksliding requirements are satisfied because Order No. R2-2003-0010 did not include final effluent limitations for cyanide.

(4) Dioxin-TEQ

(a) WQC. The Basin Plan narrative WQO for bioaccumulative substances states:

> *Many pollutants can accumulate on particulates, in sediments, or bioaccumulate 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.*

Because it is the consensus of the scientific community that dioxins and furans associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms, the Basin Plan's narrative bioaccumulation WQO is applicable to these pollutants. Elevated levels of dioxins and furans in fish tissue in San Francisco Bay demonstrate that the narrative bioaccumulation WQO is not being met. USEPA has therefore included the Lower San Francisco Bay as impaired by dioxin and furan compounds in the current 303(d) listing of receiving waters where WQOs are not being met after imposition of applicable technology-based requirements.

The CTR establishes a numeric WQO for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 1.4×10^{-8} µg/L for the protection of human health, when aquatic organisms are consumed. When the CTR was promulgated, USEPA stated its support of the regulation of other dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs) in NPDES permits. For California waters, USEPA stated specifically, "if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBELs for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme." [65 Fed. Reg. 31682, 31695 (2000)] This procedure, developed by the World Health Organization (WHO) in 1998, uses a set of toxicity equivalency factors (TEFs) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-TCDD. The CTR criterion is used as a criterion for dioxin-TEQ,.

To determine if the discharge of dioxin or dioxin-like compounds from the South San Francisco and San Bruno WPCP has reasonable potential to cause or contribute to a violation of the Basin Plan's narrative bioaccumulation WQO, Regional Water Board staff used TEFs to express the measured concentrations of 16 dioxin congeners in effluent and background samples as a toxicity weighted concentration equivalent to 2,3,7,8-TCDD. These "equivalent" concentrations were then compared to the CTR numeric criterion for 2,3,7,8-TCDD (1.4×10^{-8} µg/L) thus translating the narrative bioaccumulation objective into a numeric criterion appropriate for the RPA. Although the 1998 WHO scheme includes TEFs for dioxin-like PCBs, they were not considered in this Order's version of

the TEF procedure. The CTR includes a specific WQC for dioxin-like PCBs, and they are considered independently in the analysis of total PCBs.

(b) RPA Results. This Order establishes effluent limitations for dioxin-TEQ because the MEC (1.3×10^{-6} µg/L) exceeds the translated Basin Plan narrative objective (the CTR numeric water quality criterion) for 2,3,7,8-TCDD (1.4×10^{-8} µg/L). The maximum observed ambient background concentration of dioxin-TEQ in San Francisco Bay (7.1×10^{-8} µg/L) also exceeds the CTR numeric water quality criterion for 2,3,7,8-TCDD. Both of these facts are comparable to Trigger 1 and Trigger 2; therefore, this Order established RP based on Trigger 3.

(c) WQBELs. WQBELs for dioxin–TEQ, calculated using SIP procedures and the CTR WQC for 2,3,7,8-TCDD as guidance (and a default CV of 0.6), are an AMEL of 1.4×10^{-8} µg/L and an MDEL of 2.8×10^{-8} µg/L. Because Lower San Francisco Bay is impaired by dioxins and furans, no assimilative capacity exists, and these limitations are calculated without credit for dilution.

(d) Immediate Compliance Infeasible. The Discharger's Feasibility Study asserts that the Plant cannot immediately comply with these WQBELs for dioxin-TEQ. With insufficient effluent data to determine the distribution of the effluent data set or to calculate a mean and standard deviation, feasibility to comply with effluent limitations is determined by comparing the MEC (1.3×10^{-6} µg/L) to the AMEL (1.4×10^{-8} µg/L) and the MDEL (2.8×10^{-8} µg/L). Based on this comparison, the Regional Water Board concurs with the Discharger's assertion of infeasibility to comply

(e) Need for a Compliance Schedule. Because the Discharger cannot immediately comply with the WQBELs, this Order includes a compliance schedule based on a new interpretation of the narrative objective as authorized by State Water Board Resolution No. 2008-0025, *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, which was approved by USEPA on August 27, 2008.

(f) Antibacksliding. Antibacksliding requirements are satisfied, as Order R2-2003-0010 did not include a final effluent limitation for dioxin-TEQ.

(g) Interim Effluent Limitations. A interim effluent limitation is granted for dioxin-TEQ since the Discharger has demonstrated and the Regional Water Board staff has verified that it is infeasible to immediately comply with the final WQBELs. Order No. R2-2003-0010 did not include a final effluent limitation for dioxin-TEQ and there are insufficient data to statistically determine a performance based interim limitation. Therefore, Regional Water Board staff propose that the interim limit be the MEC (1.3×10^{-6} µg/L).

This Order requires further monitoring for dioxin-TEQ in the effluent to support the development of a meaningful interim limitation in the future. This monitoring requirement will remain in effect for ten years following the effective date of this Order. The Regional Water Board may amend these limits based in new information or a TMDL for dioxin-TEQ.

(5) Benzo(k)fluoranthene.

(a) Benzo(k)fluoranthene WQC. The most stringent applicable WQC for benzo(k)fluoranthene is the CTR criterion for protection of human health of 0.049 µg/L.

(b) RPA Results. This Order establishes effluent limitations for benzo(k)fluoranthene because the MEC (1.2 µg/L) exceeds the most stringent applicable criterion (0.049 µg/L), demonstrating reasonable potential by Trigger 1.

(c) Benzo(k)fluoranthene WQBELs. WQBELs for benzo(k)fluoranthene, calculated according to SIP procedures (and a default CV of 0.60), are an AMEL of 0.48 µg/L and an MDEL of 0.97 µg/L. These limitations take into account the deep water nature of the discharge and are therefore based on a minimum initial dilution of 10 to 1.

(d) Immediate Compliance Feasible. The Discharger's Feasibility Study asserts that the Plant can immediately comply with WQBELs. The Discharger believes the single occurrence of benzo(k)fluoranthene in the last 5 years was an anomaly. The Regional Water Board accepts the Discharger's assertion.

(e) Antibacksliding. Antibacksliding requirements are satisfied because limitations for benzo(k)fluoranthene were not included in the previous Order.

(6) Bis(2-ethylhexyl)phthalate.

(a) Bis(2-ethylhexyl)phthalate WQC. The most stringent applicable WQC for bis(2-ethylhexyl)phthalate is the CTR criterion for protection of human health of 5.9 µg/L.

(b) RPA Results. This Order finds reasonable potential and thus establishes effluent limitations for bis(2-ethylhexyl)phthalate because the MEC (12 µg/L) exceeds the most stringent applicable criterion (5.9 µg/L), demonstrating reasonable potential by Trigger 1.

