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Secretary for
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California Regional Water Quality Control Board

San Francisco Bay Region

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Arnold Schwarzenegger
Governor

ORDER NO. R2-2009-0039
NPDES NO. CA0038024

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

Table 1. Discharger Information

Discharger	Fairfield-Suisun Sewer District
Name of Facility	Fairfield-Suisun Wastewater Treatment Plant and its associated collection system
Facility Address	1010 Chadbourne Road
	Fairfield, CA 94534
	Solano County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **major** discharge.	

Discharges by the Fairfield-Suisun Wastewater Treatment Plant from the discharge points identified below are subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Advanced Secondary Treated Municipal Wastewater	38º 12’ 33” N	122º 03’ 24” W	Boynton Slough
002	Advanced Secondary Treated Municipal Wastewater	38º 12’ 52” N	122º 03’ 56” W	Duck Pond 1
003	Advanced Secondary Treated Municipal Wastewater	38º 12’ 35” N	122º 03’ 29” W	Duck Pond 2
005	Advanced Secondary Treated Municipal Wastewater	38º 14’ 00” N	122º 03’ 32” W	Ledgewood Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	**April 8, 2009**
This Order shall become effective on:	**June 1, 2009**
This Order shall expire on:	**May 31, 2014**
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**

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 **April 8, 2009.**

Digitally signed by Bruce Wolfe
Date: 2009.04.10 15:05:37 -07'00'

Bruce H. Wolfe, Executive Officer

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Attachment G – The following documents are part of this Permit, but are not physically attached due to volume. They are available on the internet at www.waterboards.ca.gov/sanfranciscobay/
- Self-Monitoring Program, Part A, adopted August 1993

- Standard Provisions and Reporting Requirements, August 1993
- August 6, 2001 Letter: *Requirement for Priority Pollutant Monitoring in Receiving Water and Wastewater Discharges*

Attachment H – Pretreatment Requirements H-1

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	Fairfield-Suisun Sewer District
Name of Facility	Fairfield-Suisun Wastewater Treatment Plant and its collection system
Facility Address	1010 Chadbourne Road
	Fairfield, CA 94534
	Solano County
Facility Contact, Title, and Phone	Kathy Hopkins, General Manager, (707) 429-8930
Mailing Address	Same as Facility Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	17.5 million gallons per day (MGD) (average dry weather design treatment capacity) 34.8 MGD (peak wet weather treatment capacity)
Service Areas	Cities of Fairfield and Suisun, and unincorporated areas in Solano County
Service Population	132,500 (2008 estimate)

II. FINDINGS

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

A. Background. The Fairfield-Suisun Sewer District (hereinafter the Discharger) is currently discharging under Order No. R2-2003-0072, as amended by Order No. R2-2006-0045 (National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038024). The Discharger submitted a Report of Waste Discharge, dated March 31, 2008, and applied to renew its NPDES permit to discharge up to 17.5 MGD (average dry weather flow) of advanced secondary treated wastewater from the Fairfield-Suisun Wastewater Treatment Plant (Plant) and its collection system.

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

B. Facility Description. The Discharger owns and operates the Plant, which provides advanced secondary treatment of wastewater from domestic, commercial, and industrial sources from the service areas listed in Table 4, above. The current service population is approximately 132,500 (2008 estimate). The Discharger has a current average dry weather design treatment capacity of 17.5 MGD and plans to increase its average dry weather treatment capacity to 23.7 MGD during the term of this permit. The average discharge rate is 16.7 MGD based on flow data from 2006 to 2008, and the highest maximum daily effluent flow rate from 2006 to 2008 was 37.32 MGD.

Flow enters the Plant headworks from four pump stations. Each pump station force main has a magnetic flow meter measuring flow. The pump stations' combined flow is measured through a Parshall flume downstream of influent screening. Plant recycle (utility water) is included in the inlet pump station flow. As a result, influent flow always contains Plant recycle. The Plant

recycle stream is separately sampled and metered prior to mixing with the influent flow. Then the combined flow (recycle and influent) is sampled and metered. To determine influent flow, Plant influent analyses are mathematically adjusted to arrive at influent loading exclusive of Plant recycle.

Wastewater treatment processes at the Plant include screening and grit removal, primary clarification, optional fixed film roughing filters and intermediate clarification, biological activated sludge, secondary clarification, temporary storage of activated sludge effluent in flow balancing reservoirs (total volume of 12.7 million gallon (MG)), advanced secondary dual-media filtration, disinfection (chlorination), and dechlorination (sulfur dioxide). Biosolids are concentrated using dissolved air flotation thickeners, anaerobically digested, and either mechanically dewatered or dewatered by open-air solar drying beds or lagoons. Biosolids are placed in the Potrero Hills Landfill as alternative daily cover or beneficially reused through agricultural land application.

Wet weather facilities are available that include equalization storage (111 MG) with communition and prechlorination. Flows from the wet weather facilities are returned to the Plant headworks once influent flows subside. The Plant provides containment and advanced secondary treatment of wastewater flows up to the 20-year storm event.

Chlorinated Plant effluent flow is conveyed from the chlorine contact basin to either Discharge Point 001, or to earthen final storage reservoirs (total volume of 20.4 MG), where it is dechlorinated prior to discharge to Boynton Slough. During periods of low flow and/or low irrigation demand, stored water from the final effluent reservoirs is discharged at Discharge Point 001 and is, therefore, a blend of treated wastewater from the chlorine contact chamber effluent and treated wastewater from the storage reservoirs. The outfall pipeline before Discharge Point 001 can also be opened to allow the discharge of dechlorinated effluent to Discharge Points 002 and 003, also known as Duck Ponds 1 and 2.

Approximately 10 percent of the Plant's treated effluent is discharged via a utility pump station that pumps chlorinated effluent from the final storage reservoirs into irrigation conveyance and distribution facilities owned and operated by the Solano Irrigation District. Effluent may also be diverted from the effluent pipe to Discharge Point 001 to the irrigation system. Regional Water Board Order No. 91-147 regulates reclamation for this discharge (agricultural and landscape irrigation, and industrial cooling).

Upon Executive Officer approval pursuant to section VI.C.2.h. of this Order, wet weather treated dechlorinated effluent flows that exceed the capacity of the outfall at Discharge Point 001 (approximately 35 MGD) may be pumped from the utility pump station to Ledgewood Creek (Discharge Point 005). Discharge Point 005 will also provide an alternate discharge point for periods of shutdown at Discharge Point 001 and seismic redundancy for the Plant.

The Plant expansion is expected to be complete and operational by September 2009. However, additional Plant capacity is not authorized by this Order until the Discharger submits the appropriate documentation, as required by section VI.C.2.h. of this Order, and upon Executive Officer approval.

The Discharger's collection system is a separate sanitary sewer and includes 70 miles of sewer line (12 inches in diameter or greater) and 12 pump stations. Sewer lines less than 12 inches in diameter are owned and maintained by jurisdictions separate from the Discharger, including the City of Fairfield, Suisun City, and Travis Air Force Base.

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 (WDRs) 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* (hereinafter 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), the Office of Administrative Law (OAL), and USEPA. Requirements of this Order implement the Basin Plan.

The Basin Plan states that the beneficial uses of any specifically identified water body generally apply to its tributaries. The Basin Plan does not specifically identify beneficial uses for Boynton Slough, but does identify present and potential uses for Suisun Slough, to which Boynton Slough is tributary. The Basin Plan specifically identifies the beneficial uses of Ledgewood Creek. The Basin Plan specifically identifies the beneficial uses of Suisun Slough, to which Boynton Slough is tributary. The Basin Plan also specifically identifies the beneficial uses of Suisun March, to which the duck ponds are tributary.

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). The Discharger has performed plant community studies in Boynton Slough and Ledgewood Creek that show brackish marsh plants are present throughout the study area, indicating a tidal influence on each of these receiving waters. Because of the tidal influence on these receiving waters, total dissolved solids levels are expected to 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 the receiving waters of this discharge. Beneficial uses applicable to Boynton Slough, Ledgewood Creek, and the duck ponds are summarized in Table 5.

Table 5. Beneficial Uses of Boynton Slough, Ledgewood Creek, and Duck Ponds

Discharge Point	Receiving Water Name	Beneficial Uses
001	Boynton Slough (Tributary to Suisun Slough)	Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
002 and 003	Duck Ponds 1 and 2 (Both tributary to Suisun Marsh)	Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Fish Spawning (SPWN) Wildlife Habitat (WILD)
005	Ledgewood Creek	Freshwater Replenishment (FRSH) Cold Freshwater Habitat (COLD) Fish Migration (MIGR) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2)

Neither Boynton Slough nor Ledgewood Creek is listed as an impaired waterbody on the State's current (2006) list of impaired waters pursuant to CWA section 303(d), but Suisun Marsh, which

includes Boynton Slough, Ledgewood Creek, and the duck ponds, is 303(d) listed for metals, nutrients, low dissolved oxygen, and salinity.

The State Water Board adopted a Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for surface waters. Requirements of this Order implement the Thermal Plan.

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 USEPA promulgated for California through the NTR and to the priority pollutant objectives Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria USEPA promulgated 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. SIP Section 2.1 provides that, based on an existing discharger's request and demonstration that it is infeasible 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 SIP section 5.3, 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 State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, which includes compliance schedule policies for pollutants that are not addressed by the SIP. This policy has been approved by OAL and USEPA, and became effective on August 27, 2008.

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 these 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 WQBELs for priority pollutants are based on the SIP. 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 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 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. R2-2003-0072. 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 apply 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 Fact Sheet.

R. Provisions and Requirements Implementing State Law. There are no provisions or requirements in this Order that are included to implement State law only. Such provisions or requirements are not required or authorized under the federal CWA, and consequently, violations of these provisions or 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.

IT IS HEREBY ORDERED that this Order supersedes Order Nos. R2-2003-0072, and R2-2006-0045, 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.

III. DISCHARGE PROHIBITIONS

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

B. 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 and I.G.4 of Attachment D of this Order.

C. The average dry weather flow, measured at Monitoring Locations E-001, as described in the attached Monitoring and Reporting Plan (MRP) (Attachment E), shall not exceed 17.5 MGD. Upon Executive Officer approval of the submittals required section VI.C.2.e of this Order, the (total) permitted average dry weather discharge will increase to 23.7 MGD, measured at E-001 and E-005; and discharges to Ledgewood Creek at Discharge Point 005 shall be authorized in accordance with the limitations and conditions established by this Order.

The average dry weather flow shall be determined for compliance with this prohibition over three consecutive dry weather months each year.

D. 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 – DISCHARGE POINTS 001, 002, 003 AND 005

1. Effluent Limitations for Conventional and Non-Conventional Pollutants

a. The Discharger shall maintain compliance with the following effluent limitations for Discharge Points 001, 002, 003, and 005, with compliance measured at Monitoring Location E-001-D, except where noted that compliance shall be determined at E-001, as described in the attached MRP (Attachment E). Effluent limitations shall become effective at Discharge Point 005 immediately upon Executive Officer approval of discharge at this outfall.

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	10	15	20	---	---
Total Suspended Solids (TSS)	mg/L	10	15	20	---	---
Oil and Grease	mg/L	---	---	10	---	---
pH (1),(2)	s.u.	---	---	---	6.5	8.5
Turbidity	NTU	---	---	10	---	---
Total Residual Chlorine (2)	mg/L	---	---	---	---	0.0 (3)

Footnotes to 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) Compliance shall be determined at Monitoring Location E-001. The chlorine residual effluent limit applies during all times when chlorination is used for disinfection of the effluent.

(3) 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, chlorine, and sulfur dioxide 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.

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. **Enterococcus Bacteria:** The 30-day geometric mean value for all samples analyzed for enterococcus bacteria shall not exceed 33 colonies per 100 mLs.

2. Effluent Limitations for Toxic Pollutants

The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 001, 002, 003, and 005, with compliance measured for at Monitoring Location E-001-D (except as specified), as described in the attached MRP (Attachment E). Effluent limitations shall become effective at Discharge Point 005 immediately upon Executive Officer approval of discharge at this outfall.

Table 7. Effluent Limitations for Toxic Pollutants

Parameter	Units	Final Effluent Limitations (1), (2)	
		Average Monthly	Maximum Daily
Copper	µg/L	7.9	15
Cyanide (E-001)	µg/L	7.4	18
Cyanide (E-002, E-003, E-005)	µg/L	2.1	5.3
Dioxin-TEQ	µg/L	1.4×10^{-8}	2.8×10^{-8}
Chlorodibromomethane (3)	µg/L	34	68
Dichlorobromomethane	µg/L	46	92
Total Ammonia	mg/L N	2.0	4.0

Footnotes to 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) Final effluent limitations shall become effective on May 18, 2010.

Table 8. Minimum Levels for Pollutants with Effluent Limitations

Parameter	Minimum Level	Units
Copper	0.5	µg/L
Cyanide	5	µg/L
Chlorodibromomethane	0.5	µg/L
Dichlorobromomethane	0.5	
Ammonia	0.2	mg/L
Dioxin-TEQ	As specified below	
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. Interim Effluent Limitations

The Discharger shall maintain compliance with the following effluent limitation at Discharge Point 001, 002, 003, and 005, with compliance measured at Monitoring Location E-001-D, as described in the attached MRP (Attachment E). The interim limit for dioxin-TEQ shall remain in effect until 10 years from the effective date of this Order. At that time, the final limits in Table 7 shall become effective.

Table 9. Interim Effluent Limitations for Dioxin-TEQ

Parameter	Units	AMEL
Dioxin-TEQ	µg/L	6.3×10^{-5} µg/L

4. Acute Toxicity

a. Representative samples of the effluent at Discharge Points 001, 002, 003, and 005, with compliance measured at Monitoring Location E-001 or E-005, as described in the attached MRP, 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 combined 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.

5. 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 Monitoring Location EFF-001 or EFF-005, as described in the attached MRP, which meet test acceptability criteria, and follow requirements of Section V.B of the MRP (Attachment E). Failure to conduct the required toxicity tests or a toxicity reduction evaluation (TRE) within the period designated in the MRP may result in the establishment of effluent limitations for chronic toxicity.

(1) Conduct routine quarterly monitoring.

(2) Accelerate monitoring after exceeding a three sample median of 1 chronic toxicity units (TUc) or single-sample maximum of 2 TUc, consistent with Table 4-5 of the Basin Plan for shallow-water dischargers. 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 workplan 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 workplan 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. Test Species and Methods

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

1. Receiving surface water limitations are based on Basin Plan water quality objectives and are a required part of this Order. The discharges shall not cause the following in Boynton Slough, Ledgewood Creek, Suisun Marsh, or the duck ponds:

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, from June 1 through November 15
		7.0 mg/L, minimum, at all other times of the year

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.

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

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 Attachment G shall apply in areas where those provisions are more stringent. Duplicative requirements in the federal Standard Provisions in VI.A.1 (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 modification 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 (measured at Monitoring Location EFF-001-D) 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, in part, through monitoring through the 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. Diurnal Ammonia Study

The Discharger shall collect receiving water monitoring data for water quality parameters (pH, salinity, hardness, temperature, dissolved oxygen, and ammonia) that shall be sufficient to characterize diurnal variability of these parameters throughout the day.

The Discharger shall submit a study plan acceptable to the Executive Officer by September 1, 2009, that includes the following elements: sampling locations (at the minimum, one upgradient and one downgradient of E-001 and E-005), sampling and analysis protocols (including means to evaluate diurnal conditions, such as some continuous monitoring), sampling parameters (at a minimum, pH, salinity, hardness, temperature, dissolved oxygen, and total ammonia), and a proposed implementation schedule.

The Discharger shall implement the plan within 90 days. 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.

d. Updated Technical Report on Recycled Water Use and Discharge Impacts on Beneficial Uses

The Discharger shall update its September 1987 technical report, *Technical Report on Water Quality, Fairfield-Suisun Sewer District Subregional Wastewater Treatment Plant,* using updated water quality data and including an analysis of any changed conditions (such as the addition of the Ledgewood Creek outfall and the planned flow increase) to determine any impacts on Boynton Slough and Ledgewood Creek, and the degree of environmental benefit, if any.

The Discharger shall submit a study plan acceptable to the Executive Officer by September 1, 2009, that includes a description of the proposed analysis, including any data collection needed, and a proposed implementation schedule.

The Discharger shall implement the plan within 90 days of submitting it to the Executive Officer. The Discharger shall submit a final report that presents and evaluates the data collected to the Regional Water Board no later than 180 days prior to this Order's expiration date with the application for permit reissuance.

e. Ledgewood Creek Temperature Study

The Discharger shall collect effluent and receiving water monitoring data for temperature to evaluate temperature impacts from discharge at the Ledgewood Creek outfall (E-005).

