TENTATIVE ORDER No. R2-2013-XXXX
NPDES No. CA0038539

The following dischargers and discharge points are subject to waste discharge requirements set forth in this Order.

Table 1. Discharger Information

WDID	2 071037001		
Dischargers	1. West County Agency 2. West County Wastewater District 3. City of Richmond 4. Richmond Municipal Sewer District No. 1		
Facility Names	1. West County Agency Common Outfall	2. West County Wastewater District Treatment Plant and its Wastewater Collection System	3. Richmond Municipal Sewer District Water Pollution Control Plant and its Wastewater Collection System
Facility Addresses	2910 Hilltop Drive Richmond, CA 94806 Contra Costa County	2377 Garden Tract Road Richmond, CA 94801 Contra Costa County	601 Canal Boulevard Richmond, CA 94804 Contra Costa County
CIWQS Place Numbers	215234	272082	252657
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.			

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary Treated Municipal Wastewater	37º 54′ 47″ N	122º 25′ 06″ W	Central San Francisco Bay

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	date
This Order shall become effective on:	July 1, 2013
This Order shall expire on:	June 30, 2018
The Dischargers shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for re-issuance of waste discharge requirements no later than:	December 31, 2017

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 the date indicated above.

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Bruce H. Wolfe**,** Executive Officer

Contents

Tables

Attachments

I. FACILITY INFORMATION

The following facilities are subject to the waste discharge requirements set forth in this Order:

Table 4. Facility Information

Dischargers	1. West County Agency 2. West County Wastewater District 3. City of Richmond 4. Richmond Municipal Sewer District No. 1		
Facility Names	1. West County Agency Common Outfall	2. West County Wastewater District Treatment Plant and its Wastewater Collection System	3. Richmond Municipal Sewer District Water Pollution Control Plant and its Wastewater Collection System
Facility Addresses	2910 Hilltop Drive Richmond, CA 94806 Contra Costa County	2377 Garden Tract Road Richmond, CA 9480 Contra Costa County	601 Canal Boulevard Richmond, CA 94804 Contra Costa County
CIWQS Place Numbers	215234	272082	252657
CIWQS Party Numbers	300074	300074	537589
Facility Contacts, Titles, and Phone Numbers	Eddy J. Shalaby Agency Manager (510) 222 – 6700	Eddy J. Shalaby General Manager (510) 222 – 6700	Alan Wolken Interim Engineering Services Director (510) –307-8140
Mailing Addresses	2910 Hilltop Drive Richmond, CA 94806 Contra Costa County	2910 Hilltop Drive Richmond, CA 94806 Contra Costa County	450 Civic Center Plaza Richmond, CA 94804 Contra Costa County
Facility Types	Publicly Owned Treatment Works (POTW)		
Permitted Flows	--	12.5 MGD	16.0 MGD
Design Flows	--	12.5 MGD dry weather capacity 21 MGD wet weather capacity	16 MGD dry weather capacity 20 MGD wet weather capacity
Service Areas	--	Parts of the City of Richmond, City of San Pablo, and adjacent unincorporated areas	Incorporated area of Richmond
Service Populations	--	93,976	68,285

II. FINDINGS

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

A. Background. West County Agency, a Joint Powers Agency whose members are (1) West County Wastewater District, (2) the City of Richmond, and (3) Richmond Municipal Sewer District No.1, is currently discharging under Order No. R2-2008-0003 (hereinafter previous order) (CIWQS Regulatory Measure No. 349718), National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038539. Together, the West County Agency, the West County Wastewater District, the City of Richmond, and the Richmond Municipal Sewer District are hereinafter referred to as the Dischargers. These Dischargers submitted a Report of Waste Discharge dated October 2, 2012, and applied for NPDES permit reissuance to discharge treated wastewater to Central San Francisco Bay, a water of the United States, via a submerged diffuser.

The discharge is also regulated under Order No. R2-2012-0096 (NPDES Permit No. CA0038849), which establishes requirements on mercury and polychlorinated biphenyls (PCBs) from wastewater discharges in the region. This Order does not affect the mercury and PCBs permit. Furthermore, the Dischargers are subject to Cease and Desist Order No. R2-2008-0004, which addresses the Discharger's inability to immediately comply with certain effluent limits established in the previous order.

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 Dischargers herein.

B. Facility Description and Discharge Location

1. **Facility Description.** This permit regulates two separate wastewater treatment plants and their wastewater collection systems that combine their treated wastewater prior to discharge. The locations of the treatment plants and the common outfall are shown in Attachment B. The West County Wastewater District owns and operates the West County Wastewater District Water Pollution Control Plant (West County Plant). The West County Plant serves a population of approximately 93,000 from parts of the City of Richmond; the City of San Pablo; the communities of Tara Hills, Rollingwood, Bayview, and El Sobrante; the Crestview portion of Pinole; and some unicorporated portions of Contra Costa County. It has a design capacity of 12.5 million gallons per day (MGD) for dry weather and a hydraulic capacity of 21 MGD for wet weather conditions. The annual average daily flow in 2011 was approximately 8.8 MGD.

   The City of Richmond and Richmond Municipal Sewer District own and operate the Richmond Municipal Sewer District Water Pollution Control Plant (Richmond Plant). The Richmond Municipal Sewer District facilitates the allocation of sewer use fees paid by City of Richmond residents. The City handles administrative, management, and source control responsibilities and contracts out the operations and maintenance of the sewer collection system and wastewater treatment plant. A private operations firm, Veolia Water West Operating Services, Inc., operates the Richmond Plant under contract and direction of the City of Richmond. The Richmond Plant serves a population of approximately 68,000 covering most of the incorporated area of Richmond. It has a design capacity of 16 MGD for dry weather and a hydraulic capacity of 20 MGD for wet weather conditions. The annual average daily flow in 2011 was about 8.1 MGD. Chlorinated effluents from the West County Plant and the Richmond Plant are combined and dechlorinated prior to discharge from the West County Agency Common Outfall into San Francisco Bay.

2. **Collection System.** The West County Wastewater District and the City of Richmond independently own and operate their treatment plants and the sanitary sewer collection systems within their separate service areas. West County Wastewater District has about 249 miles of gravity sewer and 11 miles of force main with 17 pump stations. The City of Richmond has about 187 miles of sewer line with 11 pump stations. Both collection systems are separately covered by the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ).

3. **Treatment Description.** The wastewater treatment processes at the West County Plant consist of bar screens, an aerated grit chamber, primary clarifiers, a roughing filter (high-rate trickling filter), an activated sludge unit, secondary clarifiers, and chlorine contact basins. The

wastewater treatment processes at the Richmond Plant consist of bar screens, grit removal chambers, primary clarifiers, activated sludge basins, secondary clarifiers, and chlorine contact basins. Flow diagrams for the West County Plant and the Richmond Plant are shown in Attachment C. Treated wastewater from the West County Plant is transported to the Richmond Plant where it is combined with the Richmond Plant effluent, dechlorinated, and then discharged through West County Agency's common deep-water outfall into Central San Francisco Bay.

Wet weather conditions sometime exceed the secondary treatment capacity at the Richmond Plant due to infiltration into the collection system. Under these conditions, when wet weather inflows exceed 20 MGD, excess primary-treated flows are diverted around the biological treatment units to two equalization basins with a total volume of 2 million gallons (wet weather storage). Once storage is at capacity, excess primary-treated flows are blended with the secondary-treated wastewater in the chlorine contact basin for disinfection. The combined flow is disinfected and dechlorinated prior to discharge to Central San Francisco Bay. After the wet weather event concludes, the stored wastewater in the equalization basins is drained back to the headworks and treated through the secondary treatment units.

4. **Discharge Point.** The treated wastewaters from the West County Plant and the Richmond Plant are combined, dechlorinated, and discharged through Discharge Point No. 001 about 8,200 feet offshore in Central San Francisco Bay at a depth varying from 24 to 32 feet below mean sea level. The outfall is equipped with a multi-port diffuser. The diffuser is a 6-foot diameter, 1,112-foot long reinforced concrete pipe embedded into the channel bottom and aligned in an east-west orientation. The first port is located 8,166 feet from shore. The diffuser has 140 ports spaced 8-feet apart discharging horizontally in alternating directions.

5. **Biosolids Management.** Biosolids from the Richmond Plant are thickened by dissolved air floatation, anaerobically digested, and pumped to the West County Plant for drying and disposal. At the West County Plant, primary clarifier sludge is combined with thickened secondary clarifier sludge that has been thickened using dissolved air floatation, anaerobically digested, and dewatered in drying beds. Dried sludge from both plants is hauled off-site for disposal at Keller Canyon Landfill, West Contra Costa Landfill, or Vasco Road Landfill.

6. **Stormwater Discharge.** All stormwater in contact with equipment or wastewater at each plant is collected and directed back to the headworks for treatment. The Dischargers are not covered under the statewide general NPDES permit for stormwater discharges associated with industrial activities (NPDES General Permit No. CAS000001) because the plants do not discharge stormwater associated with industrial activity separate from that covered by this Order.

7. **Water Recycling.** About 2 to 3 MGD of treated wastewater from the West County Plant is recycled at the Chevron refinery. This involves pumping about 2 to 3 MGD of nitrified (<1 mg/L N) secondary-treated wastewater to the East Bay Municipal Utility District's (EBMUD's) Richmond Advanced Recycled Expansion (RARE) facility where the treated wastewater receives additional treatment. The RARE facility consists of microfiltration and reverse osmosis to generate high quality water for the Chevron refinery's boilers. The RARE facility generates approximately 0.36 to 0.5 MGD of microfiltration reject that is returned back to the West County Plant. The West County Plant also has the potential to recycle treated wastewater at the Richmond Country Club for golf course irrigation. There is no wastewater recycling at the Richmond Plant.

C. Legal Authorities. This Order is issued pursuant to 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 serves as an NPDES permit for point source discharges from the treatment plants to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to CWC article 4, chapter 4, division 7, commencing with section 13260.

D. Background and Rationale for Requirements. This Order is 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 this Order, is hereby incorporated into this Order and constitutes part of the findings for this Order. Attachments A through E and G and 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 CEQA chapter 3.

F. Technology-Based Effluent Limitations. CWA section 301(b) and NPDES regulations at Title 40 of the Code of Federal Regulations section 122.44 (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. Further discussion of the technology-based effluent limitations is included in the Fact Sheet.

G. Water Quality-Based Effluent Limitations (WQBELs). CWA section 301(b) and 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, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plan. The *Water Quality Control Plan for the San Francisco Bay Basin* (hereinafter 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 and groundwater. It also includes implementation programs to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, Office of Administrative Law, and USEPA. Requirements of this Order implement the Basin Plan. Basin Plan beneficial uses for Central San Francisco Bay are listed in the table below.

Table 5. Basin Plan Beneficial Uses

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

The State Water Board's *Water Quality Control Plan for Enclosed Bays and Estuaries—Part 1, Sediment Quality* became effective on August 25, 2009. This plan supersedes other narrative sediment quality objectives and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries.

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 40 criteria in the NTR apply in California. On May 18, 2000, USEPA adopted the CTR, promulgating new toxics criteria for California and, in addition, incorporating the previously adopted NTR criteria that applied in the State. USEPA amended the CTR 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* (hereinafter State Implementation Policy [SIP]). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated through the NTR and to the priority pollutant water quality objectives 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. 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.

L. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on biochemical oxygen demand (5-day @ 20°C)

(BOD), total suspended solids (TSS), pH, total residual chlorine, and oil and grease. These technology-based limitations are discussed further in the Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements and are more stringent than the minimum federal technology-based requirements only as necessary to meet water quality standards.

In this Order, Water quality-based effluent limitations (WQBELs) 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. On May 18, 2000, USEPA approved the procedures for calculating individual WQBELs for priority pollutants based on the SIP. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under State law and submitted to USEPA. 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.

M. Antidegradation Policy. NPDES regulations at 40 CFR 131.12 require 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 No. 68-16, which incorporates the federal antidegradation policy where the federal policy applies under federal law and requires that existing quality of waters 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.

N. Anti-Backsliding Requirements. CWA sections 402(o)(2) and 303(d)(4) and 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 order, with some exceptions where limitations may be relaxed. As discussed in the Fact Sheet, the permitted discharge is consistent with the anti-backsliding requirements of the CWA and federal regulations.

O. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State. The Dischargers are responsible for meeting all requirements of applicable State and federal law pertaining to threatened and endangered species.

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 (MRP, Attachment E) establishes monitoring and reporting requirements to implement federal and State requirements.

Q. Standard and Special Provisions. Attachment D contains Federal Standard Provisions that 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. The Dischargers must comply with all standard provisions and with those additional conditions that apply under 40 CFR 122.42. The Dischargers must also comply with the Regional Standard Provisions provided in Attachment G. The Regional Water Board has also included in this Order special provisions applicable to the Dischargers. The Fact Sheet provides rationales for the special provisions.

R. Provisions and Requirements Implementing State Law. None of the requirements in this Order are included to implement State law only.

S. Notification of Interested Parties. The Regional Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided them with an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.

T. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. The Fact Sheet provides details regarding the public hearing.

IT IS HEREBY ORDERED, that this Order supersedes Order No. R2-2008-0003, except for enforcement purposes, and, in order to meet the provisions contained in CWC Division 7 (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 Dischargers shall comply with the requirements in this Order. This Order also rescinds Cease and Desist Order No. R2-2008-0004, except for enforcement purposes.

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. Discharge at any point at which the treated wastewater does not receive an initial dilution of at least 25:1 (nominal) is prohibited. Compliance shall be achieved by proper operation and maintenance of the discharge outfall to ensure that it (or its replacement, in whole or in part) is in good working order, and is consistent with or can achieve better mixing than that described in the Fact Sheet . The Dischargers shall address measures taken to ensure this in their application for permit reissuance.

C. The bypass of untreated or partially treated wastewater to waters of the United States is prohibited, except as provided for in the conditions stated in Attachment D section I.G.

Blended wastewater is biologically treated wastewater blended with wastewater diverted around biological treatment units or advanced treatment units. Such discharges are approved under the bypass conditions stated in 40 CFR 122.41(m)(4) when (1) the peak wet weather influent flow volume at the Richmond Plant exceeds the wet weather capacity of 20.0 MGD, (2) the discharge complies with the effluent and receiving water limitations contained in this Order, and (3) the City of Richmond and Richmond Municipal Sewer District comply with Provision VI.C.5. Furthermore, the City of Richmond and Richmond Municipal Sewer District shall operate the Richmond Plant as designed and in accordance with the Operation & Maintenance Manual developed for the Richmond Plant. This means they shall optimize storage and use of equalization units and shall fully use the biological treatment units and advanced treatment units. The City of Richmond and

Richmond Municipal Sewer District shall report incidents of blended effluent discharges in routine monitoring reports and shall monitor their discharge as specified in the MRP. Bypasses are prohibited at the West County Plant.

D. The average dry weather flow for the West County Plant, as measured at Monitoring Location INF-003, shall not exceed 12.5 MGD. The average dry weather flow for the Richmond Plant, as measured at Monitoring Location INF-002, shall not exceed 16 MGD. Average dry weather flow shall be determined for compliance with this prohibition over three consecutive dry weather months each year.

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

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations for Conventional and Non-Conventional Pollutants

1. Discharges at Discharge Point Nos. 002 and 003 shall maintain compliance with the following effluent limitations, with compliance measured at each treatment facility (Monitoring Locations EFF-002, EFF-002B, and EFF-003) as indicated below.

Table 6. Conventional and Non-Conventional Pollutant Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD 5-day @ 20°C (BOD_5)	mg/L	30	45	---	---	---
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---
BOD_5 and TSS percent removal [1]	%	85 minimum	---	---	---	---
Oil and Grease	mg/L	10	---	20	---	---
pH [2]	s.u.	---	---	---	6.0	9.0

Unit Abbreviations:

mg/L = milligrams per liter
s.u. = standard units

[1] 85 Percent Removal. The arithmetic mean of BOD_5 at 20°C and TSS, by concentration, for effluent samples collected at EFF-002 and EFF-003 as described in the MRP in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by concentration, for influent samples collected at INF-002 and INF-003, as described in the MRP, at approximately the same times during the same period.

[2] pH. If the Dischargers monitors pH continuously, pursuant to 40 CFR 401.17, the Dischargers 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. Chlorine Residual: The instantaneous maximum total chlorine residual at Discharge Point No. 001 (Monitoring Location EFF-001) shall not exceed 0.0 mg/L. The Dischargers may elect to use a continuous online monitoring systems for measuring flow, chlorine residual and sodium bisulfite (or other dechlorinating chemical) 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 may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

3. **Enterococcus Bacteria:** At Discharge Point Nos. 002 and 003, the geometric mean of the enterococcus bacteria concentration of all samples in a calendar month shall not exceed 35 colonies/100 mL, with compliance measured at Monitoring Locations EFF-002, EFF-002B, and EFF-003.