(c) Bis(2-ethylhexyl)phthalate WQBELs. WQBELs for bis(2-ethylhexyl)phthalate, calculated according to SIP procedures (and a default CV of 0.60), are an AMEL of 58 µg/L and an MDEL of 117 µg/L. These limitations take into account the deep water nature of the discharge and are therefore based on a minimum actual dilution of 10 to 1.

(d) Immediate Compliance Feasible. With insufficient data to determine the distribution of the data set or to calculate a mean and standard deviation, feasibility to comply with final effluent limitations is determined by comparing the MEC (12 µg/L) to the AMEL (58 µg/L) and the MDEL (117 µg/L). Based on this comparison, the Regional Water Board concludes that immediate compliance with the WQBELs is feasible.

(e) Antibacksliding. Antibacksliding requirements are satisfied because limitations for bis(2-ethylhexyl)phthalate were not included in the previous Order.

(7) Chrysene.

(a) Chrysene WQC. The most stringent applicable WQC for chrysene is the CTR criterion for protection of human health of 0.049 µg/L.

(b) RPA Results. This Order finds reasonable potential and thus establishes effluent limitations for chrysene because the MEC (1.1 µg/L) exceeds the most stringent applicable criterion (0.049 µg/L), demonstrating reasonable potential by Trigger 1.

(c) Chrysene WQBELs. WQBELs for chrysene, calculated according to SIP procedures (and a default CV of 0.60), are an AMEL of 0.48 µg/L and an MDEL of 0.96 µg/L. These limitations take into account the deep water nature of the discharge and are therefore based on a minimum initial dilution of 10 to 1.

(d) Immediate Compliance Feasible. The Discharger's Feasibility Study asserts that the Plant can immediately comply with final WQBELs for chrysene. The Discharger believes the single occurrence of chrysene in the last 5 years was an anomaly. The Regional Water Board accepts the Discharger's assertion.

(e) Antibacksliding. Antibacksliding requirements are satisfied because limitations for chrysene were not included in the previous Order.

(8) Dibenzo(a,h)anthracene.

(a) Dibenzo(a,h)anthracene WQC. The most stringent applicable WQC for dibenzo(a,h)anthracene is the CTR criterion for protection of human health of 0.049 µg/L.

(b) RPA Results. This Order finds reasonable potential and thus establishes effluent limitations for dibenzo(a,h)anthracene because the MEC (1.6 µg/L) exceeds the most stringent applicable criterion (0.049 µg/L), demonstrating reasonable potential by Trigger 1.

(c) Dibenzo(a,h)anthracene WQBELs. WQBELs for dibenzo(a,h)anthracene, calculated according to SIP procedures (and a default CV of 0.60), are an AMEL of 0.49 µg/L and an MDEL of 0.98 µg/L. The limitations take into account the deep water nature of the discharge and are based on an initial dilution of 10 to 1.

(d) Immediate Compliance Feasible. The Discharger's Feasibility Study asserts that the Plant can immediately comply with the WQBELs. The Discharger believes the two occurrences of dibenzo(a,h)anthracene in the last 5 years were anomalies. The Regional Water Board accepts the Discharger's assertion.

(e) Antibacksliding. Antibacksliding requirements are satisfied because final limitations for dibenzo(a,h)anthracene were not included in the previous Order.

(9) Indeno(1,2,3-cd)pyrene.

(a) Indeno(1,2,3-cd)pyrene WQC. The most stringent applicable WQC for indeno(1,2,3-cd)pyrene is the CTR criterion for protection of human health of 0.049 µg/L.

(b) RPA Results. This Order finds reasonable potential and thus establishes effluent limitations for indeno(1,2,3-cd)pyrene because the MEC (1.1 µg/L) exceeds the most stringent applicable criterion (0.049 µg/L).

(c) Indeno(1,2,3-cd)pyrene WQBELs. WQBELs for indeno(1,2,3-cd)pyrene, calculated according to SIP procedures (and a default CV of 0.60), are an AMEL of 0.48 µg/L and an MDEL of 0.96 µg/L. These limitations take into account the deep water nature of the discharge, and are therefore based on an initial dilution of 10 to 1.

(d) Immediate Compliance Feasible. The Discharger's Feasibility Study asserts that the Plant can immediately comply with the WQBELs. The Discharger believes the two occurrences of dibenzo(a,h)anthracene in the last 5 years were anomalies. The Regional Water Board accepts the Discharger's assertion.

(e) Antibacksliding. Antibacksliding requirements are satisfied because limitations for indeno(1,2,3-cd)pyrene were not included in the previous Order.

(10) Alpha-BHC.

(a) Alpha-BHC WQC. The most stringent applicable WQC for alpha-BHC is the CTR criterion for protection of human health of 0.013 µg/L.

(b) RPA Results. This Order finds reasonable potential and thus establishes effluent limitations for alpha-BHC because the MEC (0.030 µg/L) exceeds the most stringent applicable criterion (0.013 µg/L).

(c) Alpha-BHC WQBELs. WQBELs for alpha-BHC, calculated according to SIP procedures (and a default CV of 0.60), are an AMEL of 0.13 µg/L and an MDEL of 0.26 µg/L. The WQBEL calculations take into account the deep water nature of the discharge and therefore are based on an initial dilution of 10:1.

(d) Immediate Compliance Feasible. The Discharger's Feasibility Study asserts that the Plant can immediately comply with the WQBELs. The Discharger believes the single occurrence of alpha-BHC in the last 5 years was an anomaly. The Regional Water Board concurs with the Discharger's assertion.

(e) Antibacksliding. Antibacksliding requirements are satisfied because limitations for alpha-BHC were not included in the previous Order.

(11) 4,4'-DDD.

(a) 4,4'-DDD WQC. The most stringent applicable WQC for 4,4'-DDD is the CTR criterion for protection of human health of 0.00084 µg/L.

(b) RPA Results. This Order finds reasonable potential and thus establishes effluent limitations for 4,4'-DDD because the MEC (0.019 µg/L) exceeds the most stringent applicable criterion (0.00084 µg/L), demonstrating reasonable potential by Trigger 1.

(c) 4,4'-DDD WQBELs. WQBELs for 4,4'-DDD, calculated according to SIP procedures (and a default CV of 0.60), are an AMEL of 0.00084 µg/L and an MDEL of 0.0017 µg/L. No credit for dilution was granted because 4,4'-DDD is degradation product of DDT, which is 303(d) listed for Lower San Francisco Bay.

(d) Immediate Compliance Feasible. The Discharger's Feasibility Study asserts that the Plant can immediately comply with WQBELs. The Discharger believes the single occurrence of 4,4'-DDD in the last 5 years was an anomaly. The Regional Water Board accepts the Discharger's assertion.

(e) Antibacksliding. Antibacksliding requirements are satisfied because final limitations for 4,4'-DDD were not included in the previous Order.

(12) Tributyltin.