The Discharger shall submit a study plan acceptable to the Executive Officer by September 1, 2009, that includes the following elements: sampling locations (at a minimum, at E-005 and at receiving water monitoring stations RSW-006, RSW-007, RSW-009 and RSW-010), sampling and analysis protocols, and a proposed implementation schedule.

f. 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) 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.

g. Optional Site-Specific Translator Study

The Discharger has the option to continue collecting receiving water data to augment the current data set used to develop the site-specific translators used in this Order. A final report summarizing the data and the data analysis may be submitted 180 days prior to the expiration of this Order.

h. Dry Weather Flow Capacity Analysis

The Discharger shall provide the following documentation to the Regional Water Board, and that documentation shall be approved in writing by the Executive Officer, before an increased permitted dry weather treatment capacity is allowed by this Order.

(1) An engineering analysis addressing the following major components of the Plant and outfalls supporting the proposed increased treatment capacity:

a. Evaluation of the reliability, capability, and performance of the Plant facilities to maintain compliance with waste discharge requirements at the proposed higher flow rate. Hydraulic and organic loading capacities of the Plant facilities shall be evaluated by appropriate combinations of desk-top analyses and treatment process stress testing to simulate design peak loading conditions. Evaluation shall include treatment process operations under both dry weather and wet weather design flow conditions, and effluent disposal capacity including storage and discharge to land through reclamation.

b. Evaluation of the reliability and capacity of the wastewater collection facilities to maintain compliance with waste discharge requirements, specifically the prohibition against sanitary sewage overflows, at the proposed higher wastewater flow rate under both dry weather and wet weather conditions.

c. Adequate financial provisions to ensure adequate operation and maintenance of the wastewater treatment and collection facilities.

(2) Certification that the treatment facilities and outfalls have been constructed as designed and are available for use; and

(3) Updated Operation and Maintenance Manual and Contingency Plan reflecting new treatment and outfall facilities.

3. Best Management Practices and Pollution Minimization

a. Pollution Minimization Program (PMP)

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

b. Annual Pollution Prevention (P2) 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. Should the Discharger choose to submit earlier in the year, the report shall cover the preceding 12 months two months prior to the submittal date. As an example, a report submitted on June 30, shall cover the preceding 12 month ending in April. Each annual report shall include at least the following information:

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

(2) *Discussion of 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 address why the pollutants were identified as pollutants of concern.

(3) *Identification of sources of pollutants of concern.* This discussion shall address how the Discharger identifies pollutant sources. The Discharger should also identify sources or potential sources not directly within its ability or authority to control, such as pollutants in the potable water supply and air deposition.

(4) *Identification and implementation of measures 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 a regional, State, or national group to 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 regarding 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 the PMP's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its PMP. This discussion shall address specific criteria used to measure the effectiveness of each task identified 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 PMP during the reporting year.

(9) *Evaluation of the PMP's and tasks' effectiveness.* The Discharger shall use the criteria established in b.(7), above, to evaluate the PMP'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 loading of pollutants to the treatment plant and therefore in its effluent.

c. PMP for Pollutants with Effluent Limitations

The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the 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 RL; or

(2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in the SIP.

d. PMP Submittals for Pollutants with Effluent Limitations

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 facility 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 and update 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. Biosolids Management Practices Requirements

(1) All biosolids generated by the Discharger must be disposed of in a municipal solid waste landfill, used as part of a waste-to-energy facility, 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 biosolids 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) Biosolids 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 biosolids use or disposal which has a likelihood of adversely affecting human health or the environment.

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

(5) The biosolids 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 biosolids that are applied to the land, placed on a surface disposal site, or fired in a biosolids 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) Biosolids that are 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 biosolids disposed of and the landfill(s) to which it was sent.

(8) Permanent on-site biosolids 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) Biosolids 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 that is 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 continue to comply with the schedule for development of sewer system management plans as indicated in the Regional Water Board letter issued on July 7, 2005, pursuant to CWC Section 13267; and with the sanitary sewer overflow and unauthorized discharge notification and reporting requirements of the Regional Water Board letter issued on May 1, 2008, pursuant to CWC Section 13267; and with the sanitary sewer overflow and unauthorized discharge notification and reporting requirements of the Regional Water Board letter issued 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. Copper Action Plan

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

Table 10. 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.	September 1, 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 2.8 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.	With Annual Pollution Prevention reports due February 28th of each year

7. Cyanide Action Plan

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

Table 11. Cyanide Action Plan

Task	Compliance Date
1. Review Potential Cyanide Contributors The Discharger shall submit an inventory of potential contributors of cyanide to the treatment plant (e.g., metal plating operations, hazardous waste recycling.). If no contributors of cyanide are identified, Tasks 2 and 3 are not required, unless the Discharger receives a request to discharge detectable levels of cyanide to the sanitary sewer. If so, the Discharger shall notify the Executive Officer and implement Tasks 2 and 3.	September 1, 2009
2. 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 each year on February 28, or within 90 days of completing Task 1
3. 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 each year on February 28

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:

$$\textbf{Arithmetic mean} = \mu = \Sigma x / n$$

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

Average Monthly Effluent Limitation (AMEL) is 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.

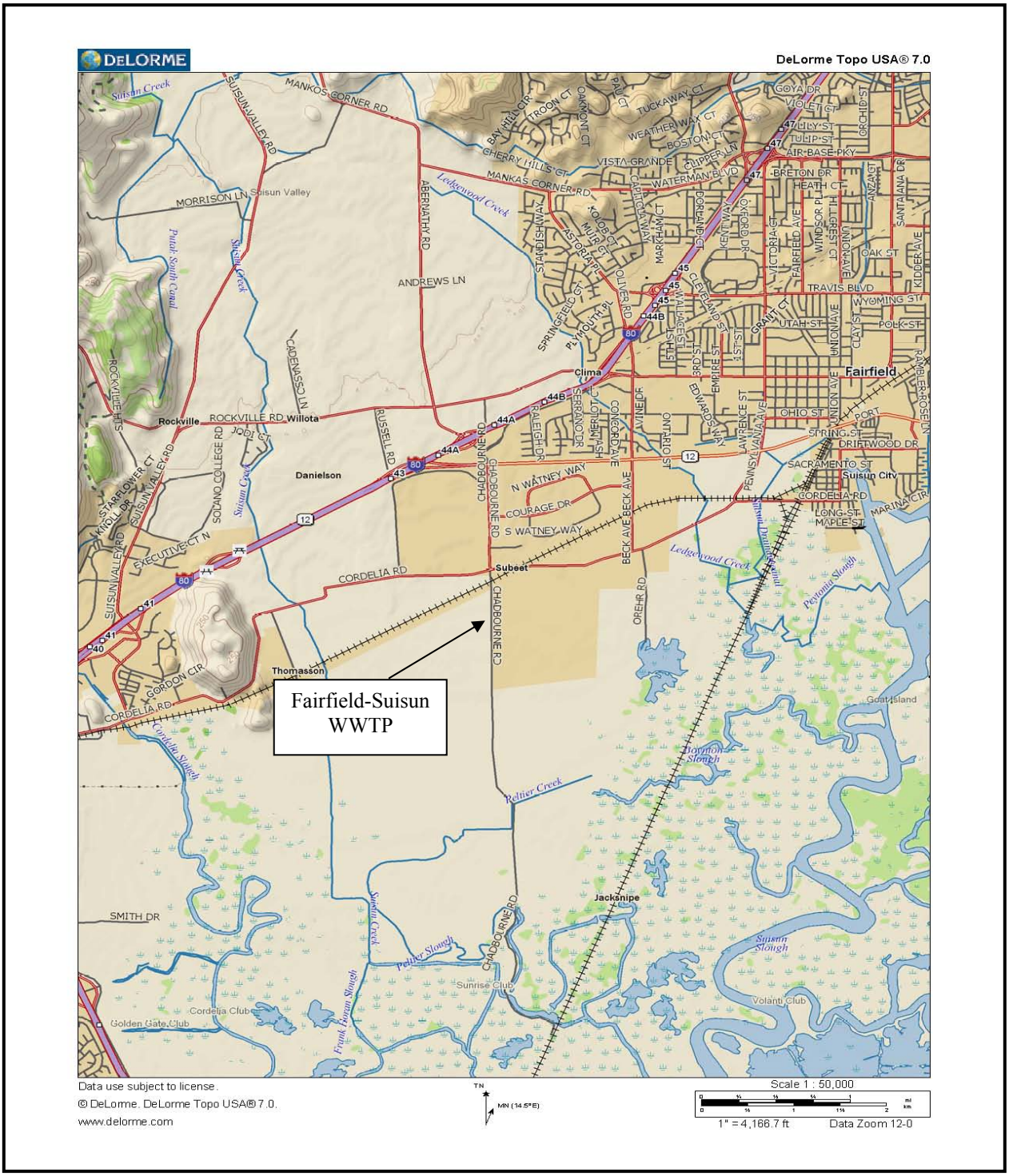
Standard Deviation (σ) is a measure of variability that is calculated as follows:

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

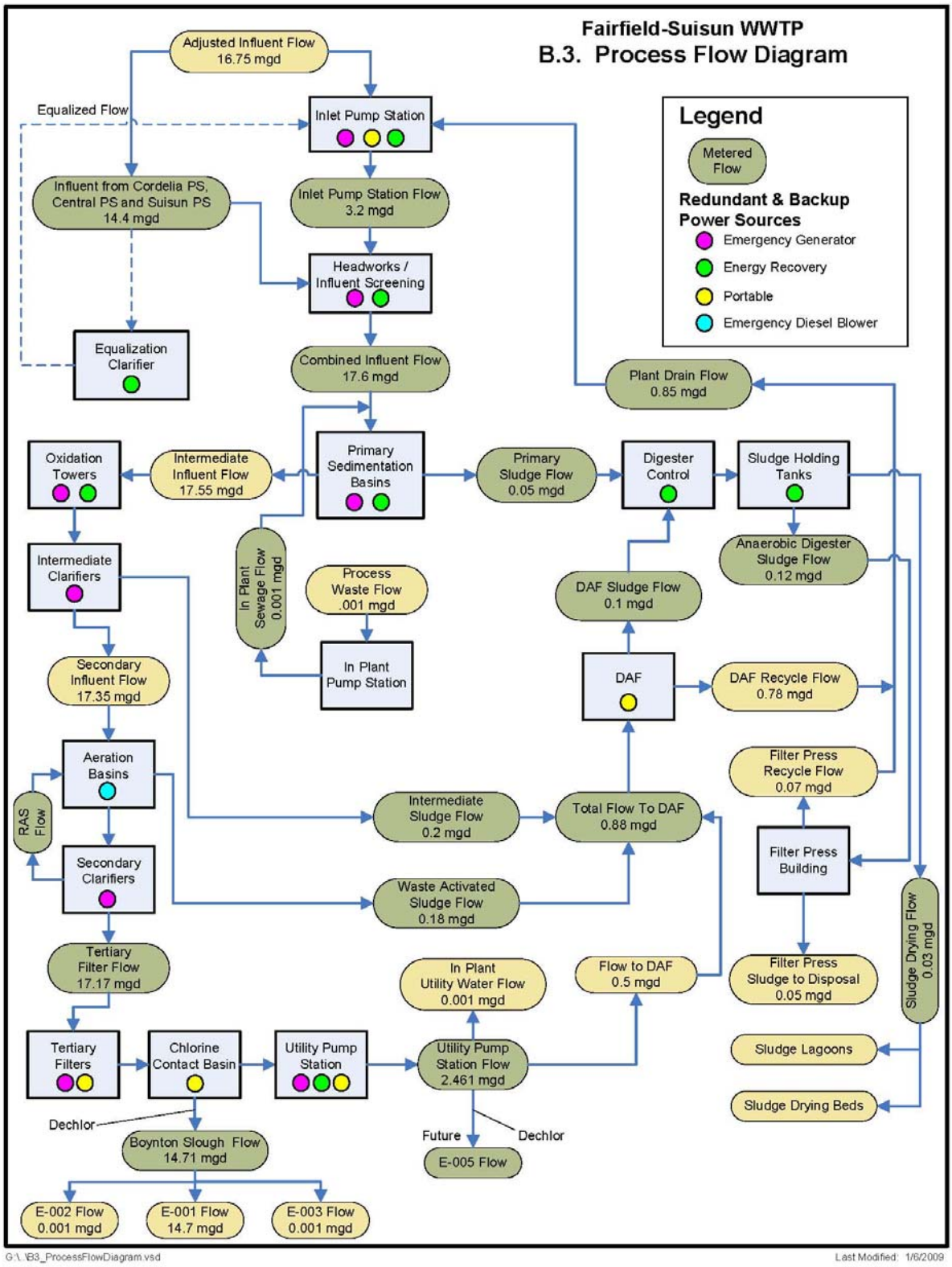
where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

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).)

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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 that 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, or 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 CWC 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.

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
6	Copper								0.5	2
14	Cyanide				5					
16-TEQ	Dioxin-TEQ (2)									
23	Chlorodibromo-methane	0.5	2							
27	Dichlorobromo-methane	0.5	2							
--	Ammonia (3)									

Footnotes to Table E-1:

(1) Analytical Methods / Laboratory techniques are defined as follows:

Color	=	Colorimetric;
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 in Table 8 of the Order for each congener.

(3) Ammonia-N measured by titration method, Minimum Detection Level 0.2 mg/L; Ammonia-N measured by Ammonia Selective Electrode Method, Reference SM 4500-NH3 F (18th Edition), Minimum Detection Level 0.1 mg/L.

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	I-001	At a point in the treatment facilities upstream of the primary clarifiers at which waste tributary to the treatment system is present, formerly A-001. This monitoring location is downstream of influent screening and the addition of Plant recycle. The Plant recycle is separately sampled and metered for flow prior to mixing with influent and then the combined flow is metered for flow and sampled. Therefore, influent analyses are mathematically adjusted to arrive at influent loading exclusive of Plant recycle.
Effluent	E-001	At a point after full treatment, including disinfection, and prior to contact with Boynton Slough, formerly E-001-S
Effluent	E-001-D	At a point in the treatment facility following advanced secondary treatment in the chlorine contact basins where adequate contact with disinfectant is assured, prior to dechlorination or distribution to the storage reservoirs or the utility pump station, formerly E-001-A.
Effluent	E-002	At a point in the Boynton Slough outfall pipeline line where effluent may be discharged to Duck Pond 1, but prior to contact with the receiving water.

Effluent	E-003	At a point in the Boynton Slough outfall pipeline where effluent may be discharged to Duck Pond 2, but prior to contact with the receiving water.
Effluent	E-005	At a point in the Ledgewood Creek outfall pipeline where all treated wastewater tributary to the discharge is present but prior to contact with the receiving water.
Receiving Water	RSW-001	At a point in Boynton Slough approximately 100 ft downstream from Discharge Point 001, formerly C-1.
Receiving Water	RSW-002	At a point in Boynton Slough approximately 100 ft downstream from the point where the Southern Pacific Railroad tracks cross the slough, formerly C-2.
Receiving Water	RSW-003	At a point in Boynton Slough approximately 1800 ft downstream from Discharge Point 001, formerly C-3.
Receiving Water	RSW-004	At a point in the mouth of Boynton Slough where it flows into Suisun Slough, formerly C-4.
Receiving Water	RSW-006	At a point in the mouth of Peytonia Slough where it flows into Suisun Slough, formerly C-6.
Receiving Water	RSW-007	At a point in Peytonia Slough approximately 100 ft downstream from the point where the Southern Pacific Railroad tracks cross the slough, formerly C-R-1, to represent background conditions.
Receiving Water	RSW-008	At a point in Chadbourne Slough approximately 100 ft downstream from the point where the Southern Pacific Railroad tracks cross the slough, formerly C-R-2, to represent background conditions.
Receiving Water	RSW-009	At a point in Ledgewood Creek approximately 1000 ft upstream from Discharge Point 005 on the southern side of the railroad bridge.
Receiving Water	RSW-010	At a point in Ledgewood Creek approximately 100 ft downstream from Discharge Point 005.

III. INFLUENT MONITORING REQUIREMENTS

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

Table E-3. Influent Monitoring – Monitoring Location I-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate (1)	MGD	Cont/D	Cont	—
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	3/Week	(2)
	kg/day	C-24	3/Week	(2)

Footnotes to Table E-3:

(1) Flow Monitoring: 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-D as follows.