4. **Total Coliform Bacteria:** At Discharge Point Nos. 002 and 003, the five-sample median total coliform density shall not exceed 240 MPN/100 mL and the daily maximum value shall not exceed 10,000 MPN/100mL, with compliance measured at Monitoring Locations EFF-002, EFF-002B, and EFF-003.

B. Toxic Substances Effluent Limitations

Discharges at Discharge Point No. 001 shall comply with the following limitations with compliance measured at Monitoring Location EFF-001 and EFF-001B.

Table 7. Toxic Pollutant Effluent Limitations

Constituent	Units	Effluent Limitations[1,2]	
		Average Monthly	Maximum Daily
Copper	µg/L	44	76
Nickel	µg/L	34	59
Cyanide	µg/L	19	41
Dioxin-TEQ	µg/L	1.4×10^{-8}	2.8×10^{-8}
Bis(2-Ethylhexyl)Phthalate	µg/L	55	150
Endrin	µg/L	0.019	0.037
Heptachlor	µg/L	0.0019	0.0039
Total Ammonia, as N	mg/L	32	59

Unit Abbreviations:

µg/L = micrograms per liter
mg/L = milligrams per liter

[1] Limitations apply to the average concentration of all samples collected during the averaging period (daily = 24-hour period; monthly = calendar month).

[2] All limitations for metals are expressed as total recoverable metals.

C. Whole Effluent Toxicity

1. Whole Effluent Acute Toxicity

a. Discharges at Discharge Point No. 001 shall meet the following acute toxicity limits. Bioassays shall be conducted in compliance with MRP section V.A with compliance measured at Monitoring Location EFF-001 as described in the MRP:

(1) An eleven (11) – sample median value of not less than 90 percent survival; and
(2) An eleven (11) – sample 90^{th} percentile value of not less than 70 percent survival.

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

(1) **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.

(2) **11-sample 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.

If the Dischargers 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 complies with the ammonia effluent limits, then such toxicity shall not constitute a violation of this effluent limitation.

c. Bioassays shall be performed using the most up-to-date USEPA protocols and species as specified in MRP section V.A.

c. Bioassays shall be performed using the most up-to-date USEPA protocols and species as specified in MRP section V.A. 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). If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification.

d. If the Discharger can demonstrate that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge complies with ammonia effluent limits, then such toxicity does not constitute a violation of this effluent limitation.

2. Whole Effluent Chronic Toxicity

The discharge shall not contain chronic toxicity at a level that would cause or contribute to toxicity in the receiving water. Chronic toxicity is a detrimental biological effect of growth rate, reproduction, fertilization success, larval development, or any other relevant measure of the health of an organism population or community. Compliance with this limit shall be determined by analysis of indicator organisms and toxicity tests. Compliance shall be measured at Discharge Point 001, Monitoring Location EFF-001.

V. RECEIVING WATER LIMITATIONS

A. The discharge of waste shall not cause the following conditions to exist in waters of the State:

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

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

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

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

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

B. The discharge of waste shall not cause the following limits to be exceeded in waters of the State within 1 foot of the water surface:

1.	Dissolved Oxygen	5.0 mg/L, minimum Furthermore, 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.
2.	Dissolved Sulfide	Natural background levels
3.	pH	The pH shall not be depressed below 6.5 or raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.
4.	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.

C. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board 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 may revise and modify this Order in accordance with such more stringent standards.

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Dischargers shall comply with the Federal Standard Provisions in Attachment D of this Order.

2. **Regional Standard Provisions.** The Dischargers shall comply with all applicable items of the Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits (Attachment G).

B. MRP Requirements

The Dischargers shall comply with the MRP and future revisions thereto, including applicable sampling and reporting requirements in the standard provisions listed in Provision VI.A above.

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 have or will have a reasonable potential to cause or contribute to, or will cease to have, adverse impacts on water quality or beneficial uses of the receiving waters.

b. If new or revised water quality objectives 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 water quality objectives and waste load 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 water quality objectives or TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.

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

d. If State Water Board precedential decisions, new policies, new laws, or new regulations on chronic toxicity or total chlorine residual become available.

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

f. If the Dischargers request adjustments in effluent limits due to the implementation of a stormwater diversion pursuant to the Municipal Regional Stormwater Permit (No. CA0038593), for redirecting dry weather and first flush discharges from the storm drain system to the sanitary sewer system as a stormwater pollutant control strategy.

g. Or as otherwise authorized by law.

The Dischargers may request permit modification based on any of the circumstances described above. With any such request, the Dischargers shall include antidegradation and anti-backsliding analyses.

With the consent of the Dischargers, the Executive Officer may make minor modifications to this Order for the purposes set forth in 40 CFR 122.63.

2. Effluent Characterization Study and Report

a. Study Elements

The Dischargers shall continue to characterize and evaluate discharge from the following discharge points to verify that the "no" or "cannot determine" reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Dischargers shall collect representative samples of the discharge at Discharge Point 001 (measured at Monitoring Location EFF-001) once per calendar year.

The samples shall be analyzed for the priority pollutants listed in Attachment G, Table C, except for those priority pollutants with effluent limitations where the MRP already requires monitoring. Compliance with this requirement shall be achieved in accordance with the specifications of Attachment G, sections III.A.1 and III.A.2.

The Dischargers shall evaluate on an annual basis if concentrations of any of these priority pollutants significantly increase over past performance. The Dischargers shall investigate the cause of such increase. The investigation may include, but need not be limited to, an increase in monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. The Dischargers shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an excursion above applicable water quality objectives. This requirement may be satisfied through identification of the constituent as a "pollutant of concern" in the Dischargers' Pollutant Minimization Program, described in Provision VI.C.3.

b. Reporting Requirements

i. Routine Reporting

The Dischargers shall, within 30 days of receipt of analytical results, report in the transmittal letter for the appropriate monthly self-monitoring report the following:

a. Indication that a sample or samples for this characterization study was or were collected; and

b. Identity of priority pollutants detected at or above applicable Water Quality Criteria (see Fact Sheet Table F-10 for the criteria), together with the detected concentrations of those pollutants.

ii. Annual Reporting

The Dischargers shall provide a summary of the annual data evaluation and source investigation in the annual self-monitoring report.

iii. Final Report

The Dischargers shall submit a final report that presents all these data to the Regional Water Board no later than December 31, 2017. The final report shall be submitted with the application for permit reissuance.

3. Best Management Practices and Pollutant Minimization Program

a. Each West County Agency member agency shall continue to improve its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plants and therefore to the receiving waters.

b. The Dischargers shall submit an annual report no later than February 28 of each calendar year. Each annual report shall include at least the following information:

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

(2) *A discussion of the current pollutants of concern.* Periodically, the Dischargers shall analyze their own situation to determine which pollutants are currently a problem and which pollutants may be potential future problems. This discussion shall include the reasons for choosing the pollutants.

(3) *Identification of sources of pollutants of concern*. This discussion shall include how the Dischargers intend to estimate and identify sources of pollutants of concern. The Dischargers shall also identify sources or potential sources not directly within the ability or authority of the Dischargers to control, such as pollutants in the potable water supply and air deposition.

(4) *Identification of tasks to reduce sources of pollutants of concern.* This discussion shall identify and prioritize tasks to address the Dischargers' pollutants of concern. The Dischargers may implement the tasks by itself or participate in group, regional, or national tasks that will address its pollutants of concern. The Dischargers are strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

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

(6) *Continuation of Public Outreach Program.* The Dischargers shall prepare public outreach programs to communicate pollution prevention messages 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 newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, and web sites. Information shall be specific to target audiences. The Dischargers shall coordinate with other agencies as appropriate.

(7) *Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness*. The Dischargers shall establish criteria to evaluate the effectiveness of their Pollutant Minimization Program. This section shall discuss the specific criteria used to measure the effectiveness of each of the tasks in sections VI.C.3.b(3), (4), (5), and (6).

(8) *Documentation of efforts and progress.* This discussion shall detail all of the Dischargers' Pollutant Minimization Program activities during the reporting year.

(9) *Evaluation of Pollutant Minimization Program and task effectiveness.* The Dischargers shall use the criteria established in section VI.C.3.b.(7) to evaluate the Program's and tasks' effectiveness.

(10) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the Dischargers shall detail how they intend to continue or change their tasks in order to more effectively reduce the amount of pollutants to the treatment plant, and subsequently in its effluent.

c. Pollutant Minimization Program for Pollutants with Effluent Limitations

The Dischargers shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence that a priority pollutant is present in the effluent above an effluent limitation (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) 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 SIP definitions.

d. Pollutant Minimization Program Submittals for Pollutants with Effluent Limitations

If triggered by the reasons in section VI.C.3.c, above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:

i. Annual review and semi-annual monitoring of potential sources of the reportable priority pollutants. The Executive Officer may approve alternate measures, such as fish tissue monitoring or other bio-uptake sampling when it is demonstrated that source monitoring is unlikely to produce useful analytical data;

ii. Quarterly monitoring for the reportable priority pollutants in the influent to the wastewater treatment system. The Executive Officer may approve alternative measures when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below effluent limitations;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and

v. Annual report required by section VI.C.3.b, above, which shall specifically include the following items:

1. All Pollutant Minimization Program monitoring results for the previous year;

2. List of potential sources of the reportable priority pollutants;

3. Summary of all actions undertaken pursuant to the control strategy; and

4. Description of actions to be taken in the following year.

4. Special Provisions for POTWs

a. Pretreatment Program Requirements

(1) Each West County Agency member shall implement and enforce its approved pretreatment program in accordance with Federal Pretreatment Regulations (40 CFR 403); pretreatment standards promulgated under CWA Sections 307(b), 307(c), and 307(d); pretreatment requirements specified at 40 CFR 122.44(j) and the requirements in Attachment H, "Pretreatment Requirements". The Discharger's responsibilities include, but are not limited to, the following:

(a) Enforcement of National Pretreatment Standards of 40 CFR 403.5 and 403.6;

(b) Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the General Pretreatment regulations (40 CFR 403) and its approved pretreatment program;

(c) Submission of reports to USEPA, the State Water Board, and the Regional Water Board, as described in Attachment H;

(d) 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, submit a report describing a plan and schedule for implementation. If deemed unnecessary, the report shall indicate that the Dischargers evaluated local limits, but no changes were needed.

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

b. Biosolids Management Practices

(1) All biosolids generated by the Dischargers shall be disposed of, managed or reused in a municipal solid waste landfill, through land application, as a Class A compost, through a waste to energy facility, or other recognized and approved technology, disposed of in a sludge-only landfill or fired in a sewage sludge incinerator in accordance with 40 CFR Part 503. If the Dischargers desire 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 Dischargers. The Regional Water Board should be copied on relevant correspondence and reports forwarded to USEPA regarding biosolids 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 Dischargers 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 sludge 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 sludge incinerator as defined in 40 CFR 503, the Dischargers 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 disposed of in a municipal solid waste landfill shall meet the requirements of 40 CFR Part 258. In the annual Self-Monitoring Report, the Dischargers shall include the amount of biosolids disposed and the landfill to which it was sent.

(8) This Order does not authorize permanent on-site biosolids storage or disposal. 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.

(9) Biosolids Monitoring and Reporting Provisions of this Regional Water Board's Standard Provisions, 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 biosolids regulations.

c. Sanitary Sewer Overflows and Sewer System Management Plan

The Dischargers' conveyance and collection systems are part of the facilities subject to this Order. As such, the Dischargers shall properly operate and maintain their collection systems (Attachment D, section I.D). West County Wastewater District and the City of Richmond shall each separately report any noncompliance (Attachment D, sections V.E.1 and V.E.2) and mitigate any discharge from the Discharger's collection systems in violation of this Order (Attachment D, section I.C).

The General Waste Discharge Requirements for Collection System Agencies (General Collection System WDRs), Order No. 2006-0003 DWQ, has requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While West County Wastewater District and the City of Richmond must each comply independently with both the General Collection System WDRs and this Order, the General Collection System WDRs more clearly and specifically stipulate requirements for operation and maintenance, and for reporting and mitigating sanitary sewer overflows.

Implementation of the General Collection System WDRs requirements for proper operation and maintenance and mitigation of sanitary sewer overflows will satisfy the corresponding federal NPDES requirements specified in Attachment D (as supplemented by Attachment G). Following notification and reporting requirements in the General Collection System WDRs will satisfy NPDES reporting requirements specified in Attachment D (as supplemented by Attachment G) for sanitary sewer overflows from the collection system upstream of the treatment plant boundaries. Attachments D and G specify reporting requirements for unauthorized discharges from anywhere within the plant downstream of the plant boundaries.

5. Other Special Provisions

a. Specific Tasks to Reduce Blending

The City of Richmond and Richmond Municipal Sewer District shall implement the following tasks to reduce blending. The City of Richmond may request, and the Regional Water Board authorizes the Executive Officer to approve, changes to Tasks 1-8 and the associated deadlines specified below. The request and any approvals must be in writing. The basis for the request may include allowing the City of Richmond and Richmond Municipal Sewer District time to consider a change in strategy for achieving compliance with the collection system and plant upgrades to reduce blending. The Executive Officer may modify the tasks and deadlines as long as there is reasonable progress toward development of an alternative strategy and reasonable assurance that the alternative strategy will achieve equal or better results.

Table 8. Specific Tasks to Reduce Blending

Task	Compliance Date
1. 2014/2015 Sewer Projects Workplan The City of Richmond and Richmond Municipal Sewer District shall submit a workplan identifying specific sewer rehabilitation projects to be done between July 2014 and June 2015. The workplan shall include repair and/or replacement of at least two miles of sewer lines.	August 1, 2013
2. 2014/2015 Sewer Projects Completion Report The City of Richmond and Richmond Municipal Sewer District shall submit a report verifying completion of the 2014/2015 sewer projects identified in Task 1.	December 1, 2015
3. Third Street Stormwater Abatement Project Investigation Report and Workplan The City of Richmond and Richmond Municipal Sewer District shall submit the results of an investigation to identify potential stormwater outfall locations that are submerged during high tides, and submit a work plan to install check valves or flapgates on the outfall discharge pipes.	September 1, 2013
4. Third Street Stormwater Abatement Project Completion Report The City of Richmond and Richmond Municipal Sewer District shall submit a report verifying implementation of the work identified in the workplan described in Task 3.	September 1, 2014
5. 13th Street Sewer Project The City of Richmond and Richmond Municipal Sewer District shall submit a report verifying completion of the 13th Street sewer project to complete repair and/or replacement of at least one mile of sewer lines.	November 1, 2014
6. 2015/2016 Sewer Project Workplan The City of Richmond and Richmond Municipal Sewer District shall submit a workplan identifying specific sewer rehabilitation projects to be done between July 2015 and June 2016. The workplan shall include repair and/or replacement of at least two miles of sewer lines.	August 1, 2014
7. 2015/2016 Sewer Projects Completion Report The City of Richmond and Richmond Municipal Sewer District shall submit a report verifying completion of the 2015/2016 sewer projects identified in Task 6.	November 1, 2016

Task	Compliance Date
8. Wet Weather Storage Project The City of Richmond and Richmond Municipal Sewer District shall install and put into service new wet weather pumping and storage facilities at the Richmond Plant, including a storage tank that holds at least 5 million gallons.	September 1, 2014
9. 2016/2017 Sewer Project Workplan The City of Richmond and Richmond Municipal Sewer District shall submit a workplan identifying specific sewer rehabilitation projects to be done between July 2016 and June 2017. The workplan shall include repair and/or replacement of at least two miles of sewer lines.	August 1, 2015
10. 2016/2017 Sewer Projects Completion Report The City of Richmond and Richmond Municipal Sewer District shall submit a report verifying completion of the 2016/2017 sewer projects identified in Task 9.	December 1, 2017
11. Report Progress on Implementing the Wet Weather Improvement Plan. The Discharger shall evaluate and report on the implementation and effectiveness of its Wet Weather Improvement Plan.	Annually, with Annual Self-Monitoring Report due Feb 1 of each year
12. No Feasible Alternatives Analysis (Utility Analysis). If the City of Richmond and Richmond Municipal Sewer District seek to continue to bypass peak wet weather flows around the secondary treatment units at the Richmond Plant based on 40 CFR 122.41(m)(4)(i)(A)-(C), it shall conduct a Utility Analysis that contains all elements described in USEPA's proposed guidance *NPDES Permit Requirements for Peak Wet Weather Discharges from Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems* (December 2005, or the most recent version). In addressing these elements, the Utility Analysis shall specifically contain an alternatives analysis for blending reduction to evaluate strategies to further reduce blending through capital improvements. The analysis shall identify all feasible alternatives and explain why infeasible alternatives are infeasible. The Dischargers shall select feasible actions based on factors including, but not limited to, the need to blend (considering the effectiveness of the collection system and treatment plant improvement projects), the alternative's foreseeable impact on the need to blend, and the alternative's estimated cost relative to the Dischargers' ability to finance the cost. (One means to assess a community's ability to fund wet weather improvements is to consult USEPA's CSO Guidance for Financial Capability Assessment and Schedule Development, EPA Publication Number 832-B-97-004.) The Utility Analysis shall include a timeline for implementation of feasible actions. The primary purposes of the Utility Analysis are to demonstrate that there are currently no feasible alternatives to blending (i.e., all feasible actions that could have been implemented have been implemented) and to identify all feasible actions that can be implemented within the next permit reissuance cycle.	With Report of Waste Discharge due December 31, 2017

b. Copper Action Plan

The Dischargers shall implement pretreatment, source control, and pollution prevention

for copper in accordance with the following tasks and time schedule.