(a) Tributyltin WQC. The Basin Plan contains a narrative WQO for toxicity: "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses in aquatic organisms." This narrative WQO applies to tributyltin because the pollutant is a toxic biocide that is problematic in the aquatic environment. USEPA has developed water quality criteria for tributyltin through its authority under Section 304(a) of the CWA [Ambient Aquatic Life Water Quality Criteria for Tributyltin (TBT) – Final EPA-822-R-03-031, December 2003]. The Regional Water Board has used USEPA's recommended criteria for tributyltin (0.042 µg/L and 0.0074 µg/L - acute and chronic criteria, respectively) to interpret the Basin Plan's narrative objective for toxicity and, therefore, to perform the RPA for tributyltin.

(b) RPA Results. Because the MEC (0.0087 µg/L) exceeds the most stringent, USEPA recommended criterion for tributyltin (0.0074 µg/L), this Order finds reasonable potential for the discharge to cause or contribute to exceedances of the Basin Plan narrative objective for toxicity. Therefore, this Order establishes effluent limitations for tributyltin.

(c) Tributyltin WQBELs. WQBELs for tributyltin, calculated according to SIP procedures (and a CV of 0.69), are an AMEL of 0.045 µg/L and an MDEL of 0.095 µg/L. These limitations take into account the deep water nature of the discharge and are therefore based on an initial dilution of 10:1.

(d) Immediate Compliance Feasible. Statistical analysis of effluent data for tributyltin, collected over the period of August 2003 through February 2008, shows that the 95th percentile (0.0066 µg/L) is less than the AMEL (0.045 µg/L); the 99th percentile (0.010 µg/L) is less than the MDEL (0.095 µg/L); and the mean (0.0031 µg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability

(0.027 µg/L). The Regional Water Board concludes that immediate compliance with the WQBELs for tributyltin is feasible.

(e) Antibacksliding. Antibacksliding requirements are satisfied because limitations for tributyltin were not included in the previous Order.

(13) Ammonia.

(a) Ammonia WQO. The Basin Plan contains WQOs for un-ionized ammonia of 0.025 milligrams per liter (mg/L) as an annual median, and 0.4 mg/L as a maximum for the Lower San Francisco Bay. Regional Water Board staff translated these WQOs for un-ionized ammonia to equivalent total ammonia concentrations (as nitrogen) since (1) sampling and laboratory methods are not available to analyze for un-ionized ammonia and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on the pH, salinity, and temperature of the receiving water. To translate the Basin Plan un-ionized ammonia objective, Regional Water Board staff used pH, salinity, and temperature data from 1994 through 2002 from the nearest RMP station to the outfall, the Oyster Point station (BB30). Regional Water Board staff used the following equations to determine the fraction of total ammonia that would exist in the toxic un-ionized form in the receiving water [*Ambient Water Quality Criteria for Ammonia* (saltwater) – 1989, EPA Publication 440/5-88-004, USEPA, 1989]:

$$\text{For salinity} > 10 \text{ ppt: fraction of } NH_3 = \frac{1}{1+10^{(pK-pH)}}$$

Where:

pK = 9.245 + 0.116*(I) + 0.0324*(298-T) + 0.0415*(P)/(T+273)
I = the molal ionic strength of saltwater = 19.9273*(S)/(1000-1.005109*S)
S = Salinity (parts per thousand)
T = Temperature in degrees Celsius
P = Pressure (one atmosphere)

To convert the Basin Plan's chronic un-ionized ammonia WQO to an equivalent total ammonia concentration, the median un-ionized ammonia fraction at the Oyster Point monitoring station was used. To convert the Basin Plan's acute un-ionized ammonia WQO to an equivalent total ammonia concentration, the 90th percentile un-ionized ammonia fraction at the Oyster Point RMP station was used. Using the 90th percentile and median to express the acute and chronic un-ionized ammonia WQOs as equivalent total ammonia concentrations is consistent with USEPA guidance, as expressed by USEPA in *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion* (EPA Publication Number 823-B-96-007, 1996). The equivalent total ammonia acute and chronic WQOs are 14 mg/L and 1.5 mg/L, respectively.

(b) RPA Results. This Order establishes effluent limitations for total ammonia because the MEC of 62 mg/L exceeds the translated WQO for this pollutant, demonstrating Reasonable Potential by Trigger 1.

(c) Ammonia WQBELs. To set limitations for toxic pollutants Basin Plan Section 4.5.5.2 indicates that WQBELs shall be calculated according to the SIP. Section 3.3.20 of the Basin Plan refers to ammonia as a toxic pollutant; therefore, it is consistent with the Basin Plan to use the SIP methodology to determine and establish effluent limitations for ammonia. The total ammonia WQBELs, calculated according to SIP procedures (and a CV of 0.39) and a dilution credit of 74:1 (D=73) are an AMEL of 110 mg/L and an MDEL of 230 mg/L.

To calculate total ammonia limits, some statistical adjustments were made because the Basin Plan's chronic WQO for un-ionized ammonia is based on an annual median, while chronic criteria are usually based on a 4-day average; also, the SIP assumes a monthly sampling frequency of 4 days per month to calculate effluent limitations based on chronic criteria. To use the SIP methodology to calculate effluent limits for a Basin Plan objective that is based on an annual median, an averaging period of 365 days and a monitoring frequency of 30 days per month (the maximum daily sampling frequency in a month since the averaging period for a chronic criterion is longer than 30 days) were used. These statistical adjustments are supported by USEPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia*; published on December 22, 1999, in the Federal Register.

Following the SIP methodology as guidance, Regional Water Board staff used the maximum ambient background total ammonia concentration to calculate effluent limitations based on the acute criterion, and the median background total ammonia concentration to calculate effluent limitations based on the chronic criterion. Because the Basin Plan's chronic un-ionized ammonia objective is an annual median, the median background concentration is more representative of ambient conditions than a daily maximum.

The estimated actual initial dilution of 74:1(D=73) was used to calculate the effluent limitations for ammonia because ammonia, a non-persistent pollutant, is quickly dispersed and degraded to a non-toxic state, and cumulative toxicity effects are unlikely. The actual initial dilution was modeled as part of an engineering study titled *Modeling of Potential Impacts of The New Runway Reconfiguration on the NBSU Outfall* (December 12, 2000) performed by the Airfield Development Engineering Consultant on behalf of the NBSU as part of a larger study to estimate hydrodynamic impacts on San Francisco Bay by the proposed airport runway extension.

(d) Immediate Compliance Feasibility. Statistical analysis of effluent data for total ammonia collected over the period of April 2003 through May 2008 shows that the 95th percentile (52 mg/L) is less than the AMEL (113 mg/L); the 99th percentile (58 mg/L) is less than the MDEL (226 mg/L); and the mean (30 mg/L) is less than the long-term average of the projected non-parametric effluent data set after accounting for effluent variability (100 mg/L). Based on this comparison, the Regional Water Board concludes that immediate compliance with the WQBELs is feasible.