Table E-4. Effluent Monitoring – Monitoring Location E-001-D

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate (1)	MGD	Cont	Cont/D	(2)
BOD	mg/L	C-24	3/Week	(2)
	kg/day	C-24	3/Week	(2)
TSS	mg/L	C-24	3/Week	(2)
	kg/day	C-24	3/Week	(2)
BOD and TSS percent removal(3)	%	calculate	1/Month	
Oil and Grease(4)	mg/L	C-24	1/Quarter	(2)
	kg/day	C-24	1/Quarter	(2)
Total Chlorine Residual(5)	mg/L	Cont/2-hour	1/every 2 hours	(2)
Dissolved Oxygen	mg/L	G	1/Day	(2)
	% saturation	G	1/Day	(2)
Total Sulfides(6)	mg/L	G	1/Day	(2)
Enterococcus Bacteria(7)	MPN/100mL or CFU/100mL	G	5/Week	(2)
Temperature	^{o}C	G	1/Day	(2)
Turbidity	NTU	G	1/Day	(2)
pH	s.u.	Cont	Cont/Day	(2)
Ammonia (total as N)	mg/L as N	C-24	1/Month	(2)
Unionized Ammonia	mg/L as N	C-24	1/Month	Calculated
Total Nitrogen	mg/L	C-24	1/Week	(2)
Total Phosphate	mg/L	C-24	1/Week	(2)
Copper	µg/L	C-24	1/Month	(2)
Dioxin-TEQ	µg/L	G	2/Year	(2)
Chlorodibromomethane	µg/L	G	2/Year	(2)
Dichlorobromomethane	µg/L	G	2/Year	(2)
Remaining Priority Pollutants(8)	µg/L	(8)	2/Year	(2)
Standard Observations(8)	---	---	1/Week	---

Footnotes to Table E-4:

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) Flows shall be monitored continuously and the following shall be reported in monthly SMRs:
a. Daily average flow rate (MGD),
b. Daily total flow volume (MG),
c. Monthly average flow rate (MGD),
d. Monthly total flow volume (MG), and
e. Average daily maximum and average daily minimum flow rates (MGD) in a month.

(2) Pollutants and pollutant parameters shall be analyzed using the analytical methods described in 40 CFR 136. For priority pollutants, the methods must meet the lowest MLs specified in SIP Attachment 4.

(3) The percent removal for BOD and TSS shall be reported for each calendar month in accordance with Effluent Limitations IV.A.2. Samples for BOD and TSS shall be collected simultaneously with influent samples.

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

(5) During all times when chlorination is used for disinfection of the effluent, effluent chlorine concentrations shall be monitored continuously. Chlorine residual concentrations shall be monitored and reported for sampling points both before and after dechlorination. The Discharger shall report the maximum residual chlorine concentration observed following dechlorination on a daily basis. Total chlorine dosage (kg/day) shall be recorded on a daily basis. Alternatively, the Discharger may evaluate compliance with this requirement by recording discrete readings from the continuous monitoring every hour on the hour, or by collecting grab samples every hour, for a total of 24 readings or samples per day if the following conditions are met: (a) The Discharger shall retain continuous monitoring readings for at least three years; (b) The Discharger shall acknowledge in writing that the Regional Water Board reserves the right to use all other continuous monitoring data for discretionary enforcement; (c) The Discharger must provide in writing the brand name(s), model number(s), and serial number(s) of the equipment used to continuously monitor dechlorinated final effluent chlorine residual. If the identified equipment is replaced, the Discharger shall provide the Regional Water Board in writing, within 72 hours of the successful startup of the new equipment, the new equipment's brand name, model number, and serial number. The written notification identified in items (a) through (c) shall be in the form of a letter addressed to the Regional Water Board's Executive Officer with a certification statement as listed in the October 19, 2004, Regional Water Board letter re: *Chlorine Compliance Strategy for Dischargers Using Continuous Monitoring Devices***.**

(6) Total sulfides analysis shall be conducted only when dissolved oxygen concentrations as measured at EFF-001-D fall below 2.0 mg/L.

(7) The Executive Officer may reduce the sampling frequency to three times per week after three years of monitoring, at the request of the Discharger and evidence of sustained compliance with the effluent limitation.

(8) Sampling for all priority pollutants in the 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 relevant parts of these sampling requirements.

(9) Standard observations, as specified in the SMP, Part A.

B. The Discharger shall monitor treated effluent from the Plant at E-001 and E-005, as follows. Effluent monitoring requirements for E-005 shall become effective upon Executive Officer approval of the discharge at Discharge Point 005.

Table E-5. Effluent Monitoring – Monitoring Locations E-001 and E-005

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate (1)	MGD	Cont	Cont/Day	---
pH (3)	s.u.	Cont	Cont/Day	(2)
Total Chlorine Residual	mg/L	Cont/2-hour	1/every 2 hours	(2)
Acute Toxicity (4), (5)	% survival	C-24	1/Month	(2)
Chronic Toxicity (5), (6)	TUc	C-24	1/Quarter	(2)
Temperature	°C	Cont	Cont/Day	(2)
Dissolved Oxygen	mg/L	G	1/Day	(2)
	% Saturation	G	1/Day	(2)
Cyanide (5), (7)	µg/L	G	1/Month	(2)
Dissolved Sulfides (8)	mg/L	G	1/Day	(2)

Footnotes to Table E-5:

Units:

MG	=	million gallons
MGD	=	million gallons per day
s.u.	=	standard units
TUc	=	Chronic Toxicity Units
°C	=	degrees Celsius
mg/L	=	milligrams per liter
kg/d	=	kilograms per day

(1) Flows shall be monitored continuously and the following shall be reported in monthly SMRs:
a. Daily average flow rate (MGD),
b. Daily total flow volume (MG),
c. Monthly average flow rate (MGD),
d. Monthly total flow volume (MG), and

e. Average daily maximum and average daily minimum flow rates (MGD) in a month.

(2) Pollutants and pollutant parameters shall be analyzed using the analytical methods described in 40 CFR 136. For priority pollutants, the methods must meet the lowest MLs specified in SIP Attachment 4.

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

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

(5) Monitoring for acute toxicity, chronic toxicity, and cyanide shall occur at the frequencies indicated in Table E-5. The Discharger shall monitor at E-001 when there is discharge occurring at both E-001 and E-005. The Discharger shall monitor at E-005 when there is only discharge at E-005 and not at E-001.

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

(7) 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.

(8) Total sulfide analysis shall be conducted when dissolved oxygen concentrations measured at E-001 or E-005 fall below 2.0 mg/L.

C. The Discharger shall monitor treated effluent from the Plant at E-002 and E-003 as follows.

Table E-6. Effluent Monitoring Requirements – E-002 and E-003

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow Rate (1)	MGD	Seasonal	(1)	---

Footnotes to Table E-6:

Units:

MG = million gallons
MGD = million gallons per day

(1) Flows shall be reported as monthly totals (in MG) in the monthly SMRs.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor acute and chronic toxicity at the compliance location and frequencies specified in Table E-4, 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 the Executive Officer specifies otherwise in writing.

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 the Discharger can demonstrate that specific identifiable substances in the discharge are 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. The Discharger must obtain written approval from the Executive Officer to authorize such an adjustment.

5. Effluent used for fish bioassays shall be dechlorinated prior to testing. 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 a violation of acute toxicity requirements occurs or if the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and 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-5 for critical life stage toxicity tests. 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 the 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 any exceptions granted by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

   d. *Dilution Series.* The Discharger shall conduct tests at 100%, 50%, 25%, 12.5%, and 6.25%. 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 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 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

A. 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.

B. The Discharger also shall conduct receiving water monitoring as described in Tables E-7 and E-8, below.

Table E-7. Receiving Water Monitoring – Monitoring Locations RSW-001 to RSW-004, RSW-006 to RSW-008

Parameter	Units	Sample Type	Minimum Sampling Frequency (1)	Required Analytical Test Method
pH (3) (4)	s.u.	G	1/Quarter	(2)
Temperature (3) (4)	°C	G	1/Quarter	(2)
Salinity (3) (4)	ppt	G	1/Quarter	(2)
Total Ammonia(3) (4)	mg/L as N	G	1/Quarter	(2)
Unionized Ammonia	mg/L as N	Calculation	1/Quarter	(2)
Dissolved Oxygen(3) (4)	mg/L	G	1/Quarter	(2)
	% Saturation	G	1/Quarter	(2)
Hardness (3) (4)	mg/L as $CaCO_3$	G	1/Quarter	(2)
Total Nitrogen	mg/L as N	G	1/Quarter	(2)
Total Phosphate	mg/L as P	G	1/Quarter	(2)
Standard Observations	---	Observation	1/Quarter	---

Footnotes to Table E-7:

Units:

s.u. = standard units
°C = degrees Celsius
mg/L = milligrams per liter
µg/L = micrograms per liter

(1) Receiving waters stations RSW-001 to RSW-004 and RSW-006 to RSW-008 shall be sampled on the same day and the sampling frequency will be 1/Quarter.
(2) Pollutants and pollutant parameters shall be analyzed using the analytical methods described in 40 CFR 136.
(3) Monitoring shall be conducted in the afternoon, when pH and ammonia toxicity are at a maximum.

Table E-8. Receiving Water Monitoring – Monitoring Locations RSW-009 and RSW-010

Parameter	Units	Sample Type	Minimum Sampling Frequency (1)	Required Analytical Test Method
pH (3) (4)	s.u.	G	1/Month	(2)
Temperature (3) (4)	°C	G	1/Month	(2)
Salinity (3) (4)	ppt	G	1/Month	(2)
Total Ammonia(3) (4)	mg/L as N	G	1/Month	(2)
Unionized Ammonia	mg/L as N	Calculation	1/Month	(2)
Dissolved Oxygen(3) (4)	mg/L	G	1/Month	(2)
	% Saturation	G	1/Month	(2)
Hardness (3) (4)	mg/L as $CaCO_3$	G	1/Month	(2)
Total Nitrogen	mg/L as N	G	1/Quarter	(2)
Total Phosphate	mg/L as P	G	1/Quarter	(2)
Metals(5)	µg/L	G	1/Quarter	(2)
Standard Observations	---	Observation	1/Quarter	---

Footnotes to Table E-8:

Units:

s.u. = standard units
°C = degrees Celsius
mg/L = milligrams per liter

µg/L = micrograms per liter

(1) Receiving water stations RSW-009 and RSW-010 shall be sampled on the same day, when discharge is occurring at Discharge Point E-005. For RSW-009 and RSW-010, for all constituents with the sampling frequency of 1/Month, this frequency shall continue for one calendar year and then drop to 1/Quarter.
(2) Pollutants and pollutant parameters shall be analyzed using the analytical methods described in 40 CFR 136. For priority pollutants, the methods must meet the lowest MLs specified in SIP Attachment 4.
(3) Monitoring shall be conducted in the afternoon, when pH and ammonia toxicity are at a maximum.
(4) Metals are the priority pollutant metals: antimony, arsenic, beryllium, cadmium, chromium III, chromium VI, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc.

IX. OTHER MONITORING REQUIREMENTS

A. Pretreatment Requirements

The Discharger shall comply with the pretreatment requirements specified in Table E-9 for influent (at monitoring location I-001), effluent (at monitoring location E-001-D), and biosolids monitoring.

Table E-9. Pretreatment and Biosolids Monitoring Requirements

Constituents	Influent	Effluent (1)	Biosolids (2)	Sample Type	
				INF-001 & EFF-001	Biosolids
VOC (3)	2/year	2/year	2/year	multiple grabs(7a)	grabs(7d)
BNA (4)	2/year	2/year	2/year	multiple grabs(7a)	grabs(7d)
Metals (5)	1/month	1/month	2/year	24-hour composite(7b)	grabs(7d)
Hexavalent Chromium (6)	1/month	1/month	2/year	multiple grabs(7a)	grabs(7d)
Mercury	1/month	1/month	2/year	24-hour composite(7b,7c)	grabs(7d)
Cyanide (5)	1/month	1/month	2/year	multiple grabs(7a)	grabs(7d)
Organophosphorus (8) Pesticides	2/year	2/year	2/year	---	---
Carbamate and Urea Pesticides (9)	2/year	2/year	2/year	---	---

Footnotes for Table E-9:

(1) The Discharger may elect to use the effluent monitoring conducted in accordance with Table E-4 to satisfy these pretreatment monitoring requirements.
(2) If the Discharger operates its solar drying operations only during the dry season, it may elect to report biosolids monitoring information once per year (during the dry season) at time when it does not stockpile biosolids. If the Discharger stockpiles biosolids, it shall report biosolids monitoring results for the stockpile once during the wet season.
(3) VOC: volatile organic compounds
(4) BNA: base/neutrals and acids extractable organic compounds
(5) The metals are arsenic, cadmium, copper, lead, nickel, silver, zinc, and selenium.
(6) The Discharger may elect to report total chromium instead of hexavalent chromium. Samples collected for total chromium measurements shall be 24-hour composites.
(7) Sample types:
   a. Multiple grabs samples for VOC, BNA, hexavalent chromium, and cyanide, must consist of a minimum of four discrete grab samples, collected at equal intervals spaced over the course of a 24-hour period, with each grab sample analyzed separately and the results mathematically flow-weighted, or with all grab samples combined (volumetrically flow-weighted) prior to analysis.
   b. If an automatic compositor is used, the Discharger shall obtain 24-hour composite samples through flow-proportioned composite sampling. Alternatively, 24-hour composite samples may consist of discrete grab samples that are combined (volumetrically flow-weighted) prior to analysis or mathematically flow-weighted.

   c. The Discharger may use automatic compositors for mercury if either (1) the compositing equipment (hoses and containers) comply with ultraclean specifications, or (2) appropriate equipment blank samples demonstrate that the compositing equipment has not contaminated the sample.

d. The biosolids sample shall be a composite of the biosolids to be disposed. Biosolids collection and monitoring shall comply with the requirements specified in Attachment H, Appendix H-3. The Discharger shall also comply with the biosolids monitoring requirements of 40 CFR 503.

(8) USEPA Method 614.
(9) USEPA Method 632.

B. Biosolids Monitoring

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

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

Modify Section F.4 as follows:

Self-Monitoring Reports

[Add the following to the beginning of the first paragraph:]

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 shall 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. This formal request shall include 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 Order has been modified to include.

2) **Monthly Reporting Requirements:** For each reporting month, an electronic SMR shall be submitted to the Regional Water Board in accordance with Section F.4 of

SMP, Part A. However, until USEPA 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 shall be submitted according to Section F.5 of SMP, Part A.

XI. 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-10. 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

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
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
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 interim

and final 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 this Order, discuss corrective actions taken or planned, and specify 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 XI.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 100%, 50%, 25%, 12.5%, and 6.25%, 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
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 refers to receiving water salinities greater than 10 ppt at least 95 percent of the time during a normal water year.
- (b) Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.
- (c) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.

ATTACHMENT F - FACT SHEET

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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 Fairfield-Suisun Wastewater Treatment Plant (Plant) and its collection system.

Table F-1. Facility Information

WDID	2 482005001
Discharger	Fairfield-Suisun Sewer District
Name of Facility	Fairfield-Suisun Wastewater Treatment Plant and its collection system
Facility Address	1010 Chadbourne Road
	Fairfield CA 94534
	Solano County
Facility Contact, Title, Phone	Kathy Hopkins, General Manager, (707)429-8930
Authorized Person to Sign and Submit Reports	Same as above
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	Yes, under Order No. 91-147
Mercury Discharge Requirements	Yes, under Order No. R2-2007-0077
Facility Permitted Flow	17.5 million gallons per day (MGD) average dry weather flow
Facility Design Flow	17.5 MGD (average dry weather treatment capacity) 34.8 MGD (peak wet weather treatment capacity)
Watershed	Suisun Basin
Receiving Water	Boynton Slough, Ledgewood Creek, Duck Ponds 1 and 2
Receiving Water Type	Estuarine
Service Areas	Cities of Fairfield and Suisun City, and unincorporated areas in Solano County
Service Area Population	132,500 (2008 estimate)

A. The Fairfield-Suisun Sewer District owns and operates the Plant and its associated collection system. The Plant provides advanced secondary treatment of the wastewater collected from its

service areas and discharges primarily to Boynton Slough, with intermittent discharges to two duck ponds, and planned intermittent discharges to Ledgewood Creek. The ownership and operation of the Plant and the collection system, including satellite collection systems, are further described in Section II of this Fact Sheet under Facility Description.