Table 9. Copper Action Plan

Task	Compliance Date
1. Review Potential Copper Sources The Dischargers shall submit an inventory of potential copper sources to the treatment plant.	Completed May 2009
2. Implement Copper Control Program The Dischargers shall submit a plan for and begin implementation of a program to reduce copper sources identified in Task 1. For publicly owned treatment works, the plan shall consist, 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.	Completed February 2010
3. Implement Additional Measures If the Regional Water Board notifies the Dischargers that the three-year rolling mean dissolved copper concentration of the receiving water exceeds 2.2 µg/L, then within 90 days of the notification, the Dischargers shall evaluate its effluent copper concentration trend, and if it is increasing, develop and begin implementation of additional measures to control copper discharges. The Dischargers shall report on the progress and effectiveness of actions taken, together with a schedule for actions to be taken in the next 12 months.	With annual pollution prevention report due February 28 following 90 days after notification
4. Undertake Studies to Reduce Copper Pollutant Impact Uncertainties The Dischargers shall submit an updated study plan and schedule to conduct, or cause to be conducted, technical studies to investigate possible copper sediment toxicity and technical studies to investigate sublethal effects on salmonids. Specifically, the Dischargers shall include the manner in which the above will be accomplished and describe the studies to be performed with an implementation schedule. To satisfy this requirement, the Dischargers may collaborate and conduct these studies as a group.	Completed January 2011
5. Report Status of Copper Control Program The Dischargers shall submit an annual report documenting copper control program implementation and addressing the effectiveness of the actions taken, including any additional copper controls required by Task 3, above, together with a schedule for actions to be taken in the next 12 months. Additionally, the Dischargers shall report the findings and results of the studies completed, planned, or in progress under Task 4. Regarding the Task 4 studies, dischargers may collaborate and provide this information in a single report to satisfy this requirement for an entire group.	With annual pollution prevention report due February 28 each year.

c. Cyanide Action Plan

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

Table 10. Cyanide Action Plan

Task	Compliance Date
1. Review Potential Cyanide Sources The Dischargers shall submit an inventory of potential cyanide sources to the treatment plant. If no cyanide sources are identified, Tasks 2 and 3 are not required, unless the Dischargers receive a request to discharge detectable levels of cyanide to the sewer. If so, the Dischargers shall notify the Executive Officer and implement Tasks 2 and 3.	Completed February 26, 2010
2. Implement Cyanide Control Program The Dischargers shall submit a plan and begin implementation of a program to minimize cyanide discharges to its treatment plant consisting, at a minimum, of the following elements: a. Inspect each potential source 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 USEPA 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. For purposes of this Order, a "significant cyanide discharge" is occurring if cyanide is found in the influent of either treatment plant above 70 µg/L.	With annual pollution prevention report due February 28 each year
3. Implement Additional Cyanide Control Measures If the Regional Water Board notifies the Dischargers that ambient monitoring shows cyanide concentrations are 1 µg/L or higher in the main body of San Francisco Bay, then within 90 days of the notification, the Dischargers shall commence actions to identify and abate cyanide sources responsible for the elevated ambient concentrations, and shall report on the progress and effectiveness of actions taken, together with a schedule for actions to be taken in the next 12 months.	With next annual pollution prevention report due February 28 (at least 90 days following notification)
4. Report Status of Cyanide Control Program The Dischargers shall submit an annual report documenting cyanide control program implementation and addressing the effectiveness of actions taken, including any additional cyanide controls required by Task 3, above, together with a schedule for actions to be taken in the next 12 months.	With annual pollution prevention report due February 28 each year

VII.COMPLIANCE DETERMINATION

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in Attachment A—Definitions, the MRP, Fact Sheet section VI, and the Regional Standard Provisions. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Dischargers 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).

ATTACHMENT A – DEFINITIONS

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

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

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

Average Weekly Effluent Limitation (AWEL)
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
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
Carcinogenic pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (*CV*)
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
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)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit
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)
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
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
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
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
All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

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

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

Maximum Daily Effluent Limitation (MDEL)
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
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)
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 (40 CFR), Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
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
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)
Sample results less than the laboratory's MDL.

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

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP 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

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)
RL is the ML (and its associated analytical method) chosen by the Dischargers 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
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
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

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

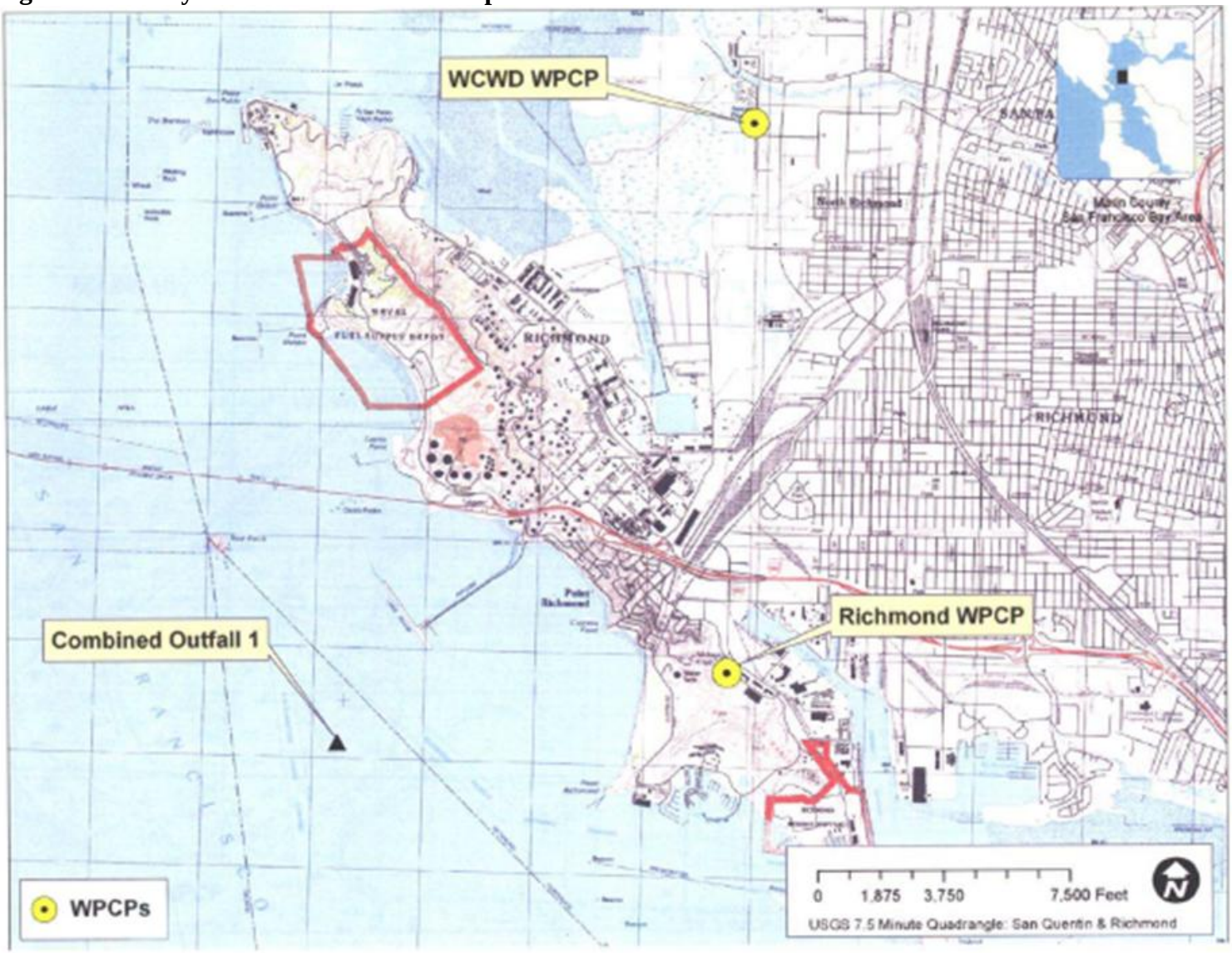
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

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)
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

Figure B. Facility and Outfall Location Map



ATTACHMENT C – PROCESS FLOW DIAGRAM

Figure C-1. West County Wastewater District Treatment Plant Flow Schematic

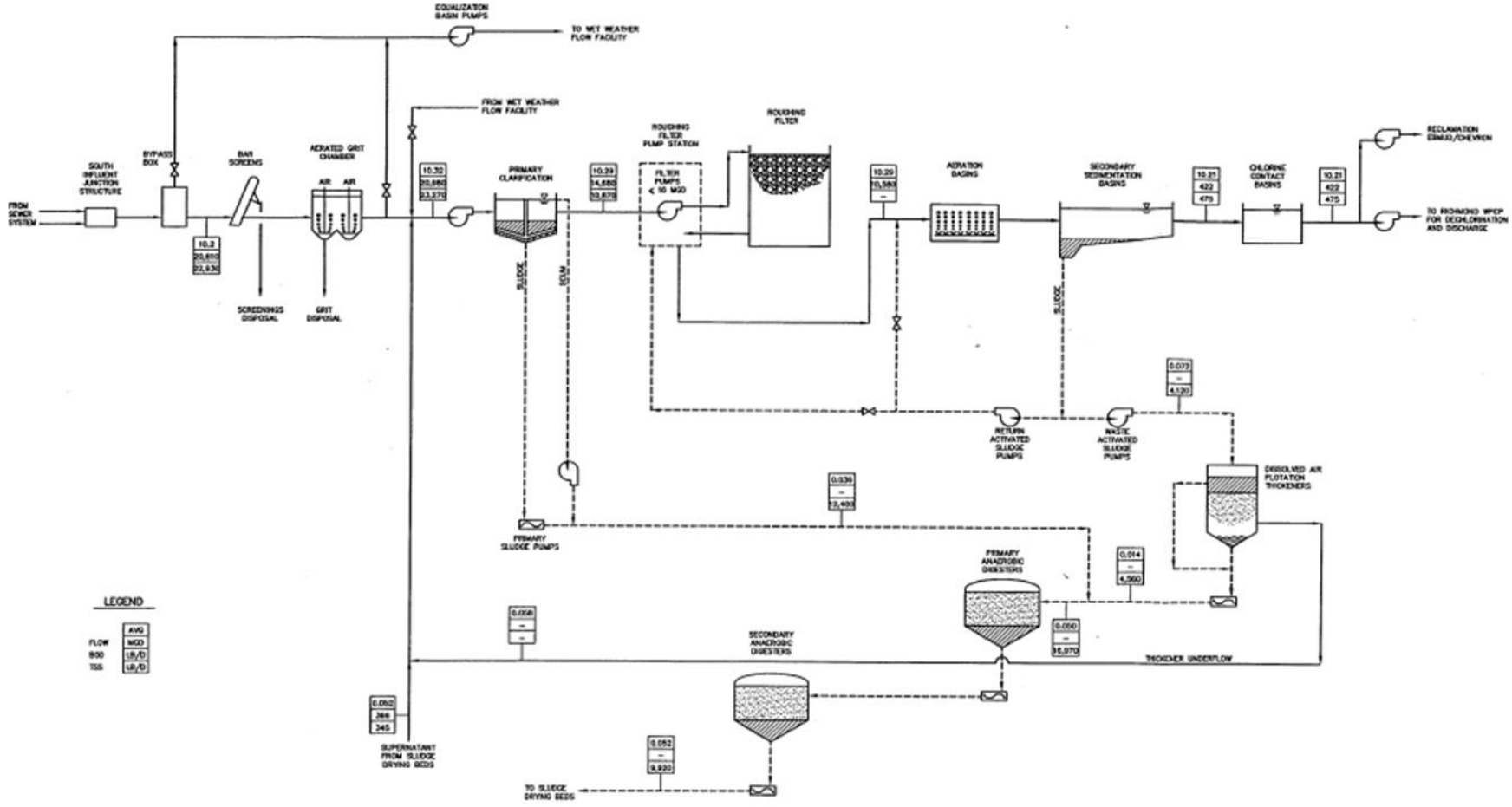
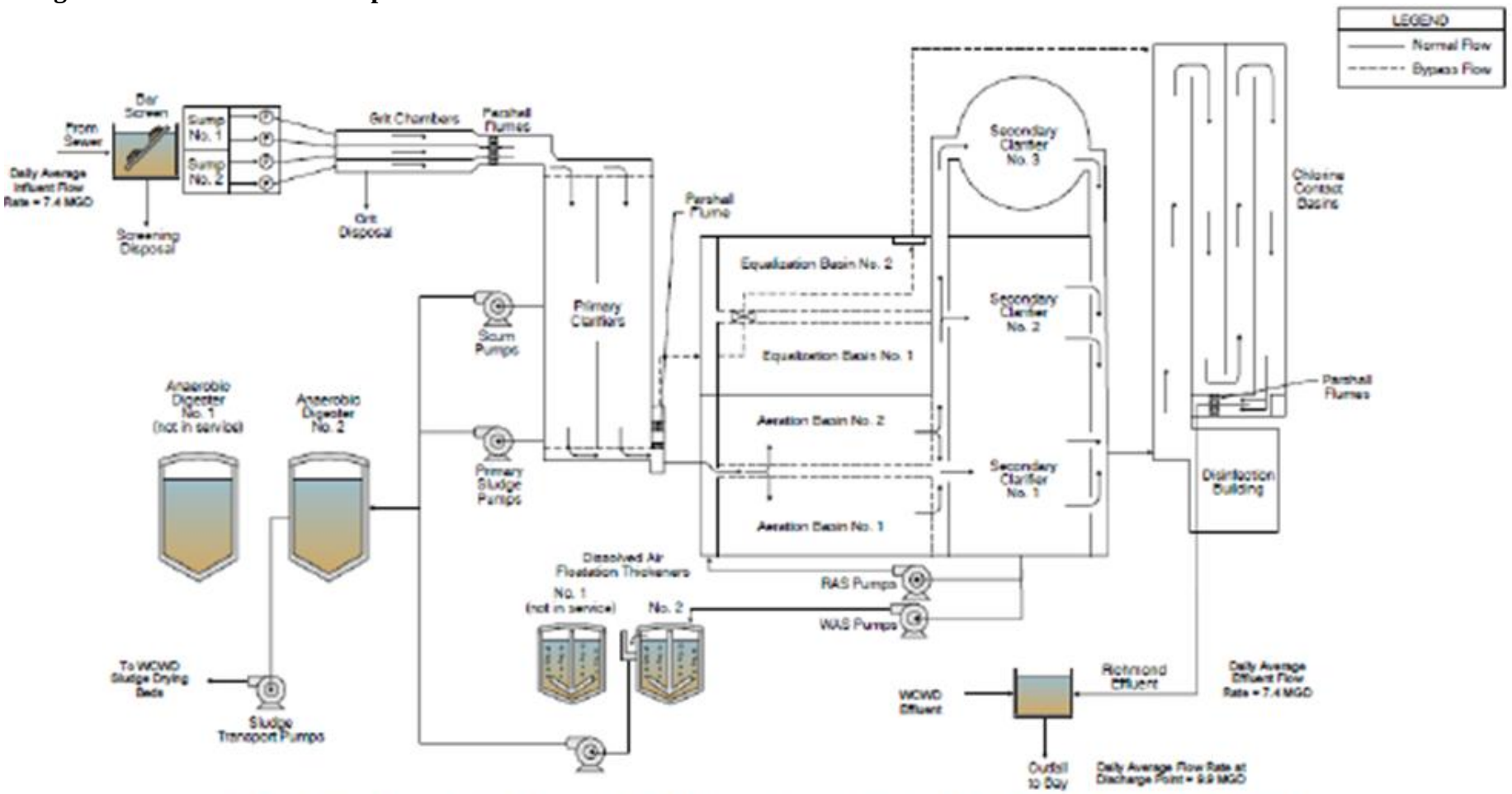


FIGURE 3.8
PROCESS/MASS BALANCE FLOW CHART
WEST COUNTY WASTEWATER DISTRICT

carollo engineers

Figure C-2. Richmond Municipal Sewer District Water Pollution Control Plant Flow Schematic



Process/Mass Balance Flow Diagram City of Richmond Municipal Sewer District Water Pollution Control Plant

ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

2. The Dischargers 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 CFR 122.41(a)(1)).

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

The Dischargers 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 Dischargers 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 the Dischargers only when necessary to achieve compliance with the conditions of this Order (40 CFR 122.41(e)).