(e) Antibacksliding. Antibacksliding requirements are satisfied because limitations for total ammonia were not included in the previous Order.

e. Effluent Limit Calculations

The following table summarizes the calculation of WQBELs for copper, nickel, cyanide, dioxin-TEQ, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, alpha-BHC, 4,4-DDD, tributyltin, and total ammonia.

Table F-12. Effluent Limit Calculations

PRIORITY POLLUTANTS	Copper		Nickel	Cyanide	Dioxin TEQ	Benzo(k) Fluoranthene
Units	ug/L		ug/L	ug/L	ug/L	ug/L
Basis and Criteria type	BP & CTR SW Aq Life	Alternate limits using SSOs (December 2004)	BP & CTR SW Aq Life	BP SSOs	BP Narrative	CTR HH
CTR Criteria -Acute	5.5	-----	87	9.4	-----	-----
CTR Criteria -Chronic	4.2	-----	13	2.9	-----	-----
SSO Criteria -Acute (December 2004) (Diss.)		3.9				
SSO Criteria -Chronic (December 2004) (Diss.)		2.5				
Water Effects ratio (WER)	2.4	2.4	1	1	1	1
Lowest WQO	4.2		13	2.9	1.4E-08	0.049
Site Specific Translator - MDEL	0.88	0.88	0.85			
Site Specific Translator - AMEL	0.74	0.74	0.65			
Dilution Factor (D) (if applicable)	9	9	9	9	0	9
No. of samples per month	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	N	N
HH criteria analysis required? (Y/N)	N	N	Y	Y	Y	Y
Applicable Acute WQO	13	11	87	9.4		
Applicable Chronic WQO	10	8.1	13	2.9		
HH criteria	-----	-----	4,600	220,000	1.4E-08	0.049
Background (Maximum Conc for Aquatic Life calc)	2.55	2.55	3.73	0.4		
Background (Average Conc for Human Health calc)	-----	-----	1.79	0.4	1.1E-07	7.75E-04
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	N	N	Y	N
ECA acute	108.0	83.4	837	90.4		
ECA chronic	77.6	58.1	93	25.4		
ECA HH			45984	2199996	1.4E-08	4.83E-01
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	Y	Y
Avg of effluent data points	9.7	9.7	5.3	3		
Std Dev of effluent data points	1.5	1.5	3.1	2		
CV calculated	0.16	0.16	0.59	0.66	N/A	N/A
CV (Selected) - Final	0.16	0.16	0.59	0.66	0.60	0.60
ECA acute mult99	0.70	0.70	0.33	0.30		
ECA chronic mult99	0.83	0.83	0.53	0.50		
LTA acute	76	58	273	26.91		
LTA chronic	65	48	49	12.72		
minimum of LTAs	65	48	49	13		
AMEL mult95	1.1	1.1	1.5	1.61	1.55	1.55
MDEL mult99	1.4	1.4	3.1	3.36	3.11	3.11
AMEL (aq life)	73	55	76	20.43		
MDEL(aq life)	92	69	151	42.72		
MDEL/AMEL Multiplier	1.3	1.3	2.0	2.09	2.01	2.01
AMEL (human hlth)			45984	2199996	1.4E-08	4.8E-01
MDEL (human hlth)			91541	4599392	2.8E-08	9.7E-01
minimum of AMEL for Aq. life vs HH	73	55	76	20	1.4E-08	4.8E-01
minimum of MDEL for Aq. Life vs HH	92	69	151	43	2.8E-08	9.7E-01
Current limit in permit (30-day average)	-----	-----	31	-----	-----	-----
Current limit in permit (daily)	37 (Interim)	37 (Interim)	68	10 (Interim)	-----	-----
Final limit - AMEL	73	55	31	20	1.4E-08	0.48
Final limit - MDEL	92	69	68	43	2.8E-08	0.97
Max Effl Conc (MEC)	14	14	17	8.5	1.3E-06	1.2

PRIORITY POLLUTANTS	Chrysene	Dibenzo(a,h) Anthracene	Indeno(1,2,3-cd) Pyrene	alpha-BHC	4,4-DDD	Total Ammonia (acute)	Total Ammonia (chronic)	Tributyltin
Units	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L N	mg/L N	ug/L
Basis and Criteria type	CTR HH	CTR HH	CTR HH	CTR HH	CTR HH	Basin Plan Aquatic Life	Basin Plan Aquatic Life	BP Toxicity Narrative
CTR Criteria -Acute	-----	-----	-----	-----	-----	-----	-----	-----
CTR Criteria -Chronic	-----	-----	-----	-----	-----	-----	-----	-----
SSO Criteria -Acute (December 2004) (Diss.)						-----	-----	-----
SSO Criteria -Chronic (December 2004) (Diss.)						-----	-----	-----
Water Effects ratio (WER)	1	1	1	1	1	1	1	1
Lowest WQO	0.049	0.049	0.049	0.013	0.00084	14.45	1.52	0.0074
Site Specific Translator - MDEL						-----	-----	-----
Site Specific Translator - AMEL						-----	-----	-----
Dilution Factor (D) (if applicable)	9	9	9	9	0	73	73	9
No. of samples per month	4	4	4	4	4	4	30	4
Aquatic life criteria analysis required? (Y/N)	N	N	N	N	N	Y	Y	Y
HH criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	N	N	N
Applicable Acute WQO						14.45		0.42
Applicable Chronic WQO							1.52	0.0074
HH criteria	0.049	0.049	0.049	0.013	0.00084			
Background (Maximum Conc for Aquatic Life calc)						0.21	0.10	0.002
Background (Average Conc for Human Health calc)	1.00E-03	2.78E-04	1.49E-03	2.42E-04	1.14E-04			
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	N	N	Y	N	N	N
ECA acute						1054		4.182
ECA chronic							105.2	0.056
ECA HH	4.81E-01	4.87E-01	4.77E-01	1.28E-01	8.40E-04			
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	Y	Y	Y	Y	N	N	N
Avg of effluent data points						30	30	0.0031
Std Dev of effluent data points						12	12	0.0021
CV calculated	N/A	N/A	N/A	N/A	N/A	0.39	0.39	0.69
CV (Selected) - Final	0.60	0.60	0.60	0.60	0.60	0.39	0.39	0.69
ECA acute mult99						0.444		0.29
ECA chronic mult99							0.953	0.49
LTA acute						468.0		1.20
LTA chronic							100	0.027
minimum of LTAs						468.0	100	0.027
AMEL mult95	1.55	1.55	1.55	1.55	1.55	-----	1.12	1.64
MDEL mult99	3.11	3.11	3.11	3.11	3.11	-----	2.25	3.50
AMEL (aq life)						-----	112.57	0.045
MDEL(aq life)						-----	225.81	0.095
MDEL/AMEL Multiplier	2.01	2.01	2.01	2.01	2.01	-----	2.01	2.14
AMEL (human hlth)	4.8E-01	4.9E-01	4.8E-01	1.3E-01	8.4E-04			0
MDEL (human hlth)	9.6E-01	9.8E-01	9.6E-01	2.6E-01	1.7E-03			0
minimum of AMEL for Aq. life vs HH	4.8E-01	4.9E-01	4.8E-01	1.3E-01	8.4E-04	-----	113	0.045
minimum of MDEL for Aq. Life vs HH	9.6E-01	9.8E-01	9.6E-01	2.6E-01	1.7E-03	-----	226	0.095
Current limit in permit (30-day average)	-----	-----	-----	-----	-----	-----	-----	-----
Current limit in permit (daily)	-----	-----	-----	-----	-----	-----	-----	-----
Final limit - AMEL	0.48	0.49	0.48	0.128	0.00084	-----	113	0.045
Final limit - MDEL	0.96	0.98	0.96	0.256	0.0017	-----	226	0.095
Max Effl Conc (MEC)	1.1	1.6	1.1	0.030	0.019	-----	62	0.00873