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 discharge of treated wastewater from the Plant to Boynton Slough and the duck ponds, all waters of the United States, is currently regulated by Order No. R2-2003-0072 (NPDES Permit No. CA0038024), which was adopted on August 20, 2003, became effective on November 1, 2003, and expired on September 30, 2008. Order No. R2-2003-0072 was amended by Order No. R2-2006-0045 to establish requirements for discharges to Ledgewood Creek.

C. The Discharger filed a Report of Waste Discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and NPDES permit on March 31, 2008. The application was deemed complete, and the previous Order has been administratively extended.

II. FACILITY DESCRIPTION

A. Description of Wastewater Treatment

The Discharger owns and operates the Plant and its collection system, which provides advanced secondary treatment of wastewater from domestic, commercial, and industrial sources from the City of Fairfield, Suisun City, and Travis Air Force Base. The service population is approximately 132,500 (2008 estimate). The Plant has an average dry weather design treatment capacity of 17.5 MGD. The average discharge rate is 16.7 MGD, based on flow data from 2006 to 2008, and the highest maximum daily effluent flow rate from 2006 to 2008 was 37.32 MGD.

Flow enters the Plant headworks from four pump stations. Each pump station force main has a magnetic flow meter measuring flow. The pump stations' combined flow is measured through a Parshall flume downstream of influent screening. Plant recycle (utility water) is included in the inlet pump station flow. As a result, influent flow always contains Plant recycle. The Plant recycle stream is separately sampled and metered prior to mixing with the influent flow. Then the combined flow (recycle and influent) is sampled and metered. To determine influent flow, Plant influent analyses are mathematically adjusted to arrive at influent loading exclusive of Plant recycle.

Wastewater treatment processes at the Plant include screening and grit removal, primary clarification, optional fixed film roughing filters and intermediate clarification, biological activated sludge, secondary clarification, temporary storage of activated sludge effluent in flow balancing reservoirs (total volume 12.7 million gallon (MG)), advanced secondary dual-media filtration, disinfection (chlorination), and dechlorination (sulfur dioxide). Biosolids are concentrated using dissolved air flotation thickeners, anaerobically digested, and either mechanically dewatered or dewatered by open-air solar drying beds or lagoons. Biosolids are placed in the Potrero Hills Landfill as alternative daily cover or beneficially reused through agricultural land application.

Wet weather facilities are available that include equalization storage (111 MG) with comminution and prechlorination. Flows from the wet weather facilities are returned to the Plant headworks once influent flows subside. The Plant provides containment and advanced secondary treatment of wastewater flows up to the 20-year storm event.

Chlorinated effluent flow is conveyed from the chlorine contact basin to either Discharge Point E-001, or to one of three earthen final storage reservoirs (total volume of 20.4 MG), where it is dechlorinated prior to discharge to Boynton Slough. During periods of low flow and/or low irrigation demand, stored water from the final effluent reservoirs is discharged at E-001 and is, therefore, a blend of treated wastewater from the chlorine contact chamber effluent and treated wastewater from the storage reservoirs. The outfall pipeline before E-001 can also be opened to allow the discharge of dechlorinated effluent to two privately owned and managed duck ponds in the Suisun Marsh (Discharge Points 002 and 003).

Approximately 10 percent of the Plant's treated effluent is discharged via a utility pump station that pumps chlorinated effluent from the storage reservoirs into irrigation conveyance and distribution facilities owned and operated by the Solano Irrigation District. Effluent may also be diverted from the effluent pipe to Discharge Point 001 to the irrigation system. Regional Water Board Order No. 91-147 requires reclamation for this discharge (agricultural and landscape irrigation, and industrial cooling).

Upon Executive Officer approval pursuant to section VI.C.2.h. of this Order, wet weather treated and declorinated effluent flows that exceed the capacity of the outfall at Discharge Point 001 (approximately 35 MGD) may be pumped from the utility pump station to Ledgewood Creek (Discharge Point 005). Discharge Point 005 will also provide an alternate discharge point for periods of shutdown at Discharge Point 001 and seismic redundancy for the Plant.

The Plant expansion is expected to be complete and operational by September 2009. However, additional Plant capacity is not authorized by this Order until the Discharger submits the appropriate documentation, as required by section VI.C.2.h. of the Order, and upon Executive Officer approval.

The Discharger's collection system is a separate sanitary sewer and includes 70 miles of sewer line (12 inches in diameter or greater) and 12 pump stations. Sewer lines less than 12 inches in diameter are owned and maintained by jurisdictions separate from the Discharger, including the City of Fairfield, Suisun City, and Travis Air Force Base.

Storm water originating on the Plant's grounds is directed offsite and regulated under the Statewide Industrial Storm Water Permit (NPDES General Permit No. CAS000001). The Discharger obtained coverage under this general permit effective on October 23, 1992 (Facility ID 2 48S001983).

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

B. Discharge Points and Receiving Waters

The receiving waters and the locations of the Plant discharge points are shown in Table F-2 below. Discharge Point 001 is the primary continuous discharge location, and Discharge Points 002 and 003 are intermittent discharge points. Discharge Point 004 is the discharge to the recycled water system. Discharge Point 005 is expected to be completed and operational during the term of this

permit and will also be an intermittent discharge. Compliance monitoring for this Discharger for most parameters will take place at Monitoring Location E-001-D, as described in the attached MRP. Compliance monitoring stations E-001 and E-005, as described in the attached MRP, are located at the respective outfalls prior to contact with the receiving water.

Table F-2. Outfall Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Advanced Secondary Treated Municipal Wastewater	38º 12' 33" N	122º 03' 24" W	Boynton Slough
002	Advanced Secondary Treated Municipal Wastewater	38º 12' 52" N	122º 03' 56" W	Duck Pond 1
003	Advanced Secondary Treated Municipal Wastewater	38º 12' 35" N	122º 03' 29" W	Duck Pond 2
005	Advanced Secondary Treated Municipal Wastewater	38º 14' 00" N	122º 03' 32" W	Ledgewood Creek

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

Effluent limitations contained in the previous Order (Order No. R2-2003-0072), as amended by Order No. R2-2006-0045, and representative monitoring data from the term of the previous permit are as follows:

Table F-3. Previous Effluent Limitations and Monitoring Data for Conventional and Non-Conventional Pollutants

Parameter	(units)	Effluent Limitations			Monitoring Data (From 11/03 to 08/08)		
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
BOD_5	mg/L	10	15	20	2.59(J)	5.5	8
TSS	mg/L	10	15	20	1.46	12.3	19
pH	s.u.	Within 6.5 – 8.5			Minimum – 4.6 Maximum – 9.2		
Settleable Solids	mL/L-hr	0.1	---	0.2	0.1	---	0.1
Oil and Grease	mg/L	---	---	10	---	---	5
Ammonia	mg/L	2.0	3.0	4.0	0.55	1.57	2.1
Turbidity	NTU	---	---	10	---	---	11(1)
Total Chlorine Residual	mg/L	---	---	0.0(2)	---	---	3.7(2)
Acute	%	(3)			Minimum 11-sample 90 percentile: 95%		

Toxicity	Survival		Minimum 11-sample median: 100%
Total Coliform	MPN/ 100 mL	(4)	Maximum 7-day median: 16 Maximum Single Sample: 540

Footnotes to Table F-3:

Units:

mg/L	=	milligrams per liter
mL/L-hr	=	milliliters per liter per hour
MPN/100 mL	=	Most Probable Number per 100 milliliters
NTU	=	Nephelometric turbidity units
% survival	=	percent survival

(1) Monitoring results reported as daily average.
(2) Effluent limitation and monitoring results reported as an instantaneous maximum effluent limitation.
(3) 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.
(4) The moving median value for the MPN value of total coliform bacteria in any consecutive samples was not to exceed 2.2 MPN/100mL, and no single sample was to exceed 23 MPN/100 mL.

Table F-4. Previous Effluent Limitations and Monitoring Data for Toxic Pollutants

Parameter	Units	Final Limits		Interim Limits		Monitoring Data (From 11/03 to 08/08)
		Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Highest Daily Concentration
Cadmium	µg/L	4.0	1.3	---	---	0.2
Chromium VI	µg/L	34	20	---	---	2.6
Copper	µg/L	---	---	12.3	---	9.2
Mercury	µg/L	---	---	---	0.023	0.012
Nickel	µg/L	7.1	---	---	---	8.2
Cyanide	µg/L	---	---	32	---	10
Dichlorobromomethane	µg/L	---	---	75	---	64
Bis(2-ethylhexyl)phthalate	µg/L	---	---	---	13	9(1)
4,4'-DDE	µg/L	---	---	0.05	---	(0.003)(2)
Dieldrin	µg/L	---	---	0.01	---	(0.002)(2)

Footnotes to Table F-4:

Units: µg/L = micrograms per liter

(1) The value was the highest concentration observed during the permit term but due to the Bis(2-ethylhexyl)phthalate Laboratory Analysis Study, the values prior to the Study were not used for the Reasonable Potential analysis.
(2) 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 nickel, chlorine residual, pH, total coliform, and turbidity. The exceedances are listed below:

Table F-5. Numeric Effluent Exceedances

Date of Violation	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
November 12, 2003	Nickel Daily Maximum	µg/L	7.1	8.2
January 23, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.69
January 27, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.67

Date of Violation	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
January 30, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	1.66
February 23, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.69
February 27, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.67
April 8, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.41
April 28, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.25
June 3, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.94
October 12, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.92
October 16, 2004	Chlorine Residual Instantaneous Maximum	mg/L	0.0	0.76
August 4, 2005	Total Coliform Daily Maximum	MPN/100 mL	23	41
September 4, 2005	Total Coliform Daily Maximum	MPN/100 mL	23	48
September 13, 2005	Total Coliform Daily Maximum	MPN/100 mL	23	540
December 31, 2005	Total Coliform Daily Maximum	MPN/100 mL	23	104
January 1, 2006	Total Coliform 7-sample Median	MPN/100 mL	2.2	10
January 3, 2006	Turbidity Daily Average	NTU	10	11
January 3, 2006	Total Coliform Daily Maximum	MPN/100 mL	23	26
January 4, 2006	Total Coliform Daily Maximum	MPN/100 mL	2.2	10
January 5, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	10
January 6, 2006	Total Coliform Daily Maximum	MPN/100 mL	23	71
January 6, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	16
January 7, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	10
January 8, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	10
January 9, 2006	Total Coliform Daily Maximum	MPN/100 mL	23	186
January 9, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	10
January 10, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	5
January 11, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	5
January 11, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	9
January 12, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	9
January 13, 2006	Total Coliform Daily Maximum	MPN/100 mL	23	26
January 13, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	9
January 14, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	9
January 15, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	9
January 16, 2006	Total Coliform 7-Sample Median	MPN/100 mL	2.2	4
August 28, 2007	Total Coliform Daily Maximum	MPN/100 mL	23	33

The Regional Water Board issued an Expedited Mandatory Minimum Penalties (MMPs) letter for violations incurred from May 14, 2003, to August 28, 2008, dated November 3, 2008. The Regional Water Board assessed $99,000 for a total of 33 violations subject to MMPs. The Discharger accepted the offer to participate in the expedited payment program on December 1, 2008.

2. **Compliance with Previous Permit Provisions.** A list of special activities required by the previous Order and the status of those requirements are shown in Table F-6, below.

Table F-6. Compliance with Previous Order Provisions

Provision Number	Requirement	Status of Completion
E.2	Cyanide Compliance Schedule and Cyanide Site Specific Objective Study	Status reports submitted annually through Bay Area Clean Water Agencies
E.3	Dichlorobromomethane Source Reduction Compliance Schedule and Attainability Analysis	Final report submitted April 12, 2007
E.4	Bis(2-ethylhexyl)phthalate Laboratory Analysis Study	Final report submitted April 12, 2007
E.5	Site-Specific Translator Study	Final report submitted June 30, 2008
E.8	Optional Receiving Water Beneficial Use and Alternate Bacteriological Limits Study	Report submitted February 14, 2007
E.9	Dry Weather Flow Capacity Analysis	Submittal dated October 24, 2005 included: • Antidegradation Analysis for Proposed Wastewater Treatment Plant Discharge Modification • Fairfield-Suisun Sewer District Sewer System and Treatment Plant Master Plan • Draft Environmental Impact Report (EIR) Submittal dated July 18, 2008 included: • Final EIR

E. Planned Changes

The Discharger plans to expand its treatment plant capacity to 23.7 MGD as an average dry weather flow, with a peak wet weather capacity of 52.3 MGD. Plant modifications are expected to be complete and operational by September 2009. This Order will allow increased treatment capacity in accordance with the requirements of section VI.C.2.e of this Order.

The treatment plant expansion includes the addition of one grit removal basin; one circular primary clarifier; post-roughing filter flow split structure; one intermediate clarifier; two activated sludge aeration basins; two circular secondary clarifiers; and a new outfall line to Ledgewood Creek. The outfall line was completed in August 2008. Wet weather flow equalization basins will continue to be used during and after the Plant expansion, and flows from the equalization basins will be returned to the Plant for full treatment after storm flows recede.

The Regional Water Board adopted a permit amendment, Order No. R2-2006-0045, on July 12, 2006, that amended Order No. R2-2003-0072 to allow an increase in dry weather discharge from 15.5 MGD to 23.7 MGD and to allow discharge to Ledgewood Creek through a separate outfall. During the permit amendment process, the Discharger completed an Engineering Analysis and an Environmental Impact Report for the construction of the additional facilities and the new outfall to Ledgewood Creek. The Discharger also completed a master plan for its collection system and has an ongoing preventive maintenance and capital improvement program for the collection system components to ensure adequate reliability and capacity.

To support the increase in average dry weather effluent flows to 23.7 MGD and the new discharge to Ledgewood Creek, the Discharger prepared an antidegradation analysis. Finding 13 of the permit amendment addressed antidegradation, which stated:

To support the increase in permitted capacity to 23.7 MGD average dry weather flow, the Discharger prepared an antidegradation analysis in accordance with guidance contained in State Water Resources Control Board Administrative Procedures Update No. 90-04. The analysis indicated that the increase in permitted dry weather discharge to 23.7 MGD is necessary to accommodate planned growth within the Discharger's service area and is otherwise consistent with federal and state antidegradation policies. The increased discharge will have no measurable effect on the water quality of Suisun Slough, Grizzly Bay, Suisun Bay, or other segments of greater San Francisco Bay.

Upon approval of the documentation required by Provision VI.C.2.g of the Order, the permitted dry weather discharge rate will increase to 23.7 MGD.

The Discharger is also designing a UV disinfection system which it expects to be operational by 2011.

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 USEPA and California Water Code (CWC) Chapter 5.5, Division 7 (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 states that the beneficial uses of any specifically identified water body generally apply to its tributaries. The Basin Plan does not specifically identify beneficial uses for Boynton Slough, but does identify present and potential uses for Suisun Slough, to which Boynton Slough is tributary. The beneficial uses of Ledgewood Creek are specifically identified by the Basin Plan. The Basin Plan specifically identifies the beneficial uses of Suisun Slough, to

which Boynton Slough is tributary. The Basin Plan also specifically identifies the beneficial uses of Suisun March, to which the duck ponds are tributary.

The Discharger has performed plant community studies in Boynton Slough and Ledgewood Creek that show brackish marsh plants are present throughout the study area, indicating a tidal influence on each of these receiving waters. 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 tidal influence on these receiving waters, total dissolved solids levels are expected to exceed 3,000 milligrams per liter (mg/L) and thereby meet an exception to State Water Board Resolution No. 88-63. The MUN designation does not apply to the receiving waters for this discharge. Beneficial uses applicable to Boynton Slough, Ledgewood Creek, and the duck ponds are summarized in Table F-7.

Table F-7. Beneficial Uses of Boynton Slough, Ledgewood Creek, and Duck Ponds

Discharge Point	Receiving Water Name	Beneficial Uses
001	Boynton Slough (Tributary to Suisun Slough)	Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)
002 and 003	Duck Ponds 1 and 2 (Both tributary to Suisun Marsh)	Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Fish Spawning (SPWN) Wildlife Habitat (WILD)
005	Ledgewood Creek	Freshwater Replenishment (FRSH) Cold Freshwater Habitat (COLD) Fish Migration (MIGR) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2)

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 the receiving waters for this Discharger.

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 USEPA promulgated for California through the NTR and to the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria USEPA promulgated 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.

   Resolution No. 68-16 requires:

   > *Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such high quality will be maintained until it has been demonstrated to the State that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than prescribed in the policies; and*
   >
   > *Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) pollution or a nuisance will not occur and (b) the highest water quality consistent with the maximum benefit to the people of the State will be maintained.*

   Final effluent limitations limits in this Order comply with applicable State and federal antidegradation requirements and meet the requirements of the SIP. The increase in the rate of discharge authorized by the Order is consistent with applicable State and federal antidegradation policies. Compliance with antidegradation policies is discussed in section IV.D.6 of this Fact Sheet.