E. Property Rights

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

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

F. Inspection and Entry

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

1. Enter upon the Dischargers' premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR 122.41(i)(1));

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

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

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

G. Bypass

1. Definitions

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

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

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

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

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

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

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

c. The Dischargers submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR 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 CFR 122.41(m)(4)(ii).)

5. Notice

a. Anticipated bypass. If the Dischargers 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 CFR 122.41(m)(3)(i).)

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

H. Upset

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

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

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

a. An upset occurred and that the Dischargers can identify the cause(s) of the upset (40 CFR 122.41(n)(3)(i));

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

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

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

3. Burden of proof. In any enforcement proceeding, the Dischargers seeking to establish the occurrence of an upset has the burden of proof. (40 CFR 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

If the Discharges wishes to continue an activity regulated by this Order after the expiration date of this Order, the Dischargers must apply for and obtain a new permit. (40 CFR 122.41(b).)

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

B. 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 CFR 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 Dischargers' 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 Dischargers 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 CFR 122.41(j)(2).)

B. Records of monitoring information shall include:

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

2. The individual(s) who performed the sampling or measurements (40 CFR 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 CFR 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 CFR 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 CFR 122.41(j)(3)(v)); and

6. The results of such analyses. (40 CFR 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Dischargers (40 CFR 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 CFR 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Dischargers 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 Dischargers shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

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

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

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

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

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent

responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR 122.22(b)(2)); and

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

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

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

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order. (40 CFR 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 CFR 122.41(l)(4)(i).)

3. If the Dischargers 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 CFR 122.41(l)(4)(ii).)

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

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

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

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

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 CFR 122.41(l)(6)(iii).)

F. Planned Changes

The Dischargers 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 CFR 122.41(l)(1)):

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

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

3. The alteration or addition results in a significant change in the Dischargers' sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Dischargers 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 CFR 122.41(l)(2).)

H. Other Noncompliance

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

I. Other Information

When the Dischargers 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 Dischargers shall promptly submit such facts or information. (40 CFR 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this 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 CFR 122.42(b)):

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Contents

Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

National Pollutant Discharge Elimination System (NPDES) regulations at 40 CFR 122.48 require that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Regional Water Quality Control Board (hereinafter 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 Dischargers shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between this MRP and the Regional Standard Provisions, this MRP prevails.

B. The Dischargers shall conduct all monitoring in accordance with Attachment D, section III, as supplemented by Attachment G of this Order. Equivalent test methods must be more sensitive than those specified in 40 CFR 136 and specified in the permit.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Locations

Type of Monitoring Location	Monitoring Location Name	Monitoring Location Description
Influent (Richmond Plant)	INF-002 (formerly A-002)	At any point in the Richmond Plant headworks at which all waste tributary to the treatment system is present and preceding any phase of treatment.
Influent (West County Plant)	INF-003 (formerly A-001)	At any point in the West County Plant headworks at which all waste tributary to the treatment system is present and preceding any phase of treatment.
Combined Effluent	EFF-001 (formerly E-001 and E-001-DC)	At any point in the common outfall between the point of discharge and the point at which all flow tributary to the outfall is present following dechlorination.
Combined Effluent	EFF-001B	At any point in the common outfall between the point of discharge and the point at which all blended fully treated and primary-treated waste tributary to the outfall is present following dechlorination (may be the same location as EFF-001).
Effluent (Richmond Plant)	EFF-002 (formerly E-001-D2)	At any point in the Richmond Plant outfall following chlorination, but prior to combining with West County Plant effluent.
Blended Effluent (Richmond Plant)	EFF-002B	At any point in the Richmond Plant at which all blended fully treated and primary-treated waste tributary to the Richmond Plant outfall is present (may be the same location as EFF-002).
Effluent (West County Plant)	EFF-003 (formerly E-001-D1)	At any point in the West County Plant outfall following chlorination, but prior to combining with Richmond Plant effluent.
Biosolids (Richmond Plant)	BIO-002 (formerly B-002)	Biosolids monitoring at the Richmond Plant.
Biosolids (West County Plant)	BIO-003 (formerly B-001)	Biosolids monitoring at the West County Plant.

III. INFLUENT MONITORING REQUIREMENTS

The Dischargers shall monitor the influent to the individual treatment plants at Monitoring Locations INF-002 and INF-003 as follows.

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow[1]	MGD	Continuous	1/Day
Biochemical Oxygen Demand 5-day @ 20°C ($CBOD_5$)	mg/L	C-24	3/Week
Total Suspended Solids (TSS)	mg/L	C-24	3/Week
Cyanide	µg/L	Grab	2/Year

Unit Abbreviations:
mg/L = milligrams per liter
µg/L = micrograms per liter
Sample Type:
C-24 = 24-hour composite
Sampling Frequency:
Continuous/D = measured continuously, and recorded and reported daily
1/Day = Once per day
1/Week = Once per week

[1] Flows shall be monitored continuously and the following shall be reported in the monthly self-monitoring reports: Average, maximum and minimum daily flows.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

The Dischargers shall monitor the discharge to the common outfall at Monitoring Location EFF-001 as follows:

Table E-3. Effluent Monitoring at EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow[1]	MGD	Continuous	Continuous/D
Total Ammonia, as N[5]	mg/L	Grab	1/Month
Chlorine, Total Residual[2]	mg/L	Continuous	1 / 2 Hours
Acute Toxicity[3]	% Survival	C-24	1/Month
Chronic Toxicity[4]	TU_c	C-24	1/Quarter
Copper	µg/L	C-24	1/Month
Nickel	µg/L	C-24	1/Month
Cyanide[5]	µg/L	Grab	1/Month
Bis(2-Ethylhexyl)Phthalate	µg/L	Grab	2/Year
Endrin	µg/L	Grab	2/Year
Heptachlor	µg/L	C-24	2/Year
Dioxin-TEQ[6]	µg/L	Grab	2/Year (1/Wet, 1/Dry Season)

Unit Abbreviations:
MGD = million gallons per day
mg/L = milligrams per liter
TUc = chronic toxicity units
µg/L = micrograms per liter
C-24 = 24-hour composite
Sampling Frequency:
Continuous/D = measured continuously, and recorded and reported daily
1 / 2 Hours = Once every two hours
1/Month = Once per month
1/Quarter = Once per quarter
2/Year = Twice per year

[1] For effluent flows, the following information shall be reported monthly:
- Daily average flow (MGD)
- Monthly average flow (MGD)
- Maximum daily flow (MGD)
- Minimum daily flow (MGD)

[2] Effluent chlorine residual concentrations shall be monitored continuously or, at a minimum, every hour. The Dischargers shall report for each day the maximum residual chlorine concentration observed following dechlorination. However, if monitoring continuously, the Dischargers shall report for each day the maximum residual chlorine concentration based only on discrete readings from the continuous monitoring taken every hour on the hour. The Dischargers shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use other continuous monitoring data for discretionary enforcement.

[3] Acute bioassay tests shall be performed in accordance with MRP section V.A.

[4] Critical life stage toxicity tests shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in MRP section V.B.

[5] Each sampling 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 an appropriate container and appropriately preserved. Grab samples for ammonia and cyanide may also be composited following appropriate laboratory practices prior to analysis.

[6] Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of USEPA Method 1613.

B. Monitoring Location EFF-001B (Blending)

During blending events, the Dischargers shall monitor the discharge of treated wastewater at Monitoring Location EFF-001B as follows.

Table E-4. Effluent Monitoring at EFF-001B

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow[1],[2]	MGD	Continuous	Continuous/D
Total Ammonia, as N	mg/L	Grab	1/Year[3]
Copper[4]	µg/L	C-24	1/Year[3]
Nickel[4]	µg/L	C-24	1/Year[3]
Cyanide[4]	µg/L	Grab	1/Year[3]
Bis(2-Ethylhexyl)Phthalate	µg/L	Grab	1/Year[3]
Endrin	µg/L	Grab	1/Year[3]
Heptachlor	µg/L	C-24	1/Year[3]

Unit Abbreviations:
MGD = million gallons per day
MG = million gallons
mg/L = milligrams per liter
µg/L = micrograms per liter
°C = degrees Celsius
C-24 = 24-hour composite
MPN/100 mL = most probable number per 100 milliliters

Sampling Frequency:
Continuous/D = measured continuously, and recorded and reported daily
1/Day = Once per day
1/Year = Once per year
1/Blending Event = Once per blending event

[1] For effluent flows, the following information shall be reported monthly:
- Daily average flow (MGD)
- Maximum daily flow (MGD)

[2] "Flow" means the total volume of blended water discharged. "Volume of partially-treated wastewater" means the total volume of wastewater that bypassed secondary treatment.

[3] If a TSS sample collected on the same day exceeds 45 mg/L, the frequency shall be once per day.

[4] As total recoverable metal.

C. Monitoring Locations EFF-002 and EFF-003

The Dischargers shall monitor the individual treatment plants' effluent at Monitoring Locations EFF-002 and EFF-003 as follows:

Table E-5. Effluent Monitoring at EFF-002 and EFF-003

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow[1]	MGD	Continuous	Continuous/D
pH	Standard Units	Grab	3/Week
BOD (5-day @ 20ºC)[2]	mg/L	C-24	3/Week
Total Suspended Solids[2]	mg/L	C-24	1/Day
Total Coliform[3]	MPN/100 mL	Grab	5/Week
Enterococcus[3][4]	Colonies/100 mL	Grab	5/Week
Oil and Grease[5]	mg/L	Grab	2/Month

Unit Abbreviations:
MGD = million gallons per day
mg/L = milligrams per liter
°C = degrees Celsius
C-24 = 24-hour composite
MPN/100 mL = most probable number per 100 milliliters
Sampling Frequency:
Continuous/D = measured continuously, and recorded and reported daily
3/Week = Three times per week
5/Week = Five times per week
1/Month = Once per month

[1] For effluent flows, the following information shall be reported monthly:
- Daily average flow (MGD)
- Monthly average flow (MGD)
- Maximum daily flow (MGD)
- Minimum daily flow (MGD)

[2] The BOD and TSS percent removal shall be reported for each calendar month in accordance with Effluent Limitation IV.A.1. BOD and TSS samples shall be collected simultaneously with influent samples.

[3] When replicate analyses are made of an enterococcus or total coliform sample on the same day, the reported result shall be the geometric mean of the replicate sample.

[4] If after three months the Dischargers have demonstrated full compliance with the enterococcus limitation, the minimum monitoring frequency shall be reduced to four times per year. The four samples shall be collected in different calendar months during the higher recreational water contact season (June to October). If the enterococcus effluent limitation is later exceeded, the Dischargers shall conduct 5/Month accelerated sampling for at least three consecutive months. If full compliance is demonstrated after the three-month period, the Dischargers may return to the 4/Year sampling frequency.

[5] Each oil and grease sampling and analysis event shall be conducted in accordance with USEPA Method 1664.

D. Monitoring Location EFF-002B (Blending)

During blending events, the City of Richmond and the Richmond Municipal Sewer District shall monitor the discharge of treated wastewater from the Richmond Plant at Monitoring Location EFF-002B as follows.

Table E-6. Effluent Monitoring at EFF-002B

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow[1],[2]	MGD	Continuous	Continuous/D
Volume of Partially-Treated Wastewater[2]	MG	Calculated	1/Blending Event
Duration of Blending Event[3]	Hours	Calculated	1/Blending Event
pH	Standard Units	Grab	1/Year[4]
BOD (5-day @ 20ºC)	mg/L	C-24	1/Year[4]
Total Suspended Solids[4]	mg/L	C-24	1/Day
Total Coliform	MPN/100 mL	Grab	1/Day
Enterococcus	Colonies/100 mL	Grab	1/Year[4]

Unit Abbreviations:
MGD = million gallons per day
MG = million gallons
mg/L = milligrams per liter
µg/L = micrograms per liter
°C = degrees Celsius
C-24 = 24-hour composite
MPN/100 mL = most probable number per 100 milliliters

Sampling Frequency:
Continuous/D = measured continuously, and recorded and reported daily
1/Day = Once per day
1/Year = Once per year
1/Blending Event = Once per blending event

[1] For effluent flows, the following information shall be reported monthly:
- Daily average flow (MGD)
- Maximum daily flow (MGD)

[2] "Flow" means the total volume of blended water discharged. "Volume of partially-treated wastewater" means the total volume of wastewater that bypassed secondary treatment.

[3] For each blending event, report the date and time each event starts and ends.

[4] If a TSS sample collected on the same day exceeds 45 mg/L, the frequency shall be once per day.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Dischargers shall monitor whole effluent acute and chronic toxicity at Monitoring Location EFF-001 as follows.

A. Whole Effluent Acute Toxicity

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

2. Test organisms shall be fathead minnow (*Pimephales promelas*). The Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.

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

4. If specific identifiable substances in the discharge can be demonstrated by the Dischargers as being rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after the test samples are adjusted to remove the influence of those substances. Written approval from the Executive Officer must be obtained to authorize such an adjustment.

5. The sample may be taken from final secondary effluent prior to disinfection. 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 reported. If a violation of acute toxicity requirements occurs, the bioassay test shall be repeated with new fish as soon as practical and shall be repeated until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater).

B. Whole Effluent Chronic Toxicity

1. Chronic Toxicity Monitoring Requirements

a. Sampling. The Dischargers shall collect 24-hour composite samples of the effluent for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

b. Test Species. The test species shall be *Americamysis bahia* (mysid shrimp). The Discharger shall conduct a screening chronic toxicity test as described in Appendix E-1 following any significant change in the nature of the effluent. If there is no significant change, the Discharger shall conduct a screening test prior to application for permit reissuance.

c. Frequency. The frequency of routine and accelerated chronic toxicity monitoring shall be as specified below.

(1) Monitor routinely once per quarter.

(2) Accelerate monitoring to monthly after exceeding a three-sample median of 10 TU_c[1] or a single sample maximum of 20 TUc. The Executive Officer may specify a different frequency for accelerated monitoring based on the TU_c results.

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

(4) If accelerated monitoring confirms consistent toxicity in excess of either "trigger" in (2), above, continue accelerated monitoring and initiate toxicity reduction evaluation (TRE) procedures in accordance with section B.3, below.

(5) Return to routine monitoring after implementing appropriate elements of the TRE, and either the toxicity drops below both "triggers" in (2), above, or, based on the TRE results, the Executive Officer authorizes a return to routine monitoring.

Monitoring conducted pursuant to a TRE effort shall satisfy the requirements for routine and accelerated monitoring while the TRE investigation is underway.

d. 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 fourth Edition (EPA-821-R-02-013), with exceptions granted the Dischargers in writing by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP). If specific identifiable substances in the discharge can be demonstrated by the Dischargers as being rapidly rendered harmless upon discharge to the receiving water, the Dischargers may manually adjust the pH. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any other such adjustment."

e. Dilution Series. The Dischargers shall conduct tests at 40%, 20%, 10%, 5%, and 2.5%. The "%" represents percent effluent as discharged. The Dischargers may use the biological buffer MOPS (3-[N-morpholino]propanesulfonic acid) to control pH drift and ammonia toxicity caused by increasing pH during the test.

2. Chronic Toxicity Reporting Requirements

a. Toxicity test results for the current reporting period shall be provided in the self-monitoring report and shall include, at a minimum, for each test.

(1) Sample date

(2) Test initiation date

(3) Test species

[1] A TU_c equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC_{25}, EC_{25}, or NOEC values. The MRP defines these terms, their usage, and other chronic toxicity monitoring program requirements.

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

(5) No Observable Effect Level (NOEL) values in percent effluent. The NOEL shall equal to the IC_{25} or EC_{25} (see MRP Appendix E-1). If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall equal to the No Observable Effect Concentration (NOEC) derived using hypothesis testing. The NOEC is the maximum percent effluent concentration that causes no observable effect on test organisms based on a critical life stage toxicity test.

(6) IC_{15}, IC_{25}, IC_{40}, and IC_{50} values (or EC_{15}, EC_{25} ... etc.) as percent effluent

(7) TU_c values (100/NOEL, where NOEL = IC_{25}, EC_{25}, or NOEC as discussed in Appendix E-1)

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

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

(10) Available water quality measurements for each test (pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia)

b. The results of the most recent three chronic toxicity tests and the 3-sample median shall be provided in the self-monitoring report as TUc's.

3. Chronic Toxicity Reduction Evaluation (TRE)

a. The Dischargers shall prepare a generic TRE work plan within 90 days of the effective date of this Order to be ready to respond to toxicity events. The Dischargers shall review and update the work plan as necessary so that it remains current and applicable to the discharge and discharge facilities.