5. Whole Effluent Toxicity

The Basin Plan requires dischargers to either conduct flow-through effluent toxicity tests or perform static renewal bioassays (Chapter 4, Acute Toxicity) to measure the toxicity of wastewaters and to assess negative impacts upon water quality and beneficial uses caused by the aggregate toxic effect of the discharge of pollutants. This Order includes effluent limitations for whole effluent acute toxicity. Compliance evaluation is based on 96-hour

static-renewal bioassays. All bioassays shall be performed according to the USEPA-approved method in 40 CFR Part 136, currently *"Methods for Measuring the Acute Toxicity of Effluents and Receiving Water, 5th Edition."*

D. Anti-Backsliding and Anti-Degradation

1. **Effluent Limitations Retained from Order No. R2-2003-0010**. Limitations for the following parameters are retained and are unchanged from Order No. R2-2003-0010.

   - Oil and grease
   - pH
   - BOD_5 and TSS
   - Total residual chlorine
   - 85% removal requirement for BOD and TSS
   - Fecal coliform bacteria
   - Acute toxicity

   Retaining effluent limitations for these parameters in this Order ensures that these limitations are at least as stringent as those in Order No. R2-2003-0010, meeting anti-backsliding requirements of the CWA. Retaining effluent limitations for these parameters also ensures that the existing receiving water quality will not be degraded in terms of these parameters, meeting anti-degradation.

2. **New Effluent Limitations**. Final concentration-based limitations for the following parameters were not contained in Order No. R2-2003-0010 and are established by this Order.

   - Copper
   - Cyanide
   - Dioxin-TEQ
   - Benzo(k)fluoranthene
   - Bis(2-ethylhexyl)phthalate
   - Chrysene
   - Dibenzo(a,h)anthracene
   - Indeno(1,2,3-cd)pyrene
   - alpha-BHC
   - 4,4'-DDD
   - Ammonia

   The establishment of effluent limitations for these pollutants effectively creates limitations that are more stringent than in Order No. R2-2003-0010, therefore meeting applicable anti-backsliding requirements and ensuring that the existing quality of the receiving water will not be degraded meeting anti-degradation requirements. The copper, cyanide, and tributyltin effluent limits in this order are new final limits. Although these new final limits are higher than the interim limits in Order No. R2-2003-0010 for copper and cyanide, interim limits and final limits are not comparable for purposes of complying with antibackslidding requirements.

3. **More Stringent Effluent Limitations**. No limitations established by Order No. R2-2003-0010 are made more stringent by this Order.

4. **Effluent Limitations Not Retained from Order No. R2-2003-0010.** Final limitations for the following parameters are not retained by this Order.

   - Settleable matter
   - Mercury
   - Lead
   - Silver
   - Selenium
   - Zinc
   - 4,4'-DDE
   - Dieldrin

   This Order does not retain effluent limitations for settleable matter. For the Plant, like other facilities achieving secondary or more advanced levels of treatment, compliance with the requirements of 40 CFR 133 and of Basin Plan Table 4-2 will also ensure removal of settleable solids to acceptably low levels - below 0.1 mL/L-hr (30-day average) and 0.2 mL/L-hr (daily maximum).

   The previous permit included an interim effluent limitation for mercury, which is not retained by this Order, because discharges of mercury to the San Francisco Bay are now regulated by Regional Water Board Order No. R2-2007-0077, which became effective March 1, 2008. Order No. R2-2007-0077 is a Watershed Permit that implements the San Francisco Bay Mercury TMDL and establishes wasteload allocations for industrial and municipal wastewater discharges of this pollutant. The Plant discharge of mercury is therefore regulated by another means. Order No. R2-2007-0077 was established to be consistent with anti-backsliding and antidegradation requirements.

   Order No. R2-2003-0010 included effluent limitations for lead, silver, zinc, 4,4'-DDE and dieldrin; however, because the RPA showed that Plant discharges no longer demonstrate a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for these pollutants, this Order does not retain these limitations. Elimination of WQBELs for lead, silver, zinc, 4,4'-DDE and dieldrin is consistent with State Water Board Order WQ 2001-16.

5. **Effluent Limitations Higher Than in Order No. R2-2003-0010.** Limitations for the following parameters are higher than in the previous Order.

   - Cyanide
   - Copper

   The final effluent limits for cyanide are higher than the previous interim effluent limit in Order No. 01-143. The previous interim effluent limitation for cyanide has not been retained, and this Order establishes less stringent (final) limitations for cyanide based on newly effective (July 22, 2008) site-specific water quality objectives. The Regional Water Board has determined that implementation of the newly established site-specific water quality

objectives for cyanide in the San Francisco Bay is consistent with applicable antidegradation requirements. [See *Staff Report on Proposed Site-Specific Water Quality Objectives and Effluent Limit Policy for Cyanide for San Francisco Bay* (December 4, 2006)]. Backsliding requirements are satisfied because Order No. R2-2003-0010 did not include final effluent limitations for cyanide. This conclusion is based, in part, on assumed implementation of a cyanide action plan (See Order Section VI.C.10).

Both the effluent limits for copper that will take effect with this Order, and the alternate effluent limits for copper based on site-specific objectives (SSOs) to take effect if the SSOs become effective, are higher than the current interim limits. The standards-setting process for the copper SSOs addressed antidegradation, concluding that water quality would not be degraded [See *Copper Site-Specific Objectives in San Francisco Bay: Proposed Basin Plan Amendment and Draft Staff Report,* June 6, 2007]. This conclusion was based on assumed implementation of a copper action plan (See Order Section VI.C.9). To ensure that the new, higher copper limits that will take effect immediately also comply with anti-degradation policies, the copper action plan is required as soon as the Order becomes effective.