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, USEPA approved a revised list of impaired water bodies (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. Suisun Marsh Wetlands appears on the 303(d) List for metals, nutrients, low dissolved oxygen, and salinity. The potential sources indicated for these 303(d)-listed pollutants are agriculture, urban runoff/storm sewers, and flow regulation/modification. 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 within the next ten years. TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, and are intended to result in achieving the water quality standards for the impaired waterbodies. USEPA adopted a mercury TMDL for San Francisco Bay on February 12, 2008. 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 before discharges can occur. Discharges not described in the Report of Waste Discharge, and subsequently in this Order, are prohibited.

2. **Discharge Prohibition III.B (No bypass or overflow of untreated or partially treated wastewaters):** This prohibition is retained from the previous permit and based on 40 CFR 122.41(m) (see federal Standard Provisions, Attachment D, section G).

3. **Discharge Prohibition III.C (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 17.5 MGD may result in lowering the reliability of achieving compliance with water quality requirements. This prohibition allows for an increase in the permitted average dry weather effluent flow to 23.7 MGD, upon submittal of proper documentation to the Regional Water Board in accordance with section VI.C.2.h. of the Order, and following approval of that documentation by the Executive Officer.

4. **Discharge Prohibition III. D (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. Publicly-owned treatment works (POTWs) must achieve secondary treatment, at a minimum, and any more stringent limitations that are 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. Exceptions to Basin Plan Prohibitions

Basin Plan Table 4-1 (Discharge Prohibitions) states it shall be prohibited to discharge:

1. *Any wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimal initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof.*

3. *Any wastewater which has particular characteristics of concern to beneficial uses of Suisun Marsh during the dry weather period of the year.*

Basin Plan section 4.2 provides that exceptions to Basin Plan Prohibitions 1 and 3 may be considered where:

- *An inordinate burden would be placed on the discharger relative to beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means, such as an alternative discharge site; a higher level of treatment, and/or improved treatment reliability; or*

- *A discharge us approved as part of a reclamation project; or*

- *It can be demonstrated that net environmental benefits will be derived as a result of the discharge; or*
- *A discharge is approved as part of a groundwater clean-up project….*

The Basin Plan also states that the reliability of the Discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequences of such discharges will be considered in reviewing requests for exceptions to these prohibitions.

The discharge from the Plant is to a confined slough and inland creek, where a minimal dilution of 10:1 is not achieved. In addition, the locations of the discharges at Discharge Points 001, 002, 003, and 005 are within the Suisun Marsh.

In 1985, through NPDES permit reissuance Order No. 85-53, the Regional Water Board granted an exception to the prohibitions above, provided that the discharge affords a net environmental benefit and the Discharger complies with the requirements of its permit. The requirements of that permit included the following: maximize reclaimed water use for irrigation, prepare emergency wastewater storage, complete technical reports on maximizing reclaimed water use and discharge impacts on beneficial uses, and implement report recommendations.

In 1990, through NPDES permit reissuance of Order No. 90-101, the Regional Water Board found that the Discharger had achieved compliance with the requirements of Order No. 85-53, as described below:

(1) Effluent discharged for reclamation through the Solano Irrigation District distribution system increased from 22% of the Plant's annual average effluent flow in 1985, to 40% in 1989.

(2) In 1987, the Discharger completed construction of flow equalization and storage facilities that included the required renovation of existing basins for emergency storage, as well as addition of a flow equalization clarifier and use of two existing on-site lagoons for additional storage capacity. These facilities provide storage capacity of 12.6 MG and can be used for storage of peak wet weather flows or emergency storage in the event of a Plant upset.

(3) In 1987, the Discharger completed the required technical report about the effects of the discharge on water quality and protection of beneficial uses (*Technical Report on Water Quality, Fairfield-Suisun Sewer District Subregional Wastewater Treatment Plant*, dated September 1987). The report evaluated existing water quality data to determine the discharge's impacts on Boynton Slough and the degree of environmental benefit, if any, from the effluent discharge. The report demonstrated that the discharge had some measurable local effects on Boynton Slough, but that these effects did not significantly impair any beneficial uses. Beneficial uses that require the input of fresh water were found to be more fully achieved as a result of the effluent discharge. The report concluded that, overall, on a year-round basis, the discharge afforded a net environmental benefit to Boynton Slough and the Suisun Marsh.

In 1992, construction was completed on additional facilities to provide increased storage capacity for peak wet weather flows and to provide improved flexibility and redundancy in the treatment process. These facilities, identified by the Discharger as the Stage IA project, included

a 55 MG capacity earthen equalization basin, an equalization flow clarifier with comminution and prechlorination equipment, and a third oxidation tower. The project increased flow equalization storage capacity from 12.6 MG to 55 MG and provided containment and treatment of all wastewater flows up to a 20 year storm event. This approach to wet weather flow management was in accord with the Basin Plan's wet weather overflow control strategy. The third oxidation tower provided increased redundancy in the treatment process and allowed for servicing of any one tower, without reducing treatment performance or reliability.

The Regional Water Board found that the water reuse program implemented by the Discharger complied with the exception provision of the Basin Plan. The Regional Water Board thereby granted an exception to the discharge prohibition to discharge advanced secondary treated effluent to Boynton Slough and to the managed duck ponds of Suisun Marsh, provided the Discharger would continue to:

(1) Provide high quality treated effluent;

(2) Operate all treatment facilities to ensure high reliability and redundancy;

(3) Implement a source control program for any regulated chemical constituents measured at levels in violation of permit effluent limitations;

(4) Implement measures to maintain, repair, and upgrade the existing wastewater facilities so as to ensure continued operation and treatment capability in conformance with permit requirements;

(5) Progress toward construction of expanded or upgraded treatment facilities (See Section II.E. Planned Changes). These facilities were to be designed to ensure adequate capacity for community wastewater needs, and an adequate and reliable treatment process developed with sufficient flexibility and redundancy to provide for compliance with permit requirements as necessary to protect beneficial uses of Boynton Slough, Suisun Marsh, and Suisun Slough, in the vicinity of the discharge;

(6) Promote and encourage beneficial reuse of treated wastewater, e.g., provide treated effluent to the managed duck ponds of Suisun Marsh; and

(7) Work to use the maximum feasible amount of reclaimed effluent for irrigation and minimize discharges to Boynton Slough during dry weather.

Relying on similar bases, the Regional Water Board continued to grant the exceptions to the Basin Plan discharge prohibitions through Order Nos. 98-077 and R2-2003-0072.

The Regional Water Board finds that the discharges to Boynton Slough and the managed duck ponds continue~~s~~ to provide a net environmental benefit, and the discharge to Ledgewood Creek will provide a net environmental benefit. Therefore, pursuant to Basin Plan Section 4.2, these discharges qualify for an exemption from the prohibition against discharges receiving less than 10:1 dilution provided that the Discharger continues to do the following:

(1) provide treated effluent to the managed duck ponds,

(2) reclaim and reuse the maximum feasible amount of treated wastewater for irrigation and minimize discharges to Boynton Slough and Ledgewood Creek during dry weather,

(3) achieve the advanced level of treatment required by this Order, reflecting a level of protection equivalent to strict adherence to the discharge prohibitions,

(4) operate all treatment facilities to ensure high reliability and redundancy,

(5) implement a source control program for any regulated chemical constituents measured at levels in violation of permit effluent limitations, and

(6) implement measures to maintain, repair, and upgrade the existing wastewater facilities so as to ensure continued operation and treatment capability in conformance with permit requirements.

If these assumptions prove incorrect or not met, the Regional Water Board may reconsider granting this exception.

C. 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-8. 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 to Table F-8:
(1) In addition, the 30-day average percent removal shall not be less than 85 percent.

The Plant provides advanced secondary treatment and has consistently met limitations on conventional pollutants that are more stringent than required by the federal secondary treatment standards described above. These more stringent limits are necessary to ensure that the plant continues to provide a high-quality effluent suitable for unrestricted reuse, and that provides a net environmental benefit to the receiving water. These are the bases for the exception to the Basin Plan's prohibition against discharges receiving less than ten to one dilution granted to the Discharger.

The Discharger has complied with the BOD effluent limitations, and has not caused or contributed to a violation of the receiving water limits on dissolved oxygen over the term of Order R2-2003-0072. A comparison of the Discharger's effluent data to receiving water data shows that its effluent usually contains more oxygen than the receiving water. Hence, we conclude that the BOD effluent limits are sufficient to prevent the discharge from causing or contributing to violations of dissolved oxygen water quality standards.

2. Applicable Effluent Limitations

This Order retains the effluent limitations for conventional and non-conventional pollutants, applicable to Discharge Points 001, 002, 003, and 005, from Order No. R2-2003-0072, except where noted below.

Effluent limitations for BOD and TSS, including the 85% removal requirement, are retained from Order No. R2-2003-0072. 40 CFR 122.45(d)(2) specifies that these discharge limitations for POTWs shall be stated as average weekly limitations and average monthly limitations, unless impracticable.

The limitation established for Oil and Grease are levels attainable by secondary treatment and are required by 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. R2-2003-0072 and is required by Basin Plan Table 4-2 for shallow water discharges.

The effluent limitation for turbidity is retained from the previous permit.

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

The effluent limitation for enterococcus bacteria is new. It replaces the total coliform bacteria limitations of the previous Order. This 30-day geometric mean enterococcus effluent limitation is based on the freshwater steady state limitation for contact recreation contained in Basin Plan Table 3-2 and is based on USEPA criteria at 40 CFR 131.41 for coastal recreational waters, including costal estuaries, in California. These water quality criteria became effective on December 16, 2004 [69 Fed. Register 67218 (November 16, 2006)].

Although USEPA also established single sample maximum criteria for enterococci bacteria, this Order implements only the geometric mean criterion of 33 colonies per 100 milliliters as an effluent limitation. When these water quality 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 …” [69 Fed Reg. 67224 (November 16, 2004)].

The technology-based effluent limitations for settleable matter are not retained from Order No. R2-2003-0072, because 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 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).

D. 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. SIP 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, "all 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, "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." Effluent limitations and provisions 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 CTR criteria.

Human health criteria are further identified as "water and organisms" and "organisms only." Because the receiving waters are not designated for the MUN beneficial use, the CTR criteria applicable to "organisms only" were used for the RPA.

c. NTR. The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento River-San Joaquin River Delta. These NTR criteria apply to Boynton Slough, Ledgewood Creek, and the duck ponds.

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 WQOs. 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 shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance. Receiving water salinity data collected at all receiving water stations from March 2005 through July 2008 indicate that 87% of the salinity data were greater than 1 ppt but less than 10 ppt, which the Basin Plan defines as estuarine.

The Discharger has also performed plant community studies in the Boynton Slough and Ledgewood Creek areas that indicate that the receiving waters are tidally influenced. Furthermore, all receiving waters (Boynton Slough, Ledgewood Creek, and the duck ponds) are located within the Suisun Marsh, which is specifically identified by the Basin Plan as supporting the estuarine habitat beneficial use. The Reasonable Potential Analysis (RPA) and effluent limitations in this Order are therefore based on the more stringent of the fresh and salt water criteria.

e. Receiving Water Hardness. Ambient hardness values are used to calculate freshwater WQOs that are hardness dependent. Insufficient hardness data were available to calculate an adjusted geometric mean from the data collected during the term of the previous permit after the data set was censored for hardness greater than 400 mg/L and salinity greater than 1 ppt. The WQOs for this Order were therefore determined using a hardness of 268 mg/L as $CaCO_3$, which was calculated in the previous permit as the adjusted geometric mean of 145 data points (after censoring the original data set, collected in Boynton Slough and adjacent sloughs to eliminate samples with hardness values greater than 400 mg/L or salinity values greater than 1 ppt). Receiving water hardness data were not available for Ledgewood Creek, and because the previous permit amendment (Order No. R2-2006-0045) indicated that receiving water conditions in Ledgewood Creek are similar to those in Boynton Slough and adjacent sloughs, the same hardness assumption was made for all outfalls.

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 permits; 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.

Regional Water Board staff developed site-specific translators for hexavalent chromium, copper, nickel, and zinc using data for dissolved and total metals collected by the Discharger in 2000 and 2001 during five sampling events. The following table shows the translators used for this Order. In determining the need for and calculating WQBELs for all other metals, default translators established by the USEPA in the CTR at 40 CFR 131.38(b)(2), Table 2, were used.

Table F-9. Site-Specific Translators

Pollutant	Site-Specific Translators	
	Acute	Chronic
Chromium VI	0.46	0.23
Copper	0.64	0.46
Nickel	0.91	0.51
Zinc	1.0	0.68

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 a WQBEL is required. For non-priority pollutants, Regional Water Board staff used available monitoring data, the receiving water's beneficial uses, and previous permit limitations to determine Reasonable Potential. For priority pollutants, Regional Water Board staff used the methods prescribed in SIP Section 1.3 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 SIP Section 1.3, 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 USEPA established in the NTR and CTR.

b. Reasonable Potential Methodology

Consistent with the methods and procedures prescribed in SIP Section 1.3,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 $\geq$ 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 CWC Section 13267) 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 November 2003 through July 2008 for most inorganic pollutants, and from March 2005 through March 2008 for most organic pollutants. For bis(2-ethylhexyl)phthalate, due to the Bis(2-ethylhexyl)phthalate Laboratory Analysis Study, the values prior to the study were not used for the Reasonable Potential analysis. Therefore, the RPA used data from the study from September 2006 to August 2008.

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 Regional Monitoring Program (RMP) station located in the Sacramento River is a far-field background station that 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.

The RMP has not analyzed all the constituents listed in the CTR. 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 *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 Sacramento River RMP station, and additional data from BACWA's *Ambient Water Monitoring: Final CTR Sampling Update* (2004) for the Sacramento River RMP station. The Discharger may use the receiving water study provided by BACWA to fulfill all requirements of the August 6, 2001, Letter for receiving water monitoring in this Order.

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 are zinc, cyanide, chlorodibromomethane, dichlorobromomethane, and total ammonia by Trigger 1; dioxin-TEQ by Trigger 2; and copper by Trigger 3.

Discharges of mercury are 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 regulated by means other than this Order.