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

c. Within 30 days of the date of completion of the accelerated monitoring tests observed to exceed either trigger, the Dischargers 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 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 Provision IV.C.2 of the 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 Dischargers 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 stormwater 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 Dischargers' actions and efforts to identify and control or reduce sources of consistent toxicity.

VI. RECEIVING WATER MONITORING REQUIREMENTS

The Dischargers shall continue to participate in the Regional Monitoring Program (RMP), which involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota.

VII. PRETREATMENT AND BIOSOLIDS MONITORING REQUIREMENTS

The Dischargers shall comply with the pretreatment requirements specified below for Monitoring Locations INF-002, INF-003, EFF-002, EFF-003, BIO-002 and BIO-003. The Dischargers shall report summaries of analytical results in annual and semi-annual pretreatment reports in accordance with Attachment H. At its option, the Dischargers may also report biosolids analytical results in their eSMR by manual entry, by EDF/CDF, or as an attached file.

Table E-7. Pretreatment and Biosolids Monitoring Requirements

Parameter	Sample Locations and Frequencies[1]			Sample Type	
	INF-002 and INF-003	EFF-002 and EFF-003	BIO-002 and BIO-003	Influent & Effluent	Biosolids[5]
Volatile Organic Compounds (VOC's)[2]	2/Year	2/Year	2/Year	Grab	Grab
Base/neutrals and acids extractable organic compounds (BNA) [2]	1/Year	1/Year	2/Year	Grab	Grab
Hexavalent Chromium[3]	1/Month	1/Month	2/Year	Grab	Grab
Metals[4]	1/Month	1/Month	2/Year	24-hour Composite[6]	Grab
Mercury	1/Month	1/Month	2/Year	Grab or 24-hour Composite[6,7]	Grab
Cyanide	1/Month	1/Month	2/Year	Grab	Grab

Sampling Frequency:
2/Year = each calendar year (at about 6 month intervals, once in the dry season, once in the wet season)
1/Year = once each calendar year
1/Month = once each month

[1] The Dischargers may elect to use the influent, and effluent monitoring conducted in accordance with Tables E-2, E-3, and E-4 and Provision VI.C.2 to satisfy these pretreatment requirements.

[2] GC/MS methods used must be able to quantify to an equivalent level as applicable GC methods (EPA 601, 602, 603, 604, 606).

[3] Total chromium may be substituted for hexavalent chromium at the Dischargers' discretion.

[4] The parameters are arsenic, cadmium, copper, lead, nickel, silver, zinc, and selenium.

[5] 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-C. If land application is used for disposal, the Dischargers shall also comply with the biosolids monitoring requirements of 40 CFR 503.

[6] If an automatic compositor is used, the Dischargers shall obtain 24-hour composite samples through flow-proportioned composite sampling. Alternatively, 24-hour composite samples may consist of discrete grab samples combined (volumetrically flow-weighted) prior to analysis or mathematically flow-weighted.

[7] The Dischargers 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.

VIII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Dischargers shall comply with all Federal Standard Provisions and Regional Standard Provisions related to monitoring, reporting, and recordkeeping in Attachments D and G, with modifications shown in section VIII.D below.

B. Self Monitoring Reports (SMRs)

1. **SMR Format.** The Dischargers shall 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). The CIWQS website will provide additional directions for SMR submittals in the event of a service interruption for electronic submittal.

2. **SMR Due Dates and Contents.** The Dischargers shall submit SMRs by the due dates, and with the contents, specified below:

   a. **Monthly SMRs —** Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. The monthly SMR shall contain the applicable items described in sections V.B and V.C of both Attachments D and G of this Order. See Provision VI.C.2.a (Effluent Characterization Study and Report) of this Order for information that must also be reported with the monthly SMR.

   b. **Annual SMR —** Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the items described Attachment G section V.C.1.f. See Provision VI.C.2 of the Order (Effluent Characterization Study and Report) for requirements to submit reports with the annual SMR.

   c. **Additional Specifications for Submitting SMRs to CIWQS —** If the Dischargers submit SMRs to CIWQS, they shall submit analytical results and other information using one of the following methods:

Table E-8. SMR Reporting for CIWQS

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	**Attached File**
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)	Required for All Results	
Dissolved Oxygen Temperature	Required for Monthly Maximum and Minimum Results Only[1]	Dischargers may use this method for all results or keep records
Cyanide Arsenic Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Zinc Dioxins and Furans (by U.S. EPA Method 1613)	Required for All Results[2]	
Antimony Beryllium Thallium Pollutants by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625	Not Required (unless identified in influent, effluent, or receiving water monitoring tables), But Encouraged [1]	Dischargers may use this method and submit results with application for permit reissuance, unless data submitted by CDF/EDF upload
Volume and Duration of Blended Discharge[3]	Required for all Blended Effluent Discharges	
Analytical Method	Not Required (Dischargers may select "data unavailable")[1]	

Collection Time Analysis Time	Not Required (Dischargers may select "0:00")[1]	

[1] The Dischargers shall continue to monitor at the minimum frequency specified in the monitoring tables, keep records of the measurements, and make the records available upon request.

[2] These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).

[3] The requirement for volume and duration of blended discharge applies only if this Order authorizes the Dischargers to discharge blended effluent.

3. **Monitoring Periods.** Monitoring periods for all required monitoring shall be completed as set forth in the table below:

Table E-9. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Day after permit effective date	All
1/Day	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.
1/Week 2/Week 3/Week 5/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday
1/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month
1/Quarter	Permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
1/Year	January 1 following (or on) permit effective date	January 1through December 31
2/Year	Closest of May 1 or November 1 following (or on) permit effective date	Once during the wet season (typically November 1 – April 30) and once during the dry season (typically May 1 through October 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
1/5 years	Permit effective date	Once during the permit term within 12 months prior to applying for permit reissuance.

4. **RL and MDL Reporting.** The Dischargers shall report with each sample result the Reporting Level (RL) and Method Detection Limit (MDL) as determined by the procedure in 40 CFR 136. The Dischargers 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 purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+/- a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

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

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

C. Discharge Monitoring Reports

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

2. Once notified by the State or Regional Water Board, the Dischargers shall submit hard copy DMRs. DMRs must be signed and certified as required by the Standard Provisions. The Dischargers 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. Modifications to Attachment G

1. Attachment G sections V.C.1.f and V.C.1.g are revised as follows, and section V.C.1.h (Reporting data in electronic format) is deleted.

f. Annual self-monitoring report requirements

By the date specified in the MRP, the Dischargers shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

1) Annual compliance summary table of treatment plant performance, including documentation of any blending events (this summary table is not required if the Dischargers have submitted the year's monitoring results to CIWQS in electronic reporting format by EDF/CDF upload or manual entry);

2) Comprehensive discussion of treatment plant performance and compliance with the permit (This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);

3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater (this item is not required if the Dischargers have submitted the year's monitoring results to CIWQS in electronic reporting format by EDF/CDF upload or manual entry);

4) List of approved analyses, including the following:

   (i) List of analyses for which the Dischargers are certified;

   (ii) List of analyses performed for the Dischargers by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and

   (iii) List of "waived" analyses, as approved;

5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;

6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Dischargers do not route all stormwater to the headworks of its wastewater treatment plant); and

7) Results of facility report reviews (The Dischargers shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Dischargers shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Dischargers shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Dischargers shall submit SMRs addressed as follows, unless the Dischargers submit SMRs electronically to CIWQS:

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

h. Reporting data in electronic format – *Deleted*

2. Attachment G sections V.E.2, V.E.2.a, and V.E.2.c are revised as follows, and sections V.E.2.b (24-hour Certification) and V.E.2.d (Communication Protocol) are deleted.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants[2]

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and supersede requirements imposed on the Dischargers by the Executive Officer by letter of May 1, 2008.

a. Two (2)-Hour Notification

For any unauthorized discharges that enter a drainage channel or a surface water, the Dischargers shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the California Emergency Management Agency (CalEMA, currently 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. Timely notification by the Dischargers to CalEMA also satisfies notification to the Regional Water Board. Notification shall include the following:

1) Incident description and cause;

2) Location of threatened or involved waterway(s) or storm drains;

3) Date and time the unauthorized discharge started;

4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;

5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary treated, and so on); and

[2] California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification – *Deleted*

c. 5-day Written Report

Within five business days, the Dischargers shall submit a written report that includes, in addition to the information required above, the following:

1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;

2) Efforts implemented to minimize public exposure to the unauthorized discharge;

3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;

4) Corrective measures taken to minimize the impact of the unauthorized discharge;

5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;

6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and

7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol – *Deleted*

E. Modifications to Attachment H

1. Attachment H, Appendix H-3, Signature Requirements for Pretreatment Annual and Semiannual Reports, is revised as follows.

The pretreatment annual and semiannual 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 Dischargers (POTW - 40 CFR 403.12[m]). Signed copies of the reports shall be submitted to the State Water Board~~,~~ and the Regional Water Board through the electronic self-monitoring report (eSMR) module of the California Integrated Water Quality System (CIWQS).

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 Dischargers 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, 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.

    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%, 6.25%, and 0 %, where "%" is percent effluent as discharged, or as otherwise approved the Executive Officer if different dilution ratios are needed to reflect discharge conditions.

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

APPENDIX E-2
SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Table AE-1. Critical Life Stage Toxicity Tests for Estuarine Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	*(Skeletonema costatum)* *(Thalassiosira pseudonana)*	Growth rate	4 days	1
Red alga	*(Champia parvula)*	Number of cystocarps	7–9 days	3
Giant kelp	*(Macrocystis pyrifera)*	Percent germination; germ tube length	48 hours	2
Abalone	*(Haliotis rufescens)*	Abnormal shell development	48 hours	2
Oyster Mussel	*(Crassostrea gigas)* *(Mytilus edulis)*	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	*(Strongylocentrotus purpuratus, S. franciscanus)* *(Dendraster excentricus)*	Percent fertilization	1 hour	2
Shrimp	*(Americamysis 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/821/R-02/014. October 2002.

Table AE-2. 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)*	Final cell density	4 days	4

Toxicity Test Reference:

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, fourth Edition Chronic manual (EPA-821-R-02-013, October 2002).

Table AE-3. Toxicity Test Requirements for Stage One Screening Phase

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

[1] (a) Marine refers to receiving water salinities greater than 1 part per thousand (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.

[2] The freshwater species may be substituted with marine species if:

(a) The salinity of the effluent is above 1 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.

ATTACHMENT F - FACT SHEET

Contents

Tables

ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the discharge.

Table F-1. Facility Information

WDID	2 071037001		
Dischargers	1. West County Agency 2. West County Wastewater District 3. City of Richmond 4. Richmond Municipal Sewer District No. 1		
Facility Names	1. West County Agency Common Outfall	2. West County Wastewater District Treatment Plant and its Wastewater Collection System	3. Richmond Municipal Sewer District Water Pollution Control Plant and its Wastewater Collection System
Facility Addresses	2910 Hilltop Drive Richmond, CA 94806 Contra Costa County	2377 Garden Tract Road Richmond, CA 9480 Contra Costa County	601 Canal Boulevard Richmond, CA 94804 Contra Costa County
CIWQS Place Numbers	215234	272082	252657
Facility Contacts, Titles, and Phone Numbers	Eddy J. Shalaby Agency Manager (510) 222 – 6700	Eddy J. Shalaby General Manager (510) 222 – 6700	Alan Wolken Interim Engineering Services Director (510) 307-8140
Authorized Person to Sign and Submit Reports	Same as above		
Mailing Addresses	2910 Hilltop Drive, Richmond, CA 94806	2910 Hilltop Drive, Richmond, CA 94806	450 Civic Center Plaza Richmond, CA 94804
Billing Addresses	Same as Mailing Addresses		
Facility Type	Publicly Owned Treatment Works (POTW)		
Major or Minor Facility	Major		
Threat to Water Quality	1		
Complexity	A		
Pretreatment Program	Yes		
Reclamation Requirements	Not Applicable		
Facility Permitted Flow	---	12.5 MGD	16.0 MGD
Facility Design Flow	---	12.5 MGD dry weather capacity 21 MGD wet weather capacity	16 MGD dry weather capacity 20 MGD wet weather capacity
Watershed	San Francisco Bay		
Receiving Water	Central San Francisco Bay		

Receiving Water Type	Marine		
Service Area	---	Parts of the City of Richmond, City of San Pablo, and adjacent unincorporated areas	Incorporated area of Richmond
Service Area Population	---	93,976	68,285

A. West County Agency is a Joint Powers Agency whose members are the West County Wastewater District, City of Richmond, and Richmond Municipal Sewer District No. 1. The West County Wastewater District owns and operates the West County Wastewater District Treatment Plant (West County Plant) and its associated sanitary sewer collection system. The City of Richmond and Richmond Municipal Sewer District No. 1 own and operate Richmond Municipal Sewer District Water Pollution Control Plant (Richmond Plant) and its associated sanitary sewer collection system. Together, the West County Agency, the West County Wastewater District, the City of Richmond, and the Richmond Municipal Sewer District are hereinafter referred to as the Dischargers.

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 Dischargers herein.

B. These facilities discharge treated wastewater from a common outfall to Central San Francisco Bay, a water of the State and the United States. They are currently regulated by Order No. R2-2008-0003 (hereinafter previous order) (NPDES Permit No. CA0038539), which was adopted on January 30, 2008; became effective on April 1, 2008; and expired on March 31, 2013. The discharge is also currently regulated under Order No. R2-2012-0096 (NPDES Permit CA 0038849), which establishes requirements on mercury and PCBs from wastewater discharges in the region. This Order does not affect the mercury and PCBs permit. Furthermore, the Dischargers are subject to Cease and Desist Order No. R2-2008-0004, which addresses the Discharger's inability to immediately comply with certain effluent limits established in the previous order.

C. On October 3, 2012, the Dischargers filed a Report of Waste Discharge and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment

1. **Facility Description.** This permit regulates two separate wastewater treatment plants and their wastewater collection systems that combine their treated wastewater prior to discharge. The locations of the treatment plants and the common outfall are shown in Attachment B. The West County Wastewater District owns and operates the West County Wastewater District Water Pollution Control Plant (West County Plant). The West County Plant serves a population of approximately 93,000 from parts of the City of Richmond; the City of San Pablo; the communities of Tara Hills, Rollingwood, Bayview, and El Sobrante; the Crestview portion of Pinole; and some unicorporated portions of Contra Costa County. It has a design capacity of 12.5 million gallons per day (MGD) for dry weather and a hydraulic capacity of 21 MGD for wet weather conditions. The annual average daily flow in 2011 was approximately 8.8 MGD.

   The City of Richmond and Richmond Municipal Sewer District own and operate the Richmond Municipal Sewer District Water Pollution Control Plant (Richmond Plant). The Richmond

Municipal Sewer District facilitates the allocation of sewer use fees paid by City of Richmond residents. The City handles administrative, management, and source control responsibilities and contracts out the operations and maintenance of the sewer collection system and wastewater treatment plant. A private operations firm, Veolia Water West Operating Services, Inc., operates the Richmond Plant under contract and direction of the City of Richmond. The Richmond Plant serves a population of approximately 68,000 covering most of the incorporated area of Richmond. It has a design capacity of 16 MGD for dry weather and a hydraulic capacity of 20 MGD for wet weather conditions. The annual average daily flow in 2011 was about 8.1 MGD. Chlorinated effluents from the West County Plant and the Richmond Plant are combined and dechlorinated prior to discharge from the West County Agency Common Outfall into San Francisco Bay.

2. **Collection System.** The West County Wastewater District and the City of Richmond independently own and operate their treatment plants and the sanitary sewer collection systems within their separate service areas. West County Wastewater District has about 249 miles of gravity sewer and 11 miles of force main with 17 pump stations. The City of Richmond has about 187 miles of sewer line with 11 pump stations. Both collection systems are separately covered by the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2006-0003-DWQ).

3. **Treatment Description.** The wastewater treatment processes at the West County Plant consist of bar screens, an aerated grit chamber, primary clarifiers, a roughing filter (high-rate trickling filter), an activated sludge unit, secondary clarifiers, and chlorine contact basins. The wastewater treatment processes at the Richmond Plant consist of bar screens, grit removal chambers, primary clarifiers, activated sludge basins, secondary clarifiers, and chlorine contact basins. Flow diagrams for the West County Plant and the Richmond Plant are shown in Attachment C. Treated wastewater from the West County Plant is transported to the Richmond Plant where it is combined with the Richmond Plant effluent, dechlorinated, and then discharged through West County Agency's common deep-water outfall into Central San Francisco Bay.

   Wet weather conditions sometime exceed the secondary treatment capacity at the Richmond Plant due to infiltration into the collection system. Under these conditions, when wet weather inflows exceed 20 MGD, excess primary-treated flows are diverted around the biological treatment units to two equalization basins with a total volume of 2 million gallons (wet weather storage). Once storage is at capacity, excess primary-treated flows are blended with the secondary-treated wastewater in the chlorine contact basin for disinfection. The combined flow is disinfected and dechlorinated prior to discharge to Central San Francisco Bay. After the wet weather event concludes, the stored wastewater in the equalization basins is drained back to the headworks and treated through the secondary treatment units.