Backsliding requirements are satisfied because Order No. R2-2003-0010 did not include final effluent limitations for copper.

E. Land Discharge Specifications

Not Applicable

F. Reclamation Specifications

Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations are retained from Order No. R2-2003-0010 and reflect applicable water quality standards from the Basin Plan.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The principal purposes of a monitoring and reporting program by a discharger are to:

- document compliance with waste discharge requirements and prohibitions established by the Regional Water Board;
- facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge;
- develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards; and to
- prepare water and wastewater quality inventories.

The Monitoring and Reporting Program is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms, specifies

general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the CWC, and Regional Water Board's policies. The Monitoring and Reporting Program also defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

A. Influent Monitoring

Influent monitoring requirements for BOD_5 and TSS allow determination of compliance with this Order's 85 percent removal requirement.

B. Effluent Monitoring

The MRP retains most effluent monitoring requirements from the previous permit. Changes in effluent monitoring are summarized as follows.

- Monitoring for settleable matter is no longer required, because the effluent limitation for this parameter has not been retained by this Order.

- Monthly and/or semi-annual monitoring for silver, selenium, zinc, dieldrin, and tetrachloroethylene is no longer required because these pollutants no longer demonstrate reasonable potential. Monthly monitoring for mercury is no longer required under this MRP because the discharge of mercury from the Plant is now regulated by Regional Water Board Order No. 2007-0077.

- Routine effluent monitoring for benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, alpha-BHC, and 4,4'-DDD (priority toxic pollutants with effluent limitations established by this Order) is established by this Order. Monitoring for all other priority toxic pollutants must be conducted in accordance with methods described in the August 6, 2001 Letter. Routine effluent monitoring for ammonia is also required.

- Monitoring for and compliance with effluent chlorine residual requirements at E-002 is the City of South San Francisco's responsibility as part of their NBSU Outfall duties and authorities.

C. Bypasses or Sewer Overflow Monitoring

Monitoring to record observations related to bypasses or sewer overflows is required by the Self-Monitoring Plan Part A (Attachment G).

D. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Chronic whole effluent toxicity testing is required twice per year in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

E. Receiving Water Monitoring

On April 15, 1992, the Regional Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program for Trace Substances (RMP) for San Francisco Bay. Subsequent to a public hearing and various meetings, Regional Water Board staff requested under authority of CWC section 13267 that major permit holders in the San Francisco Bay region report on the water quality of the San Francisco Estuary. These permit holders responded to this request by participating in a collaborative effort through the RMP. 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.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions (Provision VI.A)

Standard Provisions, which in accordance with 40 CFR 122.41and 122.42 apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachments D and G of this Order.

B. Monitoring and Reporting Requirements (Provision VI.B)

The Discharger is required to monitor the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP (Attachment E) and Standard Provisions and SMP, Part A (Attachment G), of this Order. This provision requires compliance with these documents and is based on 40 CFR 122.63.

The Standard Provisions and SMP, Part A, are standard requirements in almost all NPDES permits issued by the Regional Water Board, including this Order. They contain definitions of terms, specify general sampling and analytical protocols, and set out requirements for reporting spills, violations, and routine monitoring data in accordance with NPDES regulations, the CWC, and Regional Water Board's policies. The MRP contains a sampling program specific for the Plant. It defines sampling stations and frequencies, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs.

C. Special Provisions (Provision VI.C)

1. Reopener Provisions

These provisions are based on 40 CFR 123 and allow modification of this Order and its effluent limitations as necessary in response to updated WQOs that may be established in the future.

2. Special Studies and Additional Monitoring Requirements

a. Effluent Characterization Study. This Order does not include effluent limitations for constituents addressed in the August 6, 2001 Letter that do not demonstrate Reasonable Potential, but this provision requires the Discharger to continue monitoring for these

pollutants as described in the August 6, 2001 Letter and as specified in the MRP. If concentrations of these constituents increase significantly, the Discharger is required to investigate the source of the increases and establish remedial measures if the increases result in reasonable potential to cause or contribute to an excursion above the applicable WQOs. This provision is based on the Basin Plan and the SIP.

b. Ambient Background Receiving Water Study. This provision is based on the Basin Plan, the SIP, and the August 6, 2001 Letter for priority pollutant monitoring. As indicated in this Order, this requirement may be met by participating in a collaborative study.

c. Optional Mass Offset Plan: This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to Lower San Francisco Bay. If the Discharger wishes to pursue a mass offset program, a mass offset plan for reducing 303(d)-listed pollutants to the same receiving water needs to be submitted for Regional Water Board approval. The Regional Water Board will consider any proposed mass offset plan and amend this Order accordingly.

3. Best Management Practices and Pollution Minimization Program

This provision is based on Chapter 4 of the Basin Plan and Section 2.4.5 of the SIP.

4. Construction, Operation, and Maintenance Specifications

a. Wastewater Facilities, Review and Evaluation, Status Reports: This provision is based on Order No. R2-2003-0010 and the Basin Plan.

b. Operations and Maintenance Manual, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR 122, and Order No. R2-2003-0010.

c. Contingency Plan, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR 122 and Order No. R2-2003-0010.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Pretreatment Program. This provision is based on 40 CFR 403 and carried over from the previous permit.

b. Sludge Management Practices Requirements: This provision is based on the Basin Plan (Chapter IV), and 40 CFR §§257 and 503, and the previous permit.

c. Sanitary Sewer Overflows and Sewer System Management Plan: This provision is to explain this Order's requirements as they relate to the Discharger's conveyance system and to promote consistency with the State Water Board-adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Overflow (SSO WDRs) and a related Monitoring and Reporting Program (Order No. 2006-0003-DWQ).

6. Corrective Measures to Eliminate Use of the Nearshore Outfall

This provision is based on Discharge Prohibition III.A and C and Chapter 4 of the Basin Plan, which prohibits discharges that do not receive an initial 10:1 dilution. During very high

wet weather flows, secondary-treated wastewater is sometimes discharged from the nearshore outfall. The Discharger reported using the outfall once during the most recent permit term. The Discharger's No Feasible Alternatives Analysis submitted on August 26, 2008, primarily addresses blending during wet weather conditions, but also identifies options for eliminating the need for the shallow water discharge. One option is use of an effluent storage pond during wet weather events.

The schedule to implement these alternatives has been established to ensure future discharges to the nearshore outfall do not occur; it does not allow discharges to the nearshore outfall at any time. Any discharge of wastewater from the nearshore outfall is a violation of Discharge Prohibitions III.A and C.