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	0.34	No
2	Arsenic	**1.2**	36	3.7	No
3	Beryllium	< 0.041	No Criteria	0.126	No
4	Cadmium	**0.2**	2.5	0.066	No
5a	Chromium (III)	**1.2**	464	Not Available	No

CTR #	Priority Pollutants	MEC or Minimum DL [(a)(b)] (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL [I(a)(b)] (µg/L)	RPA Results [(c)]
5b	Chromium (VI)	**2.6**	35	Not Available	No
6	**Copper**	**9.2**	**13**	**9.9**	**Yes**
7	Lead	**1.1**	8.5	2.3	No
8	Mercury (303d listed)	---	---	---	---
9	Nickel (303d listed) [(d)]	8.2	16 (8.2)	22 (3.2)	No
10	Selenium (303d listed)	**4**	5	0.45	No
11	Silver	**0.06**	2.2	0.057	No
12	Thallium	**0.08**	6.3	0.143	No
13	Zinc	**46**	90	18	No
14	**Cyanide**	**10**	**2.9**	**0.5**	**Yes**
15	Asbestos	No Effluent Data	No Criteria	Not Available	No
16	2,3,7,8-TCDD	< 6.4E-08	1.4E-08	6.0E-09	No
	Dioxin TEQ (303d listed)	**3.02E-09**	**1.4E-08**	**4.8E-08**	**Yes**
17	Acrolein	**2**	780	< 0.5	No
18	Acrylonitrile	< 0.33	0.66	< 0.02	No
19	Benzene	< 0.03	71	< 0.05	No
20	Bromoform	**8.8**	360	< 0.5	No
21	Carbon Tetrachloride	**0.7**	4.4	0.06	No
22	Chlorobenzene	< 0.03	21000	< 0.5	No
23	**Chlorodibromomethane**	**44**	**34**	**< 0.05**	**Yes**
24	Chloroethane	< 0.03	No Criteria	< 0.5	Ud
25	2-Chloroethylvinyl ether	< 0.1	No Criteria	< 0.5	Ud
26	Chloroform	**72**	No Criteria	< 0.5	Ud
27	**Dichlorobromomethane**	**64**	**46**	**< 0.05**	**Yes**
28	1,1-Dichloroethane	< 0.04	No Criteria	< 0.05	No
29	1,2-Dichloroethane	< 0.04	99	0.04	No
30	1,1-Dichloroethylene	< 0.06	3.2	< 0.5	No
31	1,2-Dichloropropane	< 0.03	39	< 0.5	No
32	1,3-Dichloropropylene	< 0.03	1700	Not Available	No
33	Ethylbenzene	< 0.04	29000	< 0.5	No
34	Methyl Bromide	< 0.05	4000	< 0.5	No
35	Methyl Chloride	**0.4**	No Criteria	< 0.5	Ud
36	Methylene Chloride	**0.7**	1600	< 0.5	No
37	1,1,2,2-Tetrachloroethane	< 0.04	11	< 0.05	No
38	Tetrachloroethylene	**0.06**	8.9	< 0.05	No
39	Toluene	**3.2**	200000	< 0.3	No
40	1,2-Trans-Dichloroethylene	< 0.05	140000	< 0.5	No
41	1,1,1-Trichloroethane	< 0.03	No Criteria	< 0.5	No
42	1,1,2-Trichloroethane	< 0.05	42	< 0.05	No
43	Trichloroethylene	< 0.05	81	< 0.5	No
44	Vinyl Chloride	**0.09**	525	< 0.5	No
45	2-Chlorophenol	< 0.7	400	Not Available	No
46	2,4-Dichlorophenol	< 0.7	790	< 1.3	No
47	2,4-Dimethylphenol	< 0.8	2300	< 1.3	No
48	2-Methyl- 4,6-Dinitrophenol	< 0.6	765	< 1.2	No
49	2,4-Dinitrophenol	< 0.6	14000	< 0.7	No
50	2-Nitrophenol	< 0.6	No Criteria	< 1.3	Ud
51	4-Nitrophenol	< 0.6	No Criteria	< 1.6	Ud
52	3-Methyl 4-Chlorophenol	< 0.6	No Criteria	< 1.1	Ud
53	Pentachlorophenol	< 0.6	7.9	< 1	No
54	Phenol	< 0.6	4600000	< 1.3	No
55	2,4,6-Trichlorophenol	< 0.6	6.5	< 1.3	No
56	Acenaphthene	< 0.03	2700	0.0019	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)]
57	Acenaphthylene	< 0.02	No Criteria	0.000492	Ud
58	Anthracene	< 0.02	110000	0.000389	No
59	Benzidine	< 1	0.00054	< 0.0003	No
60	Benzo(a)Anthracene	< 0.02	0.049	0.0011	No
61	Benzo(a)Pyrene	< 0.02	0.049	0.0008215	No
62	Benzo(b)Fluoranthene	< 0.02	0.049	0.0019	No
63	Benzo(ghi)Perylene	< 0.02	No Criteria	0.0012465	Ud
64	Benzo(k)Fluoranthene	< 0.02	0.049	0.000928	No
65	Bis(2-Chloroethoxy)Methane	< 0.7	No Criteria	< 10	Ud
66	Bis(2-Chloroethyl)Ether	< 0.7	1.4	< 0.3	No
67	Bis(2-Chloroisopropyl)Ether	< 0.6	170000	Not Available	No
68	Bis(2-Ethylhexyl)Phthalate [(e)]	1.6	5.9	0.69	No
69	4-Bromophenyl Phenyl Ether	< 0.8	No Criteria	< 0.23	Ud
70	Butylbenzyl Phthalate	**0.9**	5200	< 0.5	No
71	2-Chloronaphthalene	< 0.6	4300	< 0.3	No
72	4-Chlorophenyl Phenyl Ether	< 0.9	No Criteria	< 0.3	Ud
73	Chrysene	< 0.02	0.049	0.001067	No
74	Dibenzo(a,h)Anthracene	< 0.02	0.049	0.00067	No
75	1,2-Dichlorobenzene	< 0.03	17000	< 0.3	No
76	1,3-Dichlorobenzene	< 0.03	2600	< 0.3	No
77	1,4-Dichlorobenzene	**0.1**	2600	< 0.3	No
78	3,3 Dichlorobenzidine	< 0.6	0.077	< 0.0002	No
79	Diethyl Phthalate	< 0.6	120000	Not Available	No
80	Dimethyl Phthalate	< 0.6	2900000	Not Available	No
81	Di-n-Butyl Phthalate	< 0.6	12000	1.72	No
82	2,4-Dinitrotoluene	< 0.6	9.1	< 0.27	No
83	2,6-Dinitrotoluene	< 0.5	No Criteria	< 0.29	Ud
84	Di-n-Octyl Phthalate	< 0.7	No Criteria	Not Available	Ud
85	1,2-Diphenylhydrazine	< 0.6	0.54	0.0087	No
86	Fluoranthene	< 0.02	370	0.0034255	No
87	Fluorene	< 0.02	14000	0.0024	No
88	Hexachlorobenzene	< 0.7	0.00077	0.000109	No
89	Hexachlorobutadiene	< 0.7	50	< 0.3	No
90	Hexachlorocyclopentadiene	< 0.8	17000	< 0.3	No
91	Hexachloroethane	< 0.6	8.9	< 0.2	No
92	Indeno(1,2,3-cd)Pyrene	< 0.02	0.049	0.001317	No
93	Isophorone	< 0.5	600	< 0.3	No
94	Naphthalene	< 0.02	No Criteria	0.00681	Ud
95	Nitrobenzene	< 0.7	1900	< 0.25	No
96	N-Nitrosodimethylamine	< 0.6	8.1	< 0.3	No
97	N-Nitrosodi-n-Propylamine	< 0.6	1.4	< 0.0002	No
98	N-Nitrosodiphenylamine	< 0.6	16	< 0.001	No
99	Phenanthrene	< 0.02	No Criteria	0.003442	Ud
100	Pyrene	< 0.02	11000	0.00358	No
101	1,2,4-Trichlorobenzene	< 0.8	No Criteria	< 0.3	No
102	Aldrin	< 0.002	0.00014	0.00000404	No
103	Alpha-BHC	< 0.002	0.013	0.0003468	No
104	Beta-BHC	< 0.002	0.046	0.000118	No
105	Gamma-BHC	< 0.002	0.063	0.0010032	No
106	Delta-BHC	< 0.002	No Criteria	0.000038	Ud
107	Chlordane (303d listed)	< 0.02	0.00059	0.0003	No
108	4,4'-DDT (303d listed)	< 0.002	0.00059	0.000349	No
109	4,4'-DDE (linked to DDT)	< 0.003	0.00059	0.00092	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)]
110	4,4'-DDD	< 0.002	0.00084	0.000347	No
111	Dieldrin (303d listed)	< 0.002	0.00014	0.00038	No
112	Alpha-Endosulfan	< 0.002	0.0087	0.0000571	No
113	beta-Endolsulfan	< 0.002	0.0087	0.0000424	No
114	Endosulfan Sulfate	< 0.002	240	0.000284	No
115	Endrin	< 0.002	0.0023	0.00015	No
116	Endrin Aldehyde	< 0.002	0.81	Not Available	No
117	Heptachlor	< 0.003	0.00021	0.000011	No
118	Heptachlor Epoxide	< 0.002	0.00011	0.000097	No
119-125	PCBs sum (303d listed)	< 0.02	0.00017	0.0007923	No
126	Toxaphene	< 0.15	0.0002	Not Available	No
	Tributylin	< 0.00017	0.0074	0.00214	No
	Total PAHs	< 0.02	15	0.0175332	No
	Total Ammonia (mg/L N)	**2.1**	**2.05**	**0.6**	**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) RPA 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 criteria have been promulgated or there are insufficient data.

(d) Dissolved nickel values are shown in parenthesis. Comparing dissolved nickel background data to the dissolved nickel WQO does not trigger RP. Since only total nickel was measured in the effluent, the translated nickel WQO was used for that part of the analysis (similar to the other metals).

(e) Bis(2-ethylhexyl)phthalate background data with reporting limits exceeding the water quality objective were not used in the RPA because data from concurrently collected and analyzed samples with lower reporting limits were available. In addition, only effluent data collected using clean sampling techniques was used in the RPA.

(1) Constituents with limited data. 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 sources of the increases (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. R2-2003-0072 included WQBELs for cadmium and chromium; however, because the RPA showed that discharges from the Plant no longer demonstrate Reasonable Potential for these pollutants, this Order does not retain these effluent limitations. This is consistent with State Water Board Order No. 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 SIP Section 1.4. The WQOs used for each pollutant with Reasonable Potential are discussed in Section 4.d below.

b. Shallow/Deep Water Discharge

Discharges from the Plant to Boynton Slough, Ledgewood Creek, and the duck ponds are shallow water discharges. The outfall at Discharge Point 001 is submerged under most conditions, except during extreme low tides, and the outfall at Discharge Point 005 is on the shoreline and only possibly submerged during wet weather.

c. Dilution Credit

The shallow receiving waters support biologically sensitive and critical habitats. Therefore, no dilution credit (D=0) was used to calculate WQBELs for most pollutants, with the exception of cyanide, which is a non-persistent pollutant that readily degrades to a non-toxic state. Cyanide attenuates in receiving waters due to both degradation and dilution. Dilution credits for cyanide for specific shallow water discharges, including that to Boynton Slough at E-001, are established in the Basin Plan. The dilution credit accounts for attenuation of cyanide in the receiving water. A dilution ratio of 4:1 (D = 3) has been applied in calculating effluent limitations for cyanide at E-001; however, SIP requirements for granting a mixing zone and dilution credits have not been met for the other outfalls (E-002, E-003, and E-005).

SIP Section 1.4.2.1's requirements for granting dilution credits and mixing zones for incompletely mixed discharges were addressed by the *Staff Report on Proposed Site-Specific Water Quality Objectives for Cyanide for San Francisco Bay,* prepared by the Regional Water Board dated December 4, 2006 (Cyanide SSO Staff Report). Flow Science Inc., of Pasadena, CA, completed a mixing zone study for FSSD in 2004. This study modeled the dilution characteristics of the discharge from E-001 to Boynton Slough, and showed that impacts from Fairfield-Suisun's discharge were insensitive to water-year conditions, and highly localized in Boynton Slough and the connecting reach of Suisun Slough (Cyanide SSO Staff Report, Appendix E, Page E-4).

SIP Section 1.4.2.2's mixing zone conditions are also addressed by the Cyanide SSO Staff Report, which finds:

(1) The mixing zone does not compromise the integrity of the receiving water. The area of the mixing zone is 3.5 acres, versus the area of the receiving water, which is 35 acres (Cyanide SSO Staff Report, Appendix D, Table 1).

(2) The mixing zone does not cause acutely toxic conditions to aquatic life passing through the mixing zone. This finding is based on analysis of the sensitivity of

receptor species to cyanide compared with the measured levels of total cyanide along the discharge gradients of shallow water dischargers. These concentrations are less than the threshold acute toxicity levels and are not anticipated to increase (Cyanide SSO Staff Report, Appendix J, Page J-5).

(3) The mixing zone does not restrict the passage of aquatic life. Cyanide is not known to interfere with the movement of aquatic species and does not restrict the passage of aquatic life (Cyanide SSO Staff Report, Appendix J, Page J-6). Boynton Slough, the receiving water for discharge point E-001, is a dead-end slough through which there is nowhere for fish to migrate.

(4) The mixing zone does not adversely impact biologically sensitive or critical habitats. The Cyanide SSO Staff Report, Appendix J, Page J-6, discusses this issue specifically for FSSD and finds that there no anticipated impacts to Delta Smelt habitat, or other biologically sensitive habitats.

(5) The cyanide within the mixing zone does not produce undesirable or nuisance aquatic life. At the concentrations in question, cyanide is not known to produce undesirable or nuisance aquatic life (Cyanide SSO Staff Report, Appendix J, Page J-9).

(6) The cyanide within the mixing zone does not result in floating debris, oil, or scum. At the concentrations in question, cyanide is not known to result in floating debris, oil, or scum (Cyanide SSO Staff Report, Appendix J, Page J-9).

(7) The cyanide within the mixing zone does not produce objectionable color, odor, taste, or turbidity. At the concentrations in question, cyanide is not known to produce objectionable color, odor, taste, or turbidity (Cyanide SSO Staff Report, Appendix J, Page J-9).

(8) The cyanide within the mixing zone does not cause objectionable bottom deposits. At the concentrations in question, cyanide is not known to cause objectionable bottom deposits (Cyanide SSO Staff Report, Appendix J, Page J-9).

(9) The cyanide within the mixing zone does not cause a nuisance. At the concentrations in question, cyanide is not known to cause nuisance (Cyanide SSO Staff Report, Appendix J, Page J-9).

(10) The mixing zone does not dominate the receiving water body or overlap a mixing zone from different outfalls. The proposed mixing zone for FSSD represents only a portion of the immediate receiving water body, as noted above, and an even smaller percentage of the larger water body, Suisun Marsh (Cyanide SSO Staff Report, Appendix J, Page J-9).

(11) The mixing zone is not located at or near any drinking water intake (Cyanide SSO Staff Report, Appendix J, Page J-9).

The mixing zone established by Regional Water Board Resolution R2-2006-0086 stretches from the outfall in Boynton Slough to a point approximately 15,000 feet from the outfall, between receiving water monitoring points RSW-004 and RSW-005 (Cyanide

SSO Staff Report, Appendix D, Page D-6). The mixing zone was selected to be as small as practicable while meeting the conditions of SIP section 1.4.2.2. This mixing zone is based on the percent effluent modeled at that location, and does not consider degradation of cyanide. The actual cyanide attenuation at this point is therefore likely greater than that modeled.

d. Calculation of Pollutant-Specific WQBELs

(1) Copper

(a) Copper WQC. The site-specific chronic and acute marine WQC for copper from the Basin Plan are 6.0 and 9.4 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 0.46 (chronic) and 0.64 (acute), as described in IV.C.2.g, above. The resulting chronic water quality criterion of 13 µg/L and acute water quality criterion of 15 µg/L were used to perform the RPA.

(b) RPA Results. This Order establishes effluent limitations for copper because the Basin Plan requires that limitations are established due to Reasonable Potential by Trigger 3.

(c) Copper WQBELs. Final WQBELs for copper, calculated according to SIP procedures (using a CV of 0.5 and no dilution credit), are an AMEL of 7.9 µg/L and an MDEL of 15 µg/L.

(d) Immediate Compliance Infeasible. Statistical analysis of effluent data for copper, collected over the period of November 2003 to July 2008, shows that the 95th percentile (9.0 µg/L) is greater than the AMEL (7.9 µg/L); the 99th percentile (13 µg/L) is less than the MDEL (15 µg/L); and the mean (3.8 µg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (5.4 µg/L). The Regional Water Board concludes therefore that immediate compliance with these final effluent limitations is infeasible.

(e) Antibacksliding. Antibacksliding requirements are satisfied as the previous Order did not include final effluent limitations for copper.

(2) Cyanide

(a) Cyanide WQC. The most stringent applicable WQC for cyanide are an acute criterion of 9.4 µg/L and a chronic criterion of 2.9 µg/L from Basin Plan Table 3-3 for protection of marine aquatic life in San Francisco Bay.

(b) RPA Results. This Order establishes effluent limitations for cyanide because the MEC (10 µg/l) exceeds the governing WQC (2.9 µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) Cyanide WQBELs. Final WQBELs for cyanide, calculated according to SIP procedures (using a CV of 1.0 and a dilution credit of 3.0), are an AMEL of 7.4 µg/L and an MDEL of 18 µg/L at E-001. Final WQBELs for cyanide at E-002, E-003 and E-005, calculated using a CV of 1.0 and no dilution credit, are an AMEL of 2.1 µg/L and an MDEL of 5.3 µg/L.

(d) Immediate Compliance Infeasible. Statistical analysis of effluent data for cyanide collected over the period of November 2003 through July 2008 shows that, for E-001, the 95th percentile (8.5 µg/L) is greater than the AMEL (7.4 µg/L); the 99th percentile (11 µg/L) is less than the MDEL (18 µg/L); and the mean (10 µg/L) is greater than the long term average of the projected normal distribution of the effluent data set after accounting for effluent variability (3.8 µg/L). However, the 95th percentile is greater than the AMEL (2.1 µg/L), the 99th percentile is greater than the MDEL (5.3 µg/L), and the mean (10 µg/L) is greater than the long term average of the projected normal distribution of the effluent data set after accounting for effluent variability (1.1 µg/L). The Regional Water Board therefore concludes that immediate compliance with these final effluent limitations is infeasible.

(e) Need for Cease and Desist Order. Since it is infeasible for the Discharger to immediately comply with WQBELs for cyanide, the Discharger will likely discharge in violation of this Order. A Cease and Desist Order will be considered for adoption concurrently with this Order to ensure that the Discharger achieves compliance.