4. **Discharge Point.** The treated wastewaters from the West County Plant and the Richmond Plant are combined, dechlorinated, and discharged through Discharge Point No. 001 about 8,200 feet offshore in Central San Francisco Bay at a depth varying from 24 to 32 feet below mean sea level. The outfall is equipped with a multi-port diffuser. The diffuser is a 6-foot diameter, 1,112-foot long reinforced concrete pipe embedded into the channel bottom and aligned in an east-west orientation. The first port is located 8,166 feet from shore. The diffuser has 140 ports spaced 8-feet apart discharging horizontally in alternating directions.

5. **Biosolids Management.** Biosolids from the Richmond Plant are thickened by dissolved air floatation, anaerobically digested, and pumped to the West County Plant for drying and disposal. At the West County Plant, primary clarifier sludge is combined with thickened secondary clarifier sludge that has been thickened using dissolved air floatation, anaerobically digested, and dewatered in drying beds. Dried sludge from both plants is hauled off-site for disposal at Keller Canyon Landfill, West Contra Costa Landfill, or Vasco Road Landfill.

6. **Stormwater Discharge.** All stormwater in contact with equipment or wastewater at each plant is collected and directed back to the headworks for treatment. The Dischargers are not covered under the statewide general NPDES permit for stormwater discharges associated with industrial activities (NPDES General Permit No. CAS000001) because the plants do not discharge stormwater associated with industrial activity separate from that covered by this Order.

7. **Water Recycling.** About 2 to 3 MGD of treated wastewater from the West County Plant is recycled at the Chevron refinery. This involves pumping about 2 to 3 MGD of nitrified (<1 mg/L N) secondary-treated wastewater to the East Bay Municipal Utility District's (EBMUD's) Richmond Advanced Recycled Expansion (RARE) facility where the treated wastewater receives additional treatment. The RARE facility consists of microfiltration and reverse osmosis to generate high quality water for the Chevron refinery's boilers. The RARE facility generates approximately 0.36 to 0.5 MGD of microfiltration reject that is returned back to the West County Plant. The West County Plant also has the potential to recycle treated wastewater at the Richmond Country Club for golf course irrigation. There is no wastewater recycling at the Richmond Plant.

B. Discharge Point and Receiving Waters

The locations of the discharge point and the receiving waters are indicated below.

Table F-2. Outfall Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary Treated Municipal Wastewater	37º 54′ 47″ N	122º 25′ 06″ W	Central San Francisco Bay

Central San Francisco Bay is located within the San Francisco Bay watershed. Central San Francisco Bay is a tidally influenced, estuarine waterbody.

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

1. **Conventional and Non-Conventional Pollutants.** Effluent limitations contained in the previous order and representative monitoring data from the term of the previous order, collected from April 2008 to June 2012, are presented below:

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

Parameter	Units	Effluent Limitations				Monitoring Data (04/08 – 06/12)	
		Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum	Average[1]	Range
West County Plant Effluent							
5-day Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	---	---	7.3	2 – 23
Total Suspended Solids (TSS)	mg/L	30	45	---	---	10	4– 32
pH	Standard Units	---	---	---	6.0 – 9.0	6.6	6.0 – 7.8
Oil and Grease	mg/L	10	---	20	---	4.9	1.8(J) – 5.0
Total Coliform Bacteria	Colonies/ 100 mL	240	---	10,000	---	26.1	< 2 – 1,600
Richmond Plant Effluent							
5-day Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	---	---	11	2 – 102
Total Suspended Solids (TSS)	mg/L	30	45	---	---	16	3.8 – 170
pH	Standard Units	---	---	---	6.0 – 9.0	7.0	5.6 – 8.0
Oil and Grease	mg/L	10	---	20	---	3.0	1.1(J) – 14
Total Coliform Bacteria	Colonies/ 100 mL	240	---	10,000	---	26.1	< 2 – 16,000
Combined Effluent							
Total Residual Chlorine	mg/L	---	---	---	0.0	0.0	0 – 2.38

Unit Abbreviations:

mg/L = milligrams per liter
s.u. = standard units
mL = milliliters

[1] Some of the values used to calculate the average were below the minimum detection level. In those cases, the minimum detection level was used to calculate the average.
[2] < indicates that levels were below the method detection limit.
[3] J indicates that levels were detectable, but not quantifiable.

2. **Toxic Pollutants.** Effluent limitations contained in the previous order for the common outfall and representative monitoring data from the term of the previous order, collected from April 2008 to June 2012, are presented below:

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

Parameter	Units	Effluent Limitations		Monitoring Data (04/08 – 06/12)	
		Monthly Average	Daily Maximum	Average[1]	Range[4],[5]
Copper[2]	µg/L	53	76	8.4	2.5 – 22
Nickel	µg/L	34	59	5.5	2.7 – 20
Selenium	µg/L	3.8	8.9	0.55	0.038(J) – 2.4
Cyanide[3]	µg/L	21	41	2.3	<0.6 – 17
Bis(2-ethylhexyl)phthalate	µg/L	55	150	1.8	<0.72 – 15.8
Dioxin-TEQ	µg/L	$1.4x10^{-8}$	$2.8x10^{-8}$	$8.5x10^{-8}$	$7.5x10^{-12}$ – $1.5x10^{-6}$
4,4-DDD	µg/L	0.00084	0.0017	<0.004	<0.003 – <0.0053
Heptachlor	µg/L	0.0020	0.0041	0.0043	<0.0030 – 0.0099(J)
Total Ammonia (as N)	mg/L	32	59	14	2.2 – 31
Acute whole effluent toxicity	% survival	[6]	[6]	89	0-100

Unit Abbreviations:

mg/L = milligrams per liter
µg/L= micrograms per liter

[1] Some of the values used to calculate the average were below the minimum detection level. In those cases, the minimum detection level was used to calculate the average.
[2] Site specific objectives were established for copper on June 13, 2006. The effluent limitations for copper presented in this table superseded the original effluent limitations of 71 µg/L (AMEL) and 100 µg/L (MDEL), as described in the previous order.
[3] Site specific objectives were established for cyanide on December 13, 2006. The effluent limitations for cyanide presented in this table superseded the original effluent limitations of 7.8 µg/L (AMEL) and 15 µg/L (MDEL), as described in the previous order.
[4] < indicates that levels were below the method detection limit.
[5] J indicates that levels were detectable, but not quantifiable.
[6] 11-sample median greater than 90. 11-sample 90th percentile greater than 70.

D. Compliance Summary

1. **Previous Order Violations.** Sixteen permit violations occurred during the previous order term as summarized below.

Table F-5. Numeric Effluent Limitation Violations

Date of Violation	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
11/5/2012	Acute Toxicity	% Survival	11 sample 90th percentile <70%	65
5/18-19/2012	Total Coliform	MPN/100 ml	--	Sample not taken
4/4/2012	BOD Influent Analysis	mg/L	--	Sample not analyzed
1/20/2012	Total Coliform Daily Maximum	MPN/100 ml	10,000	16,000
1/20/2012	Dioxin-TEQ Monthly Average	pg/L	0.014	0.031
1/20/2012	Dioxin-TEQ Daily Maximum	pg/L	0.028	0.031
11/22/2011	Total Residual Chlorine Instantaneous Maximum	mg/L	0.0	2.72
11/29/2010	Total Residual Chlorine	mg/L	0.0	0.75

	Instantaneous Maximum			
11/28/2010	Total Residual Chlorine Instantaneous Maximum	mg/L	0.0	0.63
7/31/2010	BOD_5 Monthly Average	mg/L	30	32.48
7/24/2010	BOD_5 Weekly Average	mg/L	45	59.84
7/24/2010	Total Suspended Solids Weekly Average	mg/L	45	51.86
4/8/2010	Total Residual Chlorine Instantaneous Maximum	mg/L	0.0	0.79
10/19/2009	Total Residual Chlorine Instantaneous Maximum	mg/L	0.0	2.38
10/13/2009	Total Coliform Daily Maximum	MPN/100 ml	10,000	16,000
9/17/2008	Acute Toxicity	% Survival	11 sample median <90%	0%

The Dischargers' 16 violations were for a variety of reasons; 2 for acute toxicity, 3 for BOD/TSS, 2 for samples not taken, 2 for total coliform, 5 for residual chlorine, and 2 for dioxin-TEQ. Except for the chlorine residual, these violations were sporadic and were corrected by the Dischargers very soon after the violations were discovered. The Regional Water Board assessed a total of $21,000 in mandatory minimum penalties for those violations where such penalties were required.

The acute toxicity violations occurred in 2008 and 2012. In both cases, the cause of the toxicity was not discovered and the toxicity went away upon retesting.

In July 2010, the Richmond Plant had a mechanical failure in one of its aeration basins. The plant operators did not discover the problem right away and this resulted in the basin going septic and 3 violations of BOD/TSS limits. The problem was resolve after the equipment was repaired and the beneficial bacteria population in the basin recovered.

In April and May of 2012, operators at the Richmond Plant failed to collect samples for BOD and total coliform, or collected the samples improperly. The contractor that operates the Richmond Plant changed its operational procedures and trained its Richmond Plant operators to correct the problem.

The two coliform violations occurred at the Richmond Plant in 2009 and 2012 during wet weather blending events. The City of Richmond believes both of these violations were related to high TSS concentrations that are typical at the beginning of a blending event. The Dischargers have not proposed any corrective measures to prevent future occurrences.

The Dischargers' five residual chlorine violations occurred between 2009 and 2011. They were mostly related failures in the system that feeds sodium bisulfate, a dechlorinating agent, to the combined effluent prior to discharge. The Dischargers fixed the responsible delivery system components.

2. **Cease and Desist Order No. R2-2008-0004.** The Regional Water Board issued Cease and Desist Order No. R2-2008-0004 concurrently with the previous order to address compliance problems with cyanide, selenium, dioxin-TEQ, heptachlor, and 4,4-DDD. With one

exception, the Dischargers have completed all prescribed actions in Order No. R2-2008-0004.

Table 2, task h of Order No. R2-2008-0004 requires the Dischargers to develop more aggressive actions if there are exceedances of final effluent limit before February 28, 2012. Effluent monitoring indicates that all limits for these pollutants have been met except for one instance. On January 20, 2012, there was a sample that caused two exceedances of the dioxin-TEQ limits (a daily and a monthly limit). This happened during a wet weather blending event when the TSS concentration was also high. TSS concentrations are typically high during blending events and dioxin-TEQ is a contaminant that binds well to solids, so the high dioxin-TEQ result was probably associated with the high TSS concentrations at the time. The other 10 dioxin-TEQ samples taken during the term of the permit were below effluent limits.

The Dischargers did not develop additional actions for dioxin-TEQ as required by Order No. R2-2008-0004 because the one incident was related to a wet weather event. Any proposed actions to upgrade the treatment plants to reduce dioxin-TEQ concentrations would likely be expensive and ineffective during most conditions. Instead, the City of Richmond is focusing its efforts on fixing its collection system to reduce the need for blending. This should reduce the TSS concentrations and potential for dioxin-TEQ violations.

3. **Compliance with Previous Order Provisions.** The table below presents a list of special activities the previous order required and the status of those requirements.

Table F-6. Compliance with Previous Order Provisions

Provision Number	Requirement	Status of Completion
VI.C.5.c – Utility Analysis	Utility Analysis for wet weather bypasses	Submitted with Report of Waste Discharge, October 2012.
VI.C.6 – Corrective Measures to Minimize Blending	Task 1 – Wet Weather Improvements	Completed July 2009. [1]
	Task 2 - Prepare workplan to implement measures in Feasibility Study	Completed July 2009. [1]
	Task 3 – Implement workplan	Updates provided in annual self-monitoring reports.
	Task 4 – Annual Status Report	Updates provided in annual self-monitoring reports.
	Task 5 – Completion Report	Specified time has not yet concluded; report due April 1, 2015.
VI.C.7 – 4,4-DDD, Heptachlor and Dioxin-TEQ Compliance Schedules	Task a. - Investigate quality assurance and quality control practices.	Completed.
	Task b. Evaluate previous 2 years of discharge data.	Completed by West County Wastewater District on October 31, 2008. Completed by the City of Richmond on November 6, 2008.
	Task c. through Task g. Implementation of Additional Tasks	No action required

	Task i. Compliance	All non-qualified effluent monitoring data complied with interim limits for 4,4'-DDD and heptachlor.
VI.C.8 – Action Plan for Cyanide	Task 1. Review Potential Cyanide Sources.	Completed by West County Wastewater District on February 26, 2010. Completed by the City of Richmond on November 3, 2008.
	Task 2. Implement Cyanide Control Program	Updates provided in annual pollution prevention reports.
	Task 3. Implement Additional Measures	Updates provided in annual pollution prevention reports.
	Task 4. Report on Status of Cyanide Control Program	Updates provided in annual pollution prevention reports.
VI.C.9 – Action Plan for Copper	Task 1. Review Potential Copper Sources.	Completed by West County Wastewater District on May 29, 2009. Completed by the City of Richmond on May 9, 2009.
	Task 2. Implement Copper Control Program	Updates provided in annual pollution prevention reports.
	Task 3. Implement Additional Measures	Updates provided in annual pollution prevention reports.
	Task 4. Studies to Reduce Copper Pollutant Impact Uncertainties	Completion through participation in Bay Area Clean Water Agencies effort.
	Task 5. Report on Status of Copper Control Program	Updates provided in annual pollution prevention reports.

[1] *Corrective Measures to Minimize Blending at the Richmond Municipal Sewer District Water Pollution Control Plant* (July 2009).

E. Planned Changes

The Dischargers currently plan no significant changes for either treatment plant during this permit term. To address blending and sanitary sewer overflows, the City of Richmond will construct a storage tank at the Richmond Plant and repair and replace sewer lines. Provision VI.C.5.a requires these projects as explained in Fact Sheet section VII.C.5.a.

F. Blending Summary

The previous order allowed the City of Richmond to bypass secondary treatment for the portion of the flow above 20 MGD at the Richmond Plant when effluent flows exceeded 20 MGD. With flow exceeding secondary treatment capacity, excess primary-treated flows were diverted around the biological treatment units to wet weather storage. Once storage was at capacity, excess primary-treated flows were blended with the secondary-treated wastewater. The blended wastewater from the Richmond Plant was disinfected prior to combining with the effluent from the West County Plant, where both are dechlorinated and discharged to Central San Francisco Bay through the common outfall. From January 2008 through March 2012, the Richmond Plant blended in this manner about five times per year for about 25.5 hours per event, resulting in about 11.8 million gallons per event of effluent that did not receive secondary treatment. The annual average volume of blended effluent was about 63.7 million gallons, representing approximately 0.02% of annual plant flow. The table below provides a summary of recent blending events.

Table F-7. Summary of Blending Events

Wet Weather Years	Number of Events	Duration (hours/year)	Volume of Blended Effluent (million gallons/year)
2007-2008	6	126.4	67.0
2008-2009	8	206.4	87.0
2009-2010	3	109.0	36.5
2010-2011	6	126.0	68.4
2011-2012	4	121.9	59.6
Average	**5.4**	**138.0**	**63.7**

Total suspended solids concentrations were higher during blending events than when not blending. However, blending events were rare and were typically of short duration and small volume, so the overall effects of increased pollutant loads to San Francisco Bay were small. The effects of blending on total suspended solids concentrations are summarized in the table below.

Table F-8. Effects of Blending on Total Suspended Solids Concentrations

	Range (mg/L)	**Average** (mg/L)
During blending events	5.2 – 173	35.1
Months when blending occurs, blending data included (monthly average)	13.1 – 27.4	18.7
Months when blending occurs, blending data excluded (monthly average)	11.1 – 22.5	16.0
All months (April 2008 through June 2012) (daily maximum)	3.8 – 173	15.7

The City of Richmond plans to upgrade its facilities to reduce blending as described in Section VII.C.5.a below.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

This Order's requirements are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order is issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by the USEPA and California Water Code (CWC) chapter 5.5, division 7, commencing with section 13370. It serves 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 CWC article 4, chapter 4, division 7, commencing with section 13260.

B. California Environmental Quality Act (CEQA)

Under CWC section 13389, this action to issue an NPDES permit is exempt from CEQA Chapter 3.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The *Water Quality Control Plan for the San Francisco Bay Basin* (hereinafter 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 and groundwater. It also includes implementation programs to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, the Office of Administrative Law, and USEPA. Requirements of this Order implement the Basin Plan.

The Basin Plan beneficial uses of Central San Francisco Bay are listed below. State Water Board Resolution No. 88-6 establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on Central San Francisco Bay, total dissolved solids levels exceed 3,000 mg/L and thereby meet an exception to State Water Board Resolution No. 88-63. The MUN designation therefore does not apply to the receiving water.