7. Corrective Measures to Minimize Blending

This provision is based on 40 CFR 122.41(m)(4) as detailed in section IV.A.4 of this Fact Sheet. According to the Discharger's No Feasible Alternatives Analysis submitted on August 28, 2008, four blending events have occurred since 2002. The primary effluent bypassed from one of those events was recovered and sent back to the aeration basins for full secondary treatment. The Discharger's No Feasible Alternatives Analysis also indicates that elimination or reduction of blending is currently infeasible in the short-term. This provision is necessary to ensure that the Discharger implements corrective measures to minimize or eliminate blending consistent with 40 CFR 122.41(m). This provision also requires the Discharger to submit another No Feasible Alternatives Analysis 180 days prior to the Order expiration date to provide a current assessment for the need to blend.

8. Compliance Schedule

The compliance schedule and the requirement to submit reports on further measures to reduce concentrations of dioxin-TEQ to ensure compliance with final limits are based on State Water Board Resolution No. 2008-0025, *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, which was approved by the U.S. EPA on August 27, 2008. This Order includes a compliance schedule and discharge specifications for dioxin-TEQ..

A maximum compliance schedule is reasonable for dioxin-TEQ, because of the considerable uncertainty in determining effective measures (e.g., pollution prevention, treatment upgrades) that should be implemented to ensure compliance with final limitations. In the Regional Water Board's view, it is appropriate to allow the Discharger sufficient time to explore source control measures before requiring it to propose further actions, such as treatment plant upgrades, that are likely to be much more costly. This approach is supported by the Basin Plan (section 4.13), which states, "In general, it is often more economical to reduce overall pollutant loading into treatment systems than to install complex and expensive technology at the plant."

9. Action Plan for Copper

The action plan for copper is needed with this Order because the copper limit is higher than in the last permit. Implementation is needed to ensure that any increase in copper limits would be consistent with anti-degradation policies (i.e. the limits would not degrade the

quality of the receiving water). The copper action plan is required with this permit, before the SSO will go into effect triggering the action plan requirement, because this permit has a higher copper effluent limit than the previous permit. Therefore, early implementation of a copper action plan will ensure consistency with anti-degradation policies.

10. Action Plan for Cyanide

This provision is based on the Basin Plan Amendment that establishes SSOs for cyanide for San Francisco Bay (Regional Water Board Resolution R2-2006-0086). The cyanide SSO Basin Plan amendment requires an action plan for source control to ensure compliance with anti-degradation policies.

The Discharger is required to implement monitoring and surveillance, pretreatment, source control, and pollution prevention for cyanide in accordance a Regional Water Board letter dated August 8, 2008, entitled, *Alternate Cyanide Effluent Limitations Effective, Requirement for Cyanide Action Plan, and Requirement for Influent Monitoring*. Task 1 of the letter requires the Discharger to submit an inventory of potential contributors of cyanide to the treatment plant (e.g., metal plating operations, hazardous waste recycling, etc.). Task 1 is suppose to be complete 90 days from the date of the letter (August 8, 2008) on November 6, 2008. Therefore Task 1 will be completed prior to the adoption of this Order. This Order requires Task 2 of that letter, which is implementation of the Cyanide Action Plan and report of the status of implementation.

VIII. PUBLIC PARTICIPATION

The San Francisco Bay Regional Water Board is considering the issuance of Waste Discharge Requirements (WDRs) that will serve as an NPDES permit for the Plant. As a step in the WDR adoption process, the Regional Water Board developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the **San Mateo County Times.**

B. Written Comments

Staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the attention of Adrienne Miller at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on **October 15, 2008.**

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **November 12, 2008**
Time: 9:00 am
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: Adrienne Miller, (510) 622-2415, email admiller@waterboards.ca.gov

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Dates and venues may change. The Regional Water Board Web address is http://www.waterboards.ca.gov/sanfranciscobay where one can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., except from noon to 1:00 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 510-622-2300.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding these WDRs and NPDES permit should contact the Regional Water Board, reference the Plant, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Adrienne Miller at 510-622-2415 (e-mail at ADMiller@waterboards.ca.gov).

ATTACHMENT H - PRETREATMENT REQUIREMENTS

Pretreatment Program Provisions

1. The Discharger shall implement all pretreatment requirements contained in 40 CFR 403, as amended. The Discharger shall be subject to enforcement actions, penalties, and fines as provided in the Clean Water Act (33 USC 1351 et seq.), as amended. The Discharger shall implement and enforce its Approved Pretreatment Program or modified Pretreatment Program 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:

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

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

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

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

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

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

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

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

APPENDIX A

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

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

1. Cover Sheet

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

2. Introduction

The Introduction shall include any pertinent background information related to the Discharger, the POTW and/or the industrial user 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 Water 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 Discharger 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 Water Board shall also be given.

8. Federal Categories

This section shall contain a list of all of the federal categories that apply to the Discharger. The specific category shall be listed including the subpart and 40 CFR section that applies. The maximum and average limits for the each category shall be provided. This list shall indicate the number of Categorical Industrial Users (CIUs) per category and the CIUs that are being regulated pursuant to the category. The information and data used to determine the limits for those CIUs for which a combined waste stream formula is applied shall also be provided.

9. Local Standards

This section shall include a table presenting the local limits.

10. Updated List of Regulated SIUs

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11. Compliance Activities

a. Inspection and Sampling Summary: This section shall contain a summary of all the inspections and sampling activities conducted by the Discharger over the past year to gather information and data regarding the SIUs. The summary shall include:

(1) the number of inspections and sampling events conducted for each SIU;

(2) the quarters in which these activities were conducted; and

(3) the compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:

(a) in consistent compliance;

(b) in inconsistent compliance;

(c) in significant noncompliance;

(d) on a compliance schedule to achieve compliance, (include the date final compliance is required);

(e) not in compliance and not on a compliance schedule;

(f) compliance status unknown, and why not.

b. Enforcement Summary: This section shall contain a summary of the compliance and enforcement activities during the past year. The summary shall include the names of all the SIUs affected by the following actions:

(1) Warning letters or notices of violations regarding SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(2) Administrative Orders regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(3) Civil actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

(5) Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty.

(6) Order to restrict/suspend discharge to the POTW.

(7) Order to disconnect the discharge from entering the POTW.

12. Baseline Monitoring Report Update

This section shall provide a list of CIUs that have been added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain all of the information specified in 40 CFR 403.12(b). For each of the new CIUs, the summary shall indicate when the BMR was due; when the CIU was notified by the POTW of this requirement; when the CIU submitted the report; and/or when the report is due.

13. Pretreatment Program Changes

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to: legal authority, local limits, monitoring/ inspection program and frequency, enforcement protocol, program's administrative structure, staffing level, resource requirements and funding mechanism. If the manager of the pretreatment program changes, a revised organizational chart shall be included. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

14. Pretreatment Program Budget

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the amounts spent on personnel, equipment, chemical analyses and any other appropriate categories. A brief discussion of the source(s) of funding shall be provided.