(f) Antibacksliding. Antibacksliding requirements are satisfied because the previous Order did not include final effluent limitations for cyanide.

(3) 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 Suisun Bay as impaired by dioxin and furan compounds in the current 303(d) List of waters where WQOs are not being met.

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. Therefore, this Order uses CTR criterion as a criterion for dioxin-TEQ.

To determine if the discharge of dioxin or dioxin-like compounds from the Plant 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 are not included in this Order's version of the TEF procedure because the CTR includes a specific WQC for total PCBs, which includes dioxin-like PCBs.

(b) RPA Results. This Order establishes effluent limitations for dioxin-TEQ because the background concentration of dioxin-TEQ (4.8×10^{-8} 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), and dioxin-TEQ has been detected in the effluent, demonstrating Reasonable Potential by Trigger 2.

(c) Dioxin-TEQ 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 with no dilution credit), are an AMEL of 1.4×10^{-8} µg/L and an MDEL of 2.8×10^{-8} µg/L.

(d) Compliance Infeasible. The Discharger's Infeasibility Study dated November 10, 2008, asserts that the facility 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 final effluent limitations is determined by comparing the MEC (3.0×10^{-9} µg/L) to the AMEL (1.4×10^{-8} µg/L) and the MDEL (2.8×10^{-8} µg/L). Even though the MEC does not exceed the proposed final effluent limits, the Discharger asserts that the variability of dioxin-TEQ measured in the effluent results in significant uncertainty regarding whether compliance is attainable. The Regional Water Board concurs with the Discharger's assertion of infeasibility until sufficient effluent data are collected.

(e) Need for a Compliance Schedule. 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 USEPA approved on August 27, 2008. A compliance schedule will allow time for the Discharger to comply with these effluent limits, which are based on a new interpretation of a narrative objective. The final effluent limits will become effective 10 years from the effective date of this Order. The Regional Water Board may amend these limits based on new information or a TMDL for dioxin-TEQ.

(f) Interim Effluent Limitations. The *Policy for Compliance Schedules* requires that compliance schedules include interim limits. This Order establishes an interim limit based on the minimum levels (MLs) of all dioxin and furan congeners and their TEFs. The sum of each congener's ML times its TEF is 6.3×10^{-5} µg/L. This interim limit is established as a monthly average limit, and it will remain in effect for ten years following the effective date of this Order.

(g) Antibacksliding. Antibacksliding requirements are satisfied because the previous Order did not include final effluent limitations for dioxin-TEQ.

(4) Chlorodibromomethane

(a) Chlorodibromomethane WQC. The most stringent applicable WQC for chlorodibromomethane is the CTR criterion for protection of human health of 34 µg/L.

(b) RPA Results. This Order establishes effluent limitations for chlorodibromomethane because the MEC (44 µg/L) exceeds the most stringent applicable criterion (34 µg/L), demonstrating reasonable potential by Trigger 1.

(c) Chlorodibromomethane WQBELs. WQBELs for chlorodibromomethane, calculated according to SIP procedures (using a default CV of 0.60 with no dilution credit), are an AMEL of 34 µg/L and an MDEL of 68 µg/L.

(d) Compliance Infeasible. With insufficient data to determine the distribution of the data set or to calculate a mean and standard deviation, feasibility to comply with effluent limitations is determined by comparing the MEC (44 µg/L) to the AMEL (34 µg/L) and the MDEL (68 µg/L). Based on this comparison, the Regional Water Board concludes that the Plant cannot immediately comply with final WQBELs for chlorodibromomethane.

(e) Need for Cease and Desist Order. Since it is infeasible for the Discharger to immediately comply with WQBELs for chlorodibromomethane, the Discharger will likely discharge in violation of this Order. A Cease and Desist Order will be considered for adoption concurrently with this Order to ensure that the Discharger achieves compliance.

(f) Antibacksliding. Antibacksliding requirements are satisfied because the previous permit did not contain final limitations for chlorodibromomethane.

(5) Dichlorobromomethane

(a) Dichlorobromomethane WQC. The most stringent applicable WQC for dichlorobromomethane is the CTR criterion for protection of human health of 46 µg/L.

(b) RPA Results. This Order establishes effluent limitations for dichlorobromomethane because the MEC (64 µg/L) exceeds the most stringent applicable criterion (46 µg/L), demonstrating reasonable potential by Trigger 1.

(c) Dichlorobromomethane WQBELs. WQBELs for dichlorobromomethane, calculated according to SIP procedures (using a default CV of 0.60 with no dilution credit), are an AMEL of 46 µg/L and an MDEL of 92 µg/L.

(d) Compliance Infeasible. With insufficient data to determine the distribution of the data set or to calculate a mean and standard deviation, feasibility to comply with effluent limitations is determined by comparing the MEC (64 µg/L) to the AMEL (46 µg/L) and the MDEL (92 µg/L). Based on this comparison, the Regional Water Board concludes that the Plant cannot immediately comply with final WQBELs for dichlorobromomethane. .

(e) Need for Cease and Desist Order. Since it is infeasible for the Discharger to immediately comply with WQBELs for dichlorobromomethane, the Discharger will likely discharge in violation of this Order. A Cease and Desist Order will therefore be considered for adoption concurrently with this Order to ensure that the Discharger achieves compliance.

(f) Antibacksliding. Antibacksliding requirements are satisfied because the previous permit did not contain final limitations for dichlorobromomethane.

(6) Total Ammonia

(a) Ammonia WQC. The Basin Plan contains WQOs for un-ionized ammonia of 0.025 milligrams per liter (mg/L) as an annual median and 0.16 mg/L as a maximum for Central San Francisco Bay and upstream reaches. 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 objectives, 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 estuarine receiving water [*Ambient Water Quality Criteria for Ammonia* (saltwater) – 1989, EPA Publication 440/5-88-004, USEPA, 1989]:

For salinity > 10 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)
I = the molal ionic strength of saltwater = 19.9273*(S)/(1000-1.005109*S)
S = Salinity (parts per thousand)
T = Temperature in Kelvin
P = Pressure (one atmosphere)

To determine the fraction of un-ionized ammonia, Regional Water Board staff used site-specific pH, salinity, and temperature receiving water data collected at two upstream and six downstream monitoring locations from December 2003 through October 2008. This wide range accounts for some uncertainties resulting from the difficulty of collecting representative receiving water samples. Samples were not collected at low tide, when the pH values may increase due to natural diurnal variability.

To convert the Basin Plan's chronic un-ionized ammonia WQO to an equivalent total ammonia concentration, the median un-ionized ammonia fraction calculated from the data set 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 calculated from the data set 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 WQCs are 5.7 mg/L and 2.1 mg/L, respectively.

(b) RPA Results. The MEC (2.1 mg/L) exceeds the translated WQO (2.05 mg/L) for this pollutant [calculated in (a), above], 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 (using a CV of 1.36 with no dilution credit), are an AMEL of 2.0 mg/L and an MDEL of 5.7 mg/L. To calculate these 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.

These newly calculated WQBELs are higher than the performance-based limits in the previous permit

(d) Compliance Feasible. Statistical analysis of effluent data for total ammonia collected over the period of November 2003 to July 2008, shows that the 95th percentile (2.1 mg/L) is slightly greater than the AMEL (2.0 mg/L); the 99th percentile (2.1 mg/L) is less than the MDEL (5.7 mg/L); and the mean (0.45 mg/L) is less than the long term average of the projected lognormal distribution of the effluent data set after accounting for effluent variability (0.88 mg/L).

The Discharger was able to comply with more stringent effluent limitations in the previous permit (Order No. R2-2003-0072), over the course of the permit term from November 2003 to August 2008. Based on this comparison, the Regional Water Board concludes that immediate compliance with the WQBELs for total ammonia is feasible.

(e) Antibacksliding. The previous permit included an AMEL of 2.0 mg/L and an MDEL of 4.0 mg/L, as technology-based limitations. The newly calculated limitations are higher than the effluent limitations in the previous Order. To comply with the antibacksliding requirements, this Order retains the previous limits for total ammonia.

e. Effluent Limit Calculations

The following table shows the WQBEL calculations for copper, cyanide, dioxin-TEQ, chlorodibromomethane, dichlorobromomethane, BEHP, and ammonia.

Table F-11. Effluent Limit Calculations

PRIORITY POLLUTANTS	Copper	Cyanide (E-001)	Cyanide (E-002,E-003, E-005)	Dioxin-TEQ	Chlorodibro-momethane	Dichlorobro-momethane	Total Ammonia (acute)	Total Ammonia (chronic)
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L N**	**mg/L N**
Basis and Criteria type	BP SSOs	BP SSOs	BP SSOs	BP Narrative	CTR HH	CTR HH	Basin Plan Aquatic Life	Basin Plan Aquatic Life
Criteria -Acute	-----	-----	-----	-----	-----	-----	5.67	-----
Criteria -Chronic	-----	-----	-----	-----	-----	-----	-----	2.05
SSO Criteria -Acute	9.4	9.4	9.4	-----			-----	-----
SSO Criteria -Chronic	6.0	2.9	2.9	-----			-----	-----
Water Effects ratio (WER)	2.4	1	1	1	1	1	1	1
Lowest WQO	13.0	2.9	2.9	1.4E-08	34	46	5.67	2.05
Site Specific Translator - MDEL	0.64	-----	-----	-----	-----	-----	-----	-----
Site Specific Translator - AMEL	0.46	-----	-----	-----	-----	-----	-----	-----
Dilution Factor (D) (if applicable)	0	3	0	0	0	0	0	0
No. of samples per month	4	4	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	N	N	N	Y	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y	Y	Y	N	N
Applicable Acute WQO	15	9.4	9.4				5.67	
Applicable Chronic WQO	13	2.9	2.9					2.05
HH criteria	-----	220000	220000	1.4E-08	34	46		
Background (Maximum Conc for Aquatic Life calc)	9.9	0.5	0.5	4.8E-08	-----	-----	0.6	0.18
Background (Average Conc for Human Health calc)	-----	0.5	0.5	3.4E-08	0.05	0.05		
Is the pollutant on the 303d list (Y/N)?	N	N	N	Y	N	N	N	N
ECA acute	14.7	36	9.4				6	
ECA chronic	13.0	10	2.9					2.1
ECA HH		879999	220000	1.4E-08	34	46		
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	Y	Y	Y	N	N
Avg of effluent data points	3.8	3.0	3.0				0.45	0.45
Std Dev of effluent data points	1.9	2.9	2.9				0.61	0.61
CV calculated	0.50	1.0	1.0	N/A	N/A	N/A	1.36	1.36
CV (Selected) - Final	0.50	1.0	1.0	0.6	0.6	0.6	1.36	1.36
ECA acute mult99	0.37	0.21	0.21				0.156	
ECA chronic mult99	0.58	0.38	0.38					0.849
LTA acute	5.4	7.5	1.9				0.9	
LTA chronic	8	3.8	1.1					1.74
minimum of LTAs	5.4	3.8	1.1				0.88	1.74
AMEL mult95	1.5	1.9	1.9	1.6	1.6	1.6	2.28	-----
MDEL mult99	2.7	4.8	4.8	3.1	3.1	3.1	6.41	-----
AMEL (aq life)	8	7.4	2.1				2.02	-----
MDEL(aq life)	15	18.4	5.3				5.67	-----
MDEL/AMEL Multiplier	1.85	2.50	2.50	2.01	2.01	2.01	2.81	-----
AMEL (human hlth)		879999	220000	0.000	34.000	46.000		
MDEL (human hlth)		2202700	550676	0.000	68.210	92.285		
minimum of AMEL for Aq. life vs HH	8	7.36	2.11	0.0	34.0	46.0	2	-----
minimum of MDEL for Aq. Life vs HH	15	18.42	5.29	0.0	68.2	92.3	6	-----
Current limit in permit (30-day average)	-----	-----	----	-----	-----	-----	-----	-----
Current limit in permit (daily)	12.3 (Interim)	32 (Interim)	32 (Interim)	-----	-----	75 (Interim)	-----	-----
Final limit - AMEL	7.9	7.4	2.1	1.4E-08	34	46	2.0	-----
Final limit - MDEL	15	18	5.3	2.8E-08	68	92	5.7	-----
Max Effl Conc (MEC)	9.2	10	10	3.0E-09	44	64	2.1	2.1

5. Whole Effluent Acute Toxicity

a. Permit Requirements. This Order includes effluent limitations for whole effluent acute toxicity that are based on Basin Plan Table 4-3 and are unchanged from the previous permit. 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.*

b. Compliance History. The Discharger's acute toxicity monitoring data show that bioassay results from November 2004 to August 2008 ranged from 95% to 100% survival meeting both the 11-sample 90th percentile limitation and the an 11-sample median limitation. Therefore, there have been no acute toxicity effluent limitation violations.

c. Ammonia Toxicity. If the Discharger can demonstrate to the satisfaction of the Executive Officer that toxicity exceeding limitations in this Order is caused by ammonia, and that the ammonia in the discharge does not exceed ammonia effluent limitations, then such toxicity does not constitute a violation of the effluent limitations for whole effluent toxicity. If ammonia toxicity is verified by a Toxicity Identification Evaluation (TIE), the Discharger may use an adjusted protocol approved by the Executive Officer for routine bioassay testing.

6. Whole Effluent Chronic Toxicity

a. Permit Requirements. This Order includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective. This permit includes the Basin Plan narrative toxicity objective as monitoring "triggers," which, when exceeded, initiate accelerated monitoring requirements, including in some circumstances a chronic toxicity reduction evaluation (TRE). These permit requirements for chronic toxicity are consistent with the CTR and SIP requirements.

b. Chronic Toxicity Triggers. This Order includes chronic toxicity triggers of 1.0 chronic toxicity unit (TUc) as a three sample median, and a single sample maximum of 2.0 TUc. These triggers are based on Basin Plan Table 4-5.

c. Monitoring History. The Discharger's chronic toxicity monitoring data from February 2005 through July 2008 show that 10 out of 16 chronic toxicity results exceeded both the single sample maximum and the three sample median effluent "triggers." The Discharger's laboratory conducted Phase I TIE studies to identify the source of toxicity. The studies indicated that the toxicity was related to chelatable constituents and non-polar organics (NPOs), but that the cause could not be isolated. The detected toxicity was reduced in four of six trials by extracting NPOs from the effluent samples using solid-phase extraction (SPE) columns. However, no toxicity was detected when the eulate from the SPE columns was tested. The laboratory also performed toxicity tests of the chelatable process chemicals used by the Discharger (alum, ferric chloride, and polymers). These tests showed that, in the amounts used by the Discharger, only alum was a candidate toxicant; however, suspending the use of alum for three months had no effect on the toxicity detected in effluent samples. The Discharger's laboratory concluded that the cause of toxicity to the test species *Haliotos rufescens* (red abalone) was related

to NPOs, chelatable substances, and other unidentified factors, and that further TIE testing was unlikely to provide more information.

The laboratory then conducted two species screening tests. Of the six species tested, red abalone was the only species that detected toxicity in the Discharger's effluent. The lab therefore concluded that the toxicity was species-specific to red abalone. Based on the results of these species screening tests, the laboratory recommended replacing red abalone with *mysidopsis bahia* (mysid shrimp) as the test species because mysid shrimp is a sensitive and reliable test species, and is an appropriate species for evaluating discharges to estuarine environments such as Suisun Slough, Suisun Marsh, and Ledgewood Creek. The test results and recommendations are documented in *Phase I Toxicity Identification Evaluation: Identification of the Cause of Fairfield-Suisun Wastewater Treatment Plant Effluent Chronic Toxicity to Red Abalone (Halioti rufescens),* prepared by AQUA-Science Environmental Toxicology Consultants of Davis, California, dated June 5, 2007.

d. Screening Phase Study. The Discharger is required to conduct a chronic toxicity screening phase study, as described in Appendix E-1 of the MRP (Attachment E), prior to the next permit issuance.