Table F-9. Basin Plan Beneficial Uses

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

The State Water Board's *Water Quality Control Plan for Enclosed Bays and Estuaries—Part 1, Sediment Quality* became effective on August 25, 2009. This plan supersedes other narrative sediment quality objectives and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries.

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, promulgating new toxics criteria for California and, in addition, incorporating the previously adopted NTR criteria that applied in the State. USEPA amended the CTR on February 13, 2001. These rules contain water quality criteria (WQC) for priority toxic pollutants.

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* (hereinafter State Implementation Policy [SIP]). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated through the NTR and to the water quality objectives established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria 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 (WQS) 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.

5. **Antidegradation Policy.** NPDES regulations at 40 CFR 131.12 require that state WQS include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16, which incorporates the federal antidegradation policy where the federal policy applies under federal law and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

6. **Anti-Backsliding Requirements.** CWA sections 402(o)(2) and 303(d)(4) and 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 order, with some exceptions in which limitations may be relaxed.

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

In October 2011, pursuant to CWA section 303(d), USEPA approved a revised list of impaired water bodies prepared pursuant to 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. Where it has not done so already, the Regional Water Board plans to adopt TMDLs for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources to achieve the water quality standards for the impaired water bodies.

Central San Francisco Bay is listed as an impaired waterbody. The pollutants impairing Central San Francisco Bay are chlordane, DDT, dieldrin, invasive species, dioxins and furans, mercury, PCBs, and selenium. On February 12, 2008, USEPA approved a TMDL for San Francisco Bay mercury. On March 29, 2010, USEPA approved a TMDL for San Francisco Bay PCBs. The discharge is regulated under Order No. R2-2012-0096 (NPDES Permit CA 0038849), which establishes requirements on mercury and PCBs from wastewater discharges in the region, thus implementing the mercury and PCBs TMDLs.

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 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 objectives to protect the beneficial uses of the receiving water.

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

A. Discharge Prohibitions

1. **Discharge Prohibition III.A (No discharge other than as described):** This prohibition is based on 40 CFR 122.21(a), "Duty to Apply," and CWC section 13260, which requires filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the permit application and Report of Waste Discharge, and subsequently in this Order, are prohibited.

2. **Discharge Prohibition III.B (Minimum initial dilution of 25:1):** The Order allows a dilution credit of 25:1 in the calculation of one or more water quality-based effluent limitations based on information regarding the dilution achieved by the Dischargers' outfall. Therefore, this prohibition is necessary to ensure that the assumptions used to derive the dilution credit remain substantially the same so the limitations are protective of water quality.

3. **Discharge Prohibition III.C (Bypass is prohibited, with exceptions):** This prohibition is based on 40 CFR 122.41(m) (see Federal Standard Provisions, Attachment D, section G). Bypasses are prohibited when influent flows are below 20.0 MGD (the secondary treatment capacity of the Richmond Plant). When inflows are above 20.0 MGD, the City of Richmond may bypass secondary treatment at the Richmond Plant for the portion above 20.0 MGD and blend the bypassed flows with the secondary-treated flow prior to disinfection and discharge to San Francisco Bay. As discussed below, the City of Richmond has shown that it meets the criteria (40 CFR 122.41[m][4][i][A]-[C]) required to allow blending.

   (A) Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage. In its October 2012, Utility Analysis, the City of Richmond demonstrated that bypasses remain unavoidable to prevent backups and overflow of raw sewage in basements or on city streets, which could result in severe property damage or personal injury. In very large events, the Richmond Plant has reached, or very nearly reached, its maximum hydraulic capacity. High peak flows can overwhelm certain parts of the wastewater treatment process and may cause damage or failure of the system.

   (B) There are no feasible alternatives to the bypass. In its October 2012 Utility Analysis, the City of Richmond completed a No Feasible Alternatives Analysis using the criteria identified in USEPA's draft guidance on *NPDES Permit Requirements for Peak Wet Weather Discharges from Publicly Owned Treatment Works Treatment Plant Serving Separate Sanitary Sewer Collection Systems* (December 2005). While the City of Richmond spent about $20 million repairing and replacing sewer lines over the past permit cycle, the analysis indicates that blending will still be necessary over this next permit cycle. Rather than increasing its treatment plant capacity, the City of Richmond is focusing its resources on reducing inflow and infiltration in its collection system, which in turn reduces the need to blend. The decision to take this approach was made primarily because repairing sewer lines will also reduce sanitary sewer overflows, which are a chronic problem in the City of Richmond. The City of Richmond plans to do additional pipe repair and replacement projects to reduce inflow and infiltration, and it also plans to build a wet weather (5 million gallon minimum) storage tank at the Richmond Plant. These projects will cost about $98.5 million. Provision VI.C.5.a of the Order requires specific actions for the City of Richmond to take within this coming permit cycle to reduce further the need to blend.

(C) The Dischargers provided notice at least ten days before the date of the bypass. The City of Richmond provided notice of its ongoing need to blend during wet weather with its Report of Waste Discharge and Utility Analysis. The notice was submitted more than ten days before any bypass subject to this Order.

4. **Discharge Prohibition III.D (Average dry weather flow not to exceed design capacity):** This prohibition is based on the historic and tested reliable treatment capacity of the individual treatment plants. Exceedance of the average dry weather flow capacity could result in lowering the reliability of achieving compliance with water quality requirements.

5. **Discharge Prohibition III.E (No sanitary sewer overflows):** Basin Plan Discharge Prohibition 15 (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 must achieve secondary treatment at a minimum and any more stringent limitations necessary to meet water quality standards (33 U.S.C. § 1311[b][1][B and C]). A sanitary sewer overflow that results in the discharge of raw sewage, or wastewater not meeting this Order's effluent limitations, to surface waters is therefore prohibited under the CWA and the Basin Plan.

B. Conventional and Non-Conventional Pollutant Limitations

1. Scope and Authority

CWA section 301(b) and 40 CFR 122.44 require that permits include conditions meeting technology-based requirements, at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet the minimum federal technology-based requirements based on secondary treatment standards at 40 CFR 133, which are summarized below. The 30-day average percent removal for BOD_5 and TSS, by concentration, is not to be less than 85 percent. The Basin Plan contains additional requirements for certain pollutants.

Table F-10. Secondary Treatment Requirements

Parameters	Monthly Average	Weekly Average
BOD_5 [1]	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
pH	6.0 – 9.0 standard units	

[1] At the option of the permitting authority, $CBOD_5$ effluent limitations may be substituted for BOD_5 limitations.

2. Effluent Limitations for Conventional and Non-conventional Pollutants

a. BOD_5 and TSS. The secondary treatment standards require the BOD_5 and TSS effluent limitations, including the 85 percent removal requirement. Compliance will be determined at each individual treatment plant, at Monitoring Locations EFF-002 and EFF-003, because these technology-based requirements apply at each plant.

b. Oil and Grease. The oil and grease limits are based on Basin Plan Table 4-2. Compliance will be determined at each individual treatment plant, at Monitoring Locations EFF-002 and EFF-003, because these technology-based requirements apply at each plant.

c. pH. The pH limits are based on Basin Plan Table 4-2. Compliance will be determined at each individual treatment plant, at Monitoring Locations EFF-002 and EFF-003, because these technology-based requirements apply at each plant.

d. Total Chlorine Residual. The residual chlorine effluent limitation is based on Basin Plan Table 4-2. The allowance for determining false positives using continuous devices is based on the fact that continuous instruments occasionally have anomalous spikes, and it is chemically improbable to have free chlorine present in the presence of sodium bisulfite. Compliance will be determined in combined effluent, at Monitoring Location EFF-001, because the effluent is dechlorinated only after effluent streams are combined.

e. Enterococcus Bacteria. The enterococcus effluent limitation is based on Basin Plan Table 4-2A. Compliance will be determined at each individual treatment plant, at Monitoring Locations EFF-002 and EFF-003.

f. Total Coliform Bacteria. Basin Plan Table 4-2A requires effluent limitations for total coliform for deep water discharges to inland surface waters and estuaries with the shellfish harvesting beneficial use. Compliance will be determined at each individual treatment plant, at Monitoring Locations EFF-002 and EFF-003.

C. Toxic Substances Limitations

Water quality-based effluent limitations (WQBELs) have been derived for toxic pollutants 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. The procedures for calculating individual WQBELs are based on the SIP and the Basin Plan. Most Basin Plan beneficial uses and water quality objectives were approved under State law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the Clean Water Act" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than those required by CWA water quality standards.

1. Scope and Authority

a. 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 reasonable potential to cause or contribute to an excursion of a water quality standard, including numeric and narrative objectives within a standard. As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard."

The process for determining "reasonable potential" and calculating WQBELs when necessary is intended to protect the designated beneficial uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives contained in the CTR, NTR, and other state plans and policies.

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

(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 MDELs and AMELs for all discharges other than publicly owned treatment works."

(2) SIP. SIP section 1.4 requires WQBELs to be expressed as MDELs and AMELs.

c. MDELs are used in this Order to protect against acute water quality effects. The MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

2. Beneficial Uses and Water Quality Objectives

The water quality objectives applicable to the receiving water 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 water quality objectives from more than one of these sources.

a. Basin Plan. The Basin Plan specifies numeric water quality objectives for 10 priority toxic pollutants, as well as narrative water quality objectives 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 marine and freshwater, lead, mercury, nickel, silver, zinc, and cyanide. The narrative toxicity objective states, "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, "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 contained in this Order implement these objectives, based on available information.

b. CTR. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to all inland surface waters and enclosed bays and estuaries of the San Francisco Bay Region, although Basin Plan Tables 3-3 and 3-4 include numeric objectives for certain of these priority toxic pollutants that supersede CTR criteria. Human health criteria are further identified as for "water and organisms" and for "organisms only." The CTR criteria applicable to "organisms only" apply to the receiving water because it is not a source of drinking water.

c. NTR. The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento River-San Joaquin River Delta.

d. Sediment Quality Objectives. The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1*, Sediment Quality contains a narrative WQO, "Pollutants in sediments

shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California." This WQO is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment chemistry. The policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this WQO, it is to impose the WQO as a receiving water limit.

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

The receiving water for this discharge is Central San Francisco Bay, a saltwater water body based on salinity data collected by the San Francisco Estuary Institute (SFEI) Regional Monitoring Program for Trace Substances (RMP). Historically, the RMP conducted sampling at 26 locations throughout the San Francisco Bay region. In 2002, the system was redesigned to incorporate random sampling in place of the 26 established locations. Salinity data collected from the Point Isabel (BC41) and Richardson Bay (BC30) RMP stations (March 1993 to August 2001), Red Rock (BC60) RMP station (January 1994 to August 2001), Yerba Buena Island (BC10) RMP station (March 1993 to August 2009), as well as 32 samples collected throughout the Central Bay from July 2002 to August 2010 indicate that the salinity was never less than 1 ppt and was greater than 10 ppt in 97 percent of the samples. Central San Francisco Bay, in the vicinity of the facility outfall, is therefore classified as saltwater, and the reasonable potential analysis and effluent limitations in this Order are based on saltwater water quality objectives.

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

For this receiving water, the site-specific copper translators, 0.73 (AMEL) and 0.87 (MDEL), are based on Basin Plan Table 7.2.1-2 for deep water discharges to Central San Francisco Bay. The site-specific nickel translators, 0.65 (AMEL) and 0.85 (MDEL), are based on a study conducted by the Clean Area Partnership (*North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* [2005]). For all other

metals, default translators USEPA established at 40 CFR 131.38(b)(2), Table 2, were used to determine the need for and calculating WQBELs.

3. Determining the Need for WQBELs

Assessing whether a pollutant has reasonable potential to exceed a WQO in the receiving water is the fundamental step in determining whether a WQBEL is required.

a. Reasonable Potential Methodology

For priority pollutants and other toxic pollutants, the reasonable potential analysis identifies the observed maximum effluent concentration (MEC) for each pollutant based on effluent concentration data. There are three triggers in determining reasonable potential according to SIP section 1.3.

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

(2) The second trigger (Trigger 2) 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.

(3) The third trigger (Trigger 3) 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.

b. Effluent Data

The Dischargers' priority pollutant data were analyzed, along with the nature of the discharge, to determine if the discharge has reasonable potential. The reasonable potential analysis is based on effluent monitoring data collected from April 2008 to June 2012 for most inorganic pollutants, and from September 2008 to February 2012 for most organic pollutants.

c. Ambient Background Data

The SIP states that, for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations.

On May 15, 2003, a group of San Francisco Bay Region dischargers known as the Bay Area Clean Water Agencies submitted a collaborative receiving water study entitled *San Francisco Bay Ambient Water Monitoring Interim Report* (2003). This study included monitoring results from sampling events in 2002 and 2003 for priority pollutants not monitored by the RMP. This study included the Yerba Buena Island RMP station. The

Bay Area Clean Water Agencies provided additional data through its Ambient Water Monitoring: Final CTR Sampling Update report, dated June 15, 2004.

For priority pollutants, the reasonable potential analysis was conducted and WQBELs were calculated using RMP data from 1993 through 2009 at the Yerba Buena Island RMP station (BC10) and additional data from the BACWA study.

For ammonia, the reasonable potential analysis was conducted and WQBELs were calculated using RMP data from the Red Rock station (BC60). Although data from the Point Isabel and Richardson Bay RMP stations were used in calculating limits from ammonia in the previous order, the Red Rock RMP station is the closest station to the West County Agency outfall (approximately 0.75 mile away) and is more representative of ambient background conditions.

d. Reasonable Potential Analysis (RPA)

The MECs, most stringent applicable water quality objectives, and background concentrations used in the RPA are presented in the following table, along with the RPA results (yes or no) for each pollutant. Reasonable potential was not determined for all pollutants because there are not applicable water quality objectives for all pollutants and monitoring data are unavailable for others. Based on a review of the effluent data collected during the previous order term from April 2008 through June 2012, the pollutants that exhibit reasonable potential are copper, nickel, cyanide, dioxin-TEQ, bis(2-ethylhexyl)phthalate, endrin, heptachlor, and total ammonia by Trigger 1.

Table F-11. Reasonable Potential Analysis Summary

CTR #	Priority Pollutant	Governing WQO (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Result [3]
1	Antimony	4,300	0.95	1.8	No
2	Arsenic	36	8.2	2.46	No
3	Beryllium	No Criteria	< 0.02	0.215	Ud – No Criteria
4	Cadmium	9.4	0.73	0.127	No
5a	Chromium (III)	No Criteria	4.6	NA	Ud – No Criteria
5b	Chromium (VI)	50	< 0.6	4.4	No
6	Copper	3.4	22	2.55	Yes
7	Lead	8.5	0.4	0.8	No
9	Nickel	13	20	3.7	Yes
10	Selenium (303(d) listed)	5.0	2.4	0.39	No
11	Silver	2.2	0.52	0.052	No
12	Thallium	6.3	< 0.04	0.21	No
13	Zinc	86	63	5.1	No
14	Cyanide	2.9	11	<0.4	Yes
15	Asbestos	No Criteria	No data	No data	Ud – No Criteria
16	2,3,7,8-TCDD (303(d) listed)	$1.4x10^{-8}$	$< 3.6x10^{-7}$	$8.2x10^{-9}$	No
	Dioxin TEQ (303(d) listed)	$1.4x10^{-8}$	$1.5x10^{-6}$	$7.1x10^{-8}$	Yes
17	Acrolein	780	< 1.3	<0.5	No
18	Acrylonitrile	0.66	< 0.66	0.03	No
19	Benzene	71	< 0.18	<0.05	No