15. Public Participation Summary

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(vii). If a notice was not published, the reason shall be stated.

16. Sludge Storage and Disposal Practice

This section shall have a description of how the treated sludge is stored and ultimately disposed. The sludge storage area, if one is used, shall be described in detail. Its location, a description of the containment features and the sludge handling procedures shall be included.

17. PCS Data Entry Form

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information: the POTW name, NPDES Permit number, period covered by the report, the number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule, the number of notices of violation and administrative orders issued against SIUs, the number of civil and criminal judicial actions against SIUs, the number of SIUs that have been published as a result of being in SNC, and the number of SIUs from which penalties have been collected.

18. Other Subjects

Other information related to the Pretreatment Program that does not fit into one of the above categories should be included in this section.

Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX B:

REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

The semiannual pretreatment reports are due on July 31st (for pretreatment program activities conducted from January through June) and January 31st (for pretreatment activities conducted from July through December) of each year, unless an exception has been granted by the Board's Executive Officer. The semiannual reports shall contain, at a minimum, but is not limited to, the following information:

1. Influent, Effluent and Sludge Monitoring

The influent, effluent and sludge monitoring results shall be included in the report. The analytical laboratory report shall also be included, with the QA/QC data validation provided upon request. A description of the sampling procedures and a discussion of the results shall be given. (Please see Appendix C for specific detailed requirements.) The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed. In addition, a brief discussion of the contributing source(s) of all organic compounds identified shall be provided.

The Discharger has the option to submit all monitoring results via an electronic reporting format approved by the Executive Officer. The procedures for submitting the data will be similar to the electronic submittal of the NPDES self-monitoring reports as outlined in the December 17, 1999 Regional Water Board letter, Official Implementation of Electronic Reporting System (ERS). The Discharger shall contact the Regional Water Board's ERS Project Manager for specific details in submitting the monitoring data.

If the monitoring results are submitted electronically, the analytical laboratory reports (along with the QA/QC data validation) should be kept at the Plant.

2. Industrial User Compliance Status

This section shall contain a list of all Significant Industrial Users (SIUs) that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. The compliance status for the previous reporting period shall also be included. Once the SIU has determined to be out of compliance, the SIU shall be included in the report until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

For each SIU on the list, the following information shall be provided:

a. Indicate if the SIU is subject to Federal categorical standards; if so, specify the category including the subpart that applies.

b. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard.

c. Indicate the compliance status of the SIU for the two quarters of the reporting period.

d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3. POTW's Compliance with Pretreatment Program Requirements

This section shall contain a discussion of the Discharger's compliance status with the Pretreatment Program Requirements as indicated in the latest Pretreatment Compliance Audit (PCA) Report, Pretreatment Compliance Inspection (PCI) Report or Pretreatment Performance Evaluation (PPE) Report. It shall contain a summary of the following information:

a. Date of latest PCA, PCI or PPE and report.

b. Date of the Discharger's response.

c. List of unresolved issues.

d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW)(40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the Regional Water Board at the following addresses:

Regional Administrator
United States Environmental Protection Agency
Region 9, Mail Code: WTR-7
Clean Water Act Compliance Office
Water Division
75 Hawthorne Street
San Francisco, CA 94105

Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Pretreatment Coordinator
NPDES Permits Division, SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

APPENDIX C

REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in Table E-5 of the Self-Monitoring Program (SMP).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Tables E-3 and E-4 of the SMP. Any subsequent modifications of the requirements specified in Tables E-3 and E-4 shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both Table E-5 and the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

1. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required test methods listed in Tables E-3 and E-4 of the SMP. Any test method substitutions must have received prior written Regional Water Board approval. Influent and Effluent sampling locations shall be the same as those sites specified in the Self-Monitoring Program.

The influent and effluent sampled should be taken during the same 24-hour period. All samples must be representative of daily operations. A grab sample shall be used for volatile organic compounds, cyanide and phenol. In addition, any samples for oil and grease, polychlorinated biphenyls, dioxins/furans, and polynuclear aromatic hydrocarbons shall be grab samples. For all other pollutants, 24-hour composite samples must be obtained through flow-proportioned composite sampling. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated minimum level, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following standardized report format should be used for submittal of the influent and effluent monitoring report. A similar structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Semiannual Reports.

a. Sampling Procedures – This section shall include a brief discussion of the sample locations, collection times, how the sample was collected (i.e., direct collection using vials or bottles, or other types of collection using devices such as automatic samplers, buckets, or beakers), types of containers used, storage procedures and holding times. Include description of prechlorination and chlorination/dechlorination practices during the sampling periods.

b. Method of Sampling Dechlorination – A brief description of the sample dechlorination method prior to analysis shall be provided.

c. Sample Compositing – The manner in which samples are composited shall be described. If the compositing procedure is different from the test method specifications, a reason for the variation shall be provided.

d. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.

e. A tabulation of the test results shall be provided.

f. Discussion of Results – The report shall include a complete discussion of the test results. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

2. Sludge Monitoring

Sludge should be sampled in the same 24-hour period during which the influent and effluent are sampled except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the sludge analysis. The sludge analyzed shall be a composite sample of the sludge for final disposal consisting of:

a. Sludge lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or

b. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or

c. Dewatered sludge- daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) from each truckload, and shall be combined into a single 5-day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to sludge is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge Survey, September 1990, containing detailed analytical protocols specific to sludge, is recommended as a guidance for analytical methods.

In determining if the sludge is a hazardous waste, the Dischargers shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, Sections 66261.10 to 66261.24 and all amendments thereto.

Sludge monitoring reports shall be submitted with the appropriate Semiannual Report. The following standardized report format should be used for submittal of the report. A similarly structured form may be used but will be subject to Regional Water Board approval.

a. Sampling procedures – Include sample locations, collection procedures, types of containers used, storage/refrigeration methods, compositing techniques and holding times. Enclose a map of sample locations if sludge lagoons or stockpiled sludge is sampled.

b. Data Validation – All quality assurance/quality control (QA/QC) methods to be used shall be discussed and summarized. These methods include, but are not limited to, spike samples, split samples, blanks and standards. Ways in which the QA/QC data will be used to qualify the analytical test results shall be identified. A certification statement shall be submitted with this discussion stating that the laboratory QA/QC validation data has been reviewed and has met the laboratory acceptance criteria. The QA/QC validation data shall be submitted to the Regional Water Board upon request.

c. Test Results – Tabulate the test results and include the percent solids.

d. Discussion of Results – The report shall include a complete discussion of test results. If the detected pollutant(s) is reasonably deemed to have an adverse effect on sludge disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/ dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants that the permittee believes may be causing or contributing to Interference, Pass Through or adversely impacting sludge quality.