7. Temperature

Ledgewood Creek supports warm and cold water habitat beneficial uses; therefore, specific temperature objectives apply. Regional Water Board staff analyzed whether there could be any reasonable potential that Ledgewood Creek (outfall E-005) could exceed the Basin Plan and Thermal Plan temperature objectives. Effluent temperature data from the Boynton Slough outfall (E-001) and background data from receiving water monitoring point RSW-007 (formerly CR-1) were compared to the Thermal Plan's objectives for new discharges to estuaries (the Thermal Plan's requirements are slightly more stringent that the Basin Plan's requirement, so the analysis focused on the Thermal Plan). The Thermal Plan's objectives are:

a. The maximum temperature shall not exceed the natural receiving water temperature by more than 20 degrees Farenheit (°F).
b. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.
c. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.
d. Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.
e. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

The analysis is based on effluent temperature data from E-001 because there has been no discharge from E-005 yet. The temperature of the E-001 discharge should be representative of that from E-005 since both will undergo the same treatment process. The analysis is further based on background data from RSW-007 because it is the closest background

monitoring point to E-005. RSW-007 is located in Peytonia Slough downstream of E-005 and is already used to evaluate background receiving water conditions.

Effluent temperature data collected between November 2003 and August 2008 were considered (this is the same timeframe used for inorganic pollutants), excluding the maximum and minimum observations of 35.6 and 97.5 °F, which are extreme values that appear to be incorrect. The mean effluent temperature was 69°F and the standard deviation 5°F.

The effluent temperature range (54 to 82°F) was within 20°F of the receiving water temperature range (51 to 74°F). The mean effluent temperature (69°F) was also within 20°F of the mean receiving water temperature (63°F). No independent effluent temperature measured concurrently with receiving water temperature exceeded the receiving water temperature by more than 20°F. Therefore, there is no reasonable potential that the discharge could exceed Thermal Plan objective "a," above.

The discharge would not exceed Thermal Plan objective "b" because Ledgewood Creek is not a main river channel.

Based on data for E-001, it is unlikely that the E-005 discharge will exceed Thermal Plan objective "c." Specifically, the E-001 discharge has not caused any violations of Order R2-2003-0072's narrative receiving water temperature limit in Boynton Slough. E-005 temperature should be identical to E-001's but a direct analysis cannot be performed at this time because data on temperature changes in Ledgewood Creek due to the E-005 discharge are unavailable as no discharge from E-005 has occurred to date.

The E-005 discharge is not a thermal waste as defined by the Thermal Plan and thus objective "d" above does not apply.

Because some of the analyses described above are indirect, we have revised the tentative order to require a study focused on effluent and receiving water temperature to confirm the conclusions.

D. Antidegradation

1. **Effluent Limitations Retained from Order No. R2-2003-0072**. Limitations for the following parameters are retained and are unchanged from Order No. R2-2003-0072:

   - Oil and grease
   - Turbidity
   - pH
   - BOD_5 and TSS
   - Total residual chlorine
   - 85% removal requirement for BOD and TSS
   - Acute toxicity
   - Ammonia

Retaining effluent limitations for these parameters in this Order ensures that these limitations are at least as stringent as those in Order No. R2-2003-0072, meeting antidegradation requirements.

2. **New Final Effluent Limitations**. This Order establishes new final concentration-based limitations for the following parameters that were not contained in Order No. R2-2003-0072.

   - Copper
   - Cyanide
   - Dioxin-TEQ
   - Chlorodibromomethane
   - Dichlorobromomethane
   - Enterococcus Bacteria

   The establishment of effluent limitations for these pollutants effectively creates limitations that are more stringent than in Order No. R2-2003-0072, therefore meeting antidegradation requirements. The new final limits for copper and dichlorobromomethane are higher than the interim limits in Order No. R2-2003-0072, which will be discussed below.

3. **More Stringent Effluent Limitations**. This Order does not establish limits more stringent than those limitations in Order No. R2-2003-0072.

4. **Effluent Limitations Not Retained from Order No. R2-2003-0072.** This Order does not retain limitations for the following parameters:

   - Settleable matter
   - Mercury
   - Nickel
   - Cadmium
   - Chromium(VI)
   - Bis(2-ethylhexyl)phthalate
   - Total coliform bacteria

   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 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). Therefore, no degradation of water quality will occur.

   Order No. R2-2003-0072 included effluent limitations for cadmium, chromium(VI), and nickel; however, because the RPA showed that discharges from the Plant 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 from Order No. R2-2003-0072. Elimination of WQBELs for cadmium, chromium(VI), and nickel is consistent with State Water Board Order WQ 2001-16 that incorporates antidegradation requirements.

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 was established to be consistent with anti-backsliding and antidegradation requirements.

The previous permit included an interim effluent limitation for bis(2-ethylhexyl)phthalate, which is not retained by this Order. The Discharger was able to demonstrate through its Bis(2-ethylhexyl)phthalate Laboratory Analysis Study, that data collected during its permit term prior to the Study were contaminated. Therefore, Regional Water Board staff used only effluent data collected using clean sampling techniques for the RPA. Since the RPA showed that discharges from the Plant 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 from Order No. R2-2003-0072. Elimination of WQBELs for bis(2-ethylhexyl)phthalate is consistent with State Water Board Order WQ 2001-16 that incorporates antidegradation requirements.

The limitations for total coliform bacteria are not retained because they have been replaced with effluent limitations for enterococcus bacteria, which are equally protective of beneficial uses.

5. **Effluent Limitations Higher Than in Order No. R2-2003-0072.** Limitations for the following parameters are higher than in the previous Order:

   - Copper
   - Dichlorobromomethane

   The effluent limitations for copper based on site-specific objectives (SSOs) are higher than the interim limitation for copper contained in the previous Order. The standards setting process for the copper SSOs addressed anti-degradation, 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 is based on the implementation of a Copper Action Plan. Section VI.C.7 of this Order requires such an action plan.

   The effluent limitations for dichlorobromomethane are higher than the interim limitation for dichlorobromomethane contained in the previous Order. The current advanced secondary level of treatment will remain unchanged, and the Discharger plans on implementing UV disinfection, which will add an additional level of treatment. Therefore, degradation of water quality is unlikely.

6. **Flow Increase.** Consistent with Order No. R2-2006-0045, this Order allows for an increase in the average dry weather discharge rate from 17.5 MGD to 23.7 MGD upon the Discharger meeting the conditions described in section VI.C.2.e of this Order, and upon Executive Officer approval. To support the increase in effluent flow, the Discharger prepared an antidegradation analysis in accordance with guidance contained in State Water Board Administrative Procedures Update No. 90-04. The analysis indicated that the increase in permitted dry weather discharge is necessary to accommodate planned growth within the

Discharger's service area and is otherwise consistent with federal and State antidegradation policies. The increased discharge will have no measurable effect on the water quality of Suisun Slough, Grizzly Bay, Suisun Bay, or other segments of greater San Francisco Bay.

The Regional Water Board has determined that the increase in effluent flow will be consistent with applicable antidegradation requirements of State Water Board Resolution No. 68-16, as well as USEPA policy established at 40 CFR 131.12. In accordance with State Water Board Resolution No. 68-16 and USEPA policy regarding antidegradation, water quality is to be maintained where water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation, unless the Regional Water Board finds:

1. That allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located,

2. That applicable water quality criteria and objectives shall be achieved,

3. That existing beneficial uses of the receiving water will be fully protected, and

4. That the highest statutory and regulatory requirements for point source discharges to the receiving water are being achieved; and that all cost-effective and reasonable best management practices for non-point source discharges to the receiving water are being achieved.

As described above, the expansion of the Plant is necessary to support growth within its service areas. Effluent limitations and specifications contained in the Order will assure that applicable water quality criteria and objectives of the receiving waters are being achieved, and that the beneficial uses of these receiving waters are being fully protected.

Through its issuance of this NPDES permit, the Regional Water Board continues to implement the highest statutory and regulatory requirements applicable to such discharges pursuant to the federal Clean Water Act and the California Water Code and regulations implementing those statutes.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations are retained from Order No. R2-2003-0072 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

- prepare water and wastewater quality inventories.

The Monitoring and Reporting Program (MRP) is a standard requirement in almost all NPDES permits the Regional Water Board issues, 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 policies. The MRP 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 RPAs.

A. Influent Monitoring

Influent monitoring requirements for BOD_5 and TSS allow determination of compliance with this Order's 85 percent removal requirement. Influent flow monitoring requirements are retained from the previous permit.

B. Effluent Monitoring

The MRP retains most effluent monitoring requirements from the previous permit. Changes in effluent monitoring at EFF-001-D are summarized as follows.

- Monitoring for settleable matter is no longer required because the effluent limitation for this parameter is not retained in this Order.

- Monthly routine monitoring for cadmium, chromium(VI), zinc , and lead is no longer required because these pollutants no longer demonstrate reasonable potential. Monthly monitoring for mercury is no longer required because the discharge of mercury is now regulated by Regional Water Board Order No. R2-2007-0077.

- This Order requires routine effluent monitoring for copper, cyanide, dioxin-TEQ, chlorodibromomethane, dichlorobromomethane, and ammonia (priority toxic pollutants with effluent limitations established by this Order). Monitoring for all other priority toxic pollutants is to be conducted in accordance with methods described in the August 6, 2001, Letter.

- Monitoring for cyanide is required at E-001 and E-005, at a point after full treatment and dechlorination, and prior to contact with Boynton Slough.

- Monitoring for enterococcus bacteria is required to determine compliance with newly established limitations for enterococcus bacteria.

Effluent monitoring requirements at E-001, E-002, E-003, and E-005 are retained from Order No. R2-2003-0072, as amended by Order No. R2-2006-0045.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Monthly 96-hour bioassay testing is required at E-001 or E-005, to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Chronic whole effluent toxicity testing is required at E-001 or E-005, once per quarter, in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Reclamation Monitoring Requirements

See Reclamation Order No. 91-147.

E. Receiving Water Monitoring

Most receiving water monitoring requirements are retained from the previous permit. This Order establishes new monitoring locations in Ledgewood Creek to characterize receiving water conditions for the new discharge at Discharge Point 005. Monitoring requirements for pH, temperature, salinity, and ammonia in receiving waters are required for determination of site-specific ammonia WQCs. Suisun Marsh is 303(d) listed for metals, low dissolved oxygen, salinity, and nutrients. Receiving water monitoring for these parameters is required to monitor the status of impairment in the receiving waters. Monitoring requirements for turbidity, specific conductivity, chlorophyll-a, and water depth in receiving waters have not been retained.

F. Other Monitoring Requirements

1. **Pretreatment Requirements**. Pretreatment monitoring requirements for the influent, effluent, and biosolids are retained from the previous permit and are required to assess compliance with the Discharger's USEPA approved pretreatment program.

2. **Sludge Monitoring**. Sludge monitoring is required pursuant to 40 CFR Part 503.

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. The Discharger must comply with all standard provisions and with those additional conditions that apply under 40 CFR 122.42.

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

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 Self-Monitoring Program (SMP), Part A (Attachment G). This provision requires compliance with these documents and is based on 40 CFR 122.63 and CWC sections 13267 and 13383. SMP, Part A, contains 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 policies. The MRP (Attachment E) 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 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 and other circumstances.

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. Diurnal Ammonia Study: This provision is needed to characterize diurnal variability throughout the day of receiving water quality parameters (pH, salinity, hardness, temperature, dissolved oxygen, and ammonia). This information will be used to confirm whether the ammonia limits are sufficiently protected. As indicated in this Order, this requirement includes submittal of a study plan, implementation of the study plan, and a final report.

d. Updated Technical Report on Recycled Water Use and Discharge Impacts on Beneficial Uses: This provision is needed to update our understanding of any impacts of the existing and planned discharges on Boynton Slough and Ledgewood Creek, and to provide a basis for granting exceptions to Basin Plan prohibitions in future permit reissuances. This requirement includes submittal of a study plan, implementation of the study plan, and submittal of a final report.

e. Ledgewood Creek Temperature Study: This study is required to confirm the results of the RPA for temperature. Some of the analysis was indirect due a lack of data on discharges from E-005. Since the Discharger plans to use E-005 only in the case of high wet-weather flows that exceed the capacity of E-001, opportunities to collect representative data may be limited. The Discharger shall propose a study plan that entails studying temperature impacts to the receiving water to the extent possible given the discharge frequency from E-005. It will not be a violation of this Order if data collection is limited due to low discharge frequency from E-005 (or if no data is collected because no discharge occurs). Since any discharges from E-005 are likely to occur during normally colder wet weather months, the data collected may likely not represent year-round receiving water conditions. The Regional Water Board shall take the amount of data collected into account when analyzing reasonable potential for temperature at the next permit reissuance.

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

g. Optional Site-Specific Translator Study: This option is provided to encourage the Discharger to continue to collect receiving water data to augment the current set used to develop site-specific translators to ensure that the translators reflect actual, current site specific conditions.

h. Dry Weather Flow Capacity Analysis: This provision is required to support the Discharger's anticipated Plant expansion and the construction of a new outfall to Ledgewood Creek. The Discharger has previously submitted an Environmental Impact Report (EIR) and an Antidegradation Analysis to the Regional Water Board for consideration. The outfall construction was completed in August 2008, and the treatment plant expansion is expected to be complete by September 2009. This provision requires the Discharger to submit documentation that demonstrates that actual treatment capacity once completed is 23.7 MGD; certification that the Plant facilities have been completed as designed and are available to use; and updates to the contingency plan and the operations and maintenance manual. Upon Executive Officer approval of these remaining documents, the permitted dry weather flow will increase from 17.5 MGD to 23.7 MGD.

3. Best Management Practices and Pollution Minimization Program

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

4. Construction, Operation, and Maintenance Specifications

a. Wastewater Facilities, Review and Evaluation, Status Reports: This provision is based on Order No. R2-2003-0072 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. R2-2003-0072.

c. Contingency Plan, Review and Status Reports: This provision is based on the Basin Plan, the requirements of 40 CFR 122, and Order No. R2-2003-0072. See Section VI.C.4.c of this Order for specific requirements.

5. Special Provisions for Municipal Facilities (POTWs Only)

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

b. Sludge Management Practices Requirements: This provision is based on Basin Plan Chapter 4, 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's Statewide General Waste Discharge Requirements for Sanitary Sewer Overflows and its associated Monitoring and Reporting Program (Order No. 2006-0003-DWQ).

6. 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."

7. Copper Action Plan

This Order requires the Discharger to implement monitoring and surveillance, pretreatment, source control, and pollution prevention for copper in accordance with the Basin Plan. The Basin Plan contains site-specific water quality objectives for copper in all segments of San Francisco Bay. The water quality objectives are 6.0 µg/L dissolved copper as a 4-day average, and 9.4 µg/L dissolved copper as a 1-hour average. The Basin Plan also requires an implementation plan to ensure no degradation of water quality.

8. Cyanide Action Plan

The Basin Plan requires a Cyanide Action Plan to ensure compliance with antidegradation policies. The Order requires the Discharger to implement monitoring and surveillance, pretreatment, source control, and pollution prevention for cyanide in accordance with 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 2 of the letter requires implementation of the Cyanide Action Plan Task 3 requires the Discharger to report on the implementation status.

VIII. PUBLIC PARTICIPATION

The 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 has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the Vallejo Times-Herald.

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 must be received at the Regional Water Board offices by 5:00 p.m. on **March 2, 2009**.

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:	April 8, 2009
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 (permit application), 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 this NPDES permit should contact the Regional Water Board, reference the Fairfield-Suisun Sewer District Wastewater 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 USEPA. The USEPA 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 USEPA 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 USEPA Region 9, the State Board and the Board describing the status of its significant industrial users (SIUs). The report shall contain, but not is limited to, the information specified in Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31st (for the period January through June) and January 31st (for the period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Board and USEPA'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.

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 USEPA. 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:
(4) in consistent compliance;
(5) in inconsistent compliance;
(6) in significant noncompliance;
(7) on a compliance schedule to achieve compliance, (include the date final compliance is required);
(8) not in compliance and not on a compliance schedule;
(9) 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 discharger's facility.

2. Industrial User Compliance Status

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

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

a. Indicate if the SIU is subject to federal categorical standards; if so, specify the category including the subpart that applies.
b. For SIUs subject to federal Categorical Standards, indicate if the violation is of a categorical or local standard.
c. Indicate the compliance status of the SIU for the two quarters of the reporting period.
d. For violations/noncompliance occurring in the reporting period, provide (1) the date(s) of violation(s); (2) the parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters and (3) a brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

3. POTW's Compliance with Pretreatment Program Requirements

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

a. Date of latest PCA, PCI or PPE and report.
b. Date of the Discharger's response.
c. List of unresolved issues.
d. Plan and schedule for resolving the remaining issues.

The reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(j)). Signed copies of the reports shall be submitted to the Regional Administrator at USEPA, the State Water Resources Control Board and the 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 Tables E-4 to E-6 of the Self-Monitoring Program (SMP).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Table 1 of the SMP. Any subsequent modifications of the requirements specified in Table 1 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 1 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-4 to E-6 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 SMP.

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 USEPA 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 USEPA 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.