CTR #	Priority Pollutant	Governing WQO (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Result [3]
20	Bromoform	360	3.7	<0.5	No
21	Carbon Tetrachloride	4.4	< 0.16	0.06	No
22	Chlorobenzene	21,000	< 0.18	<0.5	No
23	Chlorodibromomethane	34	18	<0.05	No
24	Chloroethane	No Criteria	< 0.37	<0.5	Ud – No Criteria
25	2-Chloroethylvinyl ether	No Criteria	< 0.28	<0.5	Ud – No Criteria
26	Chloroform	No Criteria	23	<0.5	Ud – No Criteria
27	Dichlorobromomethane	46	22	<0.05	No
28	1,1-Dichloroethane	No Criteria	< 0.19	<0.05	Ud – No Criteria
29	1,2-Dichloroethane	99	< 0.18	0.04	No
30	1,1-Dichloroethylene	3.2	< 0.21	<0.5	No
31	1,2-Dichloropropane	39	< 0.18	<0.05	No
32	1,3-Dichloropropylene	1,700	< 0.16	<0.5	No
33	Ethylbenzene	29,000	< 0.25	<0.5	No
34	Methyl Bromide	4,000	< 0.17	<0.5	No
35	Methyl Chloride	No Criteria	< 0.22	<0.5	Ud – No Criteria
36	Methylene Chloride	1,600	0.50	22	No
37	1,1,2,2-Tetrachloroethane	11	< 0.10	<0.05	No
38	Tetrachloroethylene	8.9	0.60	<0.05	No
39	Toluene	200,000	0.50	<0.3	No
40	1,2-Trans-Dichloroethylene	140,000	< 0.22	<0.5	No
41	1,1,1-Trichloroethane	No Criteria	< 0.19	<0.5	Ud – No Criteria
42	1,1,2-Trichloroethane	42	< 0.16	<0.05	No
43	Trichloroethylene	81	0.30	<0.5	No
44	Vinyl Chloride	525	< 0.25	<0.5	No
45	2-Chlorophenol	400	< 0.20	<1.2	No
46	2,4-Dichlorophenol	790	< 0.20	<1.3	No
47	2,4-Dimethylphenol	2,300	1.6	<1.3	No
48	2-Methyl- 4,6-Dinitrophenol	765	< 0.20	<1.2	No
49	2,4-Dinitrophenol	14,000	< 0.60	<0.7	No
50	2-Nitrophenol	No Criteria	< 0.10	<1.3	Ud – No Criteria
51	4-Nitrophenol	No Criteria	< 0.70	<1.6	Ud – No Criteria
52	3-Methyl 4-Chlorophenol	No Criteria	< 0.20	<1.1	Ud – No Criteria
53	Pentachlorophenol	7.9	< 0.10	<1	No
54	Phenol	4,600,000	< 0.30	<1.3	No
55	2,4,6-Trichlorophenol	6.5	0.18	<1.3	No
56	Acenaphthene	2,700	< 0.03	0.0019	No
57	Acenaphthylene	No Criteria	< 0.02	0.0013	Ud – No Criteria
58	Anthracene	110,000	< 0.02	0.00059	No
59	Benzidine	0.00054	< 1.3	<0.0015	No
60	Benzo(a)Anthracene	0.049	< 0.02	0.0053	No
61	Benzo(a)Pyrene	0.049	< 0.02	0.0033	No
62	Benzo(b)Fluoranthene	0.049	< 0.02	0.0046	No
63	Benzo(ghi)Perylene	No Criteria	< 0.02	0.0045	Ud – No Criteria
64	Benzo(k)Fluoranthene	0.049	< 0.03	0.0018	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	< 0.10	<0.3	Ud – No Criteria
66	Bis(2-Chloroethyl)Ether	1.4	< 0.10	<0.00015	No
67	Bis(2-Chloroisopropyl)Ether	170,000	< 0.10	NA	No

CTR #	Priority Pollutant	Governing WQO (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Result [3]
68	Bis(2-Ethylhexyl)Phthalate	5.9	15.8	<0.5	Yes
69	4-Bromophenyl Phenyl Ether	No Criteria	< 0.10	<0.23	Ud – No Criteria
70	Butylbenzyl Phthalate	5,200	0.89	0.5	No
71	2-Chloronaphthalene	4,300	< 0.10	<0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	< 0.10	<0.3	Ud – No Criteria
73	Chrysene	0.049	< 0.02	0.0024	No
74	Dibenzo(a,h)Anthracene	0.049	< 0.02	0.00064	No
75	1,2-Dichlorobenzene	17,000	< 0.27	<0.8	No
76	1,3-Dichlorobenzene	2,600	0.18	<0.8	No
77	1,4-Dichlorobenzene	2,600	< 0.18	<0.8	No
78	3,3 Dichlorobenzidine	0.077	< 0.66	<0.001	No
79	Diethyl Phthalate	120,000	0.21	<0.27	No
80	Dimethyl Phthalate	2,900,000	0.97	<0.29	No
81	Di-n-Butyl Phthalate	12,000	0.31	<0.38	No
82	2,4-Dinitrotoluene	9.1	< 0.11	<0.27	No
83	2,6-Dinitrotoluene	No Criteria	< 0.10	<0.29	Ud – No Criteria
84	Di-n-Octyl Phthalate	No Criteria	< 0.10	<0.38	Ud – No Criteria
85	1,2-Diphenylhydrazine	0.54	< 0.10	0.0037	No
86	Fluoranthene	370	0.02	0.011	No
87	Fluorene	14,000	< 0.02	0.0021	No
88	Hexachlorobenzene	0.00077	< 0.10	0.00002	No
89	Hexachlorobutadiene	50	< 0.20	<0.3	No
90	Hexachlorocyclopentadiene	17,000	< 0.10	<0.31	No
91	Hexachloroethane	8.9	< 0.20	<0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	< 0.02	0.004	No
93	Isophorone	600	< 0.10	<0.3	No
94	Naphthalene	No Criteria	< 0.02	0.0023	Ud – No Criteria
95	Nitrobenzene	1,900	< 0.10	<0.25	No
96	N-Nitrosodimethylamine	8.1	< 0.10	<0.3	No
97	N-Nitrosodi-n-Propylamine	1.4	< 0.10	<0.001	No
98	N-Nitrosodiphenylamine	16	< 0.10	<0.001	No
99	Phenanthrene	No Criteria	< 0.02	0.0061	Ud – No Criteria
100	Pyrene	11,000	< 0.02	0.0051	No
101	1,2,4-Trichlorobenzene	No Criteria	< 0.10	<0.3	Ud – No Criteria
102	Aldrin	0.00014	< 0.0016	NA	No
103	Alpha-BHC	0.013	< 0.002	0.00050	No
104	Beta-BHC	0.046	< 0.002	0.00041	No
105	Gamma-BHC	0.063	< 0.002	0.00070	No
106	Delta-BHC	No Criteria	< 0.002	0.000042	Ud – No Criteria
107	Chlordane (303(d) listed)	0.00059	< 0.005	0.00018	No
108	4,4'-DDT (303(d) listed)	0.00059	< 0.003	0.000066	No
109	4,4'-DDE (linked to DDT)	0.00059	< 0.003	0.00069	No
110	4,4'-DDD	0.00084	< 0.003	0.00031	No
111	Dieldrin (303d listed)	0.00014	< 0.0021	0.00026	No
112	Alpha-Endosulfan	0.0087	0.0048	0.000031	No
113	beta-Endosulfan	0.0087	< 0.0021	0.000069	No
114	Endosulfan Sulfate	240	< 0.003	0.000082	No
115	Endrin	0.0023	0.0030	0.000036	Yes

CTR #	Priority Pollutant	Governing WQO (µg/L)	MEC or Minimum DL [1][2] (µg/L)	Maximum Background or Minimum DL [1][2] (µg/L)	RPA Result [3]
116	Endrin Aldehyde	0.81	< 0.002	NA	No
117	Heptachlor	0.00021	0.0099	0.000019	Yes
118	Heptachlor Epoxide	0.00011	< 0.0026	0.000094	No
126	Toxaphene	0.0002	< 0.20	NA	No
	Total Ammonia	1.26	31	0.15	Yes

[1] The 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).
[2] The MEC or maximum background concentration is "Not Available" when there are no monitoring data for the constituent.
[3] RPA Results = Yes, if MEC > WQC, B > WQC and MEC is detected, or Trigger 3;
= No, if MEC and B are < WQC or all effluent data are undetected;
= Undetermined (Ud), if no criteria have been promulgated or there are insufficient data

e. Constituents with limited data. In some cases, reasonable potential cannot be determined because effluent data are limited or ambient background concentrations are unavailable. The Dischargers 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 numeric effluent limitations are necessary.

f. Pollutants with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Dischargers will be required to investigate the sources of the increases. Remedial measures are required if the increases pose a threat to receiving water quality.

g. RPA for Sediment Quality Objective. Pollutants in some receiving water sediments may be present in quantities that alone or in combination are toxic to benthic communities. Efforts are underway to identify stressors causing such conditions. However, to date there is no evidence directly linking compromised sediment conditions to the discharges subject to this Order; therefore the Regional Water Board cannot draw a conclusion about reasonable potential for the discharges to cause or contribute to exceedances of the sediment quality objectives. Nevertheless, the Dischargers continue to participate in the RMP, which monitors San Francisco Bay sediment and seeks to identify stressors responsible for degraded sediment quality. Thus far, the monitoring has provided only limited information about potential stressors and sediment transport. The Regional Water Board is exploring options for obtaining additional information that may inform future RPAs.

4. WQBEL Calculations

a. Pollutants with Reasonable Potential. WQBELs were developed for the toxic and priority pollutants determined to have reasonable potential to cause or contribute to exceedances of the water quality objectives. The WQBELs were calculated based on water quality objectives and the procedures specified in SIP section 1.4. The water quality objectives used for each pollutant with reasonable potential are discussed below.

b. Dilution Credits. The SIP allows dilution credits for completely-mixed discharges and, under certain circumstances, for incompletely-mixed discharges. The Dischargers submitted a dilution study technical memorandum, *Near-Field Dilution Modeling – WCA Discharges to San Francisco Bay*, dated September 17, 2012. The report presents findings regarding the initial dilution of the discharge at the outfall. The near-field dilution was estimated using the Cornell Mixing Zone Expert System (CORMIX) following USEPA guidance. The study used the peak wet weather design flow (41 MGD), which resulted in a dilution factor of 117:1 (D=116) for acute conditions, and the dry weather design flow (28.5 MGD), which resulted in a dilution factor of 164:1 (D=163) for chronic conditions.

i. **Bioaccumulative Pollutants.** For certain bioaccumulative pollutants, dilution credit is significantly restricted or denied. Specifically, these pollutants include dioxin compounds, which appears on the CWA section 303(d) list for Central San Francisco Bay because, based on available data on concentrations of these pollutants in aquatic organisms, sediment, and the water column, they impair beneficial uses. The following factors suggest insufficient assimilative capacity in San Francisco Bay for these pollutants.

Tissue samples taken from fish in San Francisco Bay show the presence of these pollutants at concentrations greater than screening levels (*Contaminant Concentrations in Fish from San Francisco Bay*, May 1997). The results of a 1994 San Francisco Bay pilot study, presented in *Contaminated Levels in Fish Tissue from San Francisco Bay* (Regional Water Board, 1994), also showed elevated levels of chemical contaminants in fish tissues. The Office of Environmental Health and Hazard Assessment completed a preliminary review of the data in the 1994 report and in December 1994 issued an interim consumption advisory covering certain fish species in San Francisco Bay due to the levels of some of these pollutants. The Office of Environmental Health and Hazard Assessment updated this advisory by issuing its May 2011 report Health Advisory and Safe Eating Guidelines for San Francisco Bay Fish and Shellfish, which still suggests insufficient assimilative capacity in San Francisco Bay for 303(d)-listed pollutants. Therefore, dilution credits are denied for bioaccumulative pollutants on the 303(d) list for which data are lacking on sources and significant uncertainty about how different sources of these pollutants contribute to bioaccumulation.

ii. **Non-Bioaccumulative Pollutants.** For non-bioaccumulative pollutants (except ammonia), a conservative dilution allowance of 10:1 (D = 9) has been assigned. The 10:1 dilution allowance is consistent with the previous order and is based, in part, on Basin Plan Prohibition 1 (Table 4-1), which prohibits discharges with less than 10:1 dilution. SIP section 1.4.2 allows for limiting the dilution credit. The dilution credit is limited for the following reasons:

(1) San Francisco Bay is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. SIP section 1.4.3 allows background conditions to be determined on a discharge-by-discharge or water body-by-water body basis. A water body-by-water body basis approach is taken here due to inherent uncertainties in characterizing ambient

background conditions in a complex estuarine system on a discharge-by-discharge basis. The Yerba Buena Island RMP monitoring station, relative to other RMP stations, fits SIP guidance criteria for establishing background conditions. The SIP requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. Water quality data from the Yerba Buena Island monitoring station is representative of the water that will mix with the discharge.

(2) Because of the complex hydrology of San Francisco Bay, there are uncertainties in accurately determining an appropriate mixing zone. The models used to predict dilution do not consider the three dimensional nature of San Francisco Bay currents resulting from the interaction of tidal flushes and seasonal fresh water outflows. Being heavier and colder than fresh water, ocean salt water enters San Francisco Bay on a twice-daily tidal cycle, generally beneath the warmer fresh water that flows seaward. When these waters mix and interact, complex circulation patterns occur due to the varying densities of the fresh and ocean waters. The complex patterns occur throughout San Francisco Bay, but are most prevalent in the San Pablo, Carquinez Straight, and Suisun Bay areas. The locations of this mixing and interaction change, depending on the strength of each tide. Additionally, sediment loads from the Central Valley change on a long-term basis, affecting the depth of different parts of San Francisco Bay, resulting in alteration of flow patterns, mixing, and dilution at the outfall.

iii. **Ammonia.** For ammonia, a conservative estimate of actual initial dilution was used to calculate the effluent limitations. This is justified because ammonia, a non-persistent pollutant, quickly disperses and degrades to a non-toxic state, and cumulative toxicity effects are unlikely. Based on the Dischargers' report, *Near-Field Dilution Modeling – WCA Discharges to San Francisco Bay*, September 17, 2012, the dilution credit of 117:1 (D=116) is appropriate for acute conditions and 164:1 (D=163) is appropriate for chronic conditions.

c. Development of WQBELs

(1) Copper

(a) Water Quality Objectives. The Basin Plan contains chronic and acute marine water quality objectives for copper of 6.0 micrograms per liter (µg/L) and 9.4 µg/L, expressed as dissolved metal (site-specific objectives for San Francisco Bay). These water quality objectives were converted to total recoverable metal using the site-specific translators of 0.73 (chronic) and 0.87 (acute). The resulting water quality criteria are 8.2 µg/L (chronic) and 11 µg/L (acute).

(b) RPA Results. This Order establishes effluent limitations for copper because the MEC (22 µg/L) exceeds the most stringent criterion (8.2 µg/L), demonstrating reasonable potential by Trigger 1. Reasonable potential is also established by Trigger 3, consistent with Basin Plan section 7.2, which requires that individual NPDES permits for municipal wastewater treatment facilities include copper WQBELs.

(c) WQBELs. WQBELs for copper, calculated according to SIP procedures with an effluent data coefficient of variation (CV) of 0.55 and a dilution credit of D = 9 (dilution ratio = 10:1), are 44 µg/L (AMEL) and 85 µg/L (MDEL).

(d) Anti-backsliding. The previous order limits were 53 µg/L (AMEL) and 76 µg/L (MDEL). To avoid backsliding, the MDEL from the previous order is retained. Anti-backsliding requirements are satisfied because the new limits are at least as stringent as those in the previous order.

(2) Nickel

(a) Water Quality Objectives. The Basin Plan contains chronic and acute marine water quality objectives for nickel of 8.2 µg/L and 74 µg/L, expressed as dissolved metal. These water quality objectives were converted to total recoverable metal using the Central San Francisco Bay site-specific translators of 0.65 (chronic) and 0.85 (acute). The resulting WQOs are 13 µg/L (chronic) and 87 µg/L (acute).

(b) RPA Results. This Order establishes effluent limitations for nickel because the MEC (20 µg/L) exceeds the most stringent criterion (13 µg/L), demonstrating reasonable potential by Trigger 1.

(c) WQBELs. WQBELs for nickel, calculated according to SIP procedures with an effluent data CV of 0.42 and a dilution credit of D = 9, are 80 µg/L (AMEL) and 140 µg/L (MDEL). However, the limits in the previous order (AMEL of 34 µg/L and MDEL of 59 µg/L) are more stringent and are retained to avoid backsliding.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order retains the more stringent limits from the previous order.

(3) Cyanide

(a) Water Quality Objectives. The Basin Plan contains chronic and acute marine water quality objectives for cyanide of 2.9 µg/L and 9.4 µg/L.

(b) RPA Results. This Order establishes effluent limitations for cyanide because the MEC (11 µg/L) exceeds the most stringent WQO (2.9 µg/L), demonstrating reasonable potential by Trigger 1. Reasonable potential is also established by Trigger 3, consistent with Basin Plan section 4.7.2.2, which requires that individual NPDES permits for municipal wastewater treatment facilities include cyanide WQBELs.

(c) WQBELs. WQBELs for cyanide, calculated according to SIP procedures with an effluent data CV of 0.89 and a dilution credit of D = 9, are 19 µg/L (AMEL) and 46 µg/L (MDEL).

(d) Anti-backsliding. The previous order limits were 21 µg/L (AMEL) and 41 µg/L (MDEL). To avoid backsliding, the MDEL from the previous order is retained. Anti-backsliding requirements are satisfied because the new limits are at least as stringent as those in the previous order.

(4) Dioxin-TEQ

(a) WQO. 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 Central San Francisco Bay as impaired by dioxin and furan compounds in the current 303(d) listing of receiving waters, where water quality objectives are not being met after imposition of applicable technology-based requirements.

The CTR establishes a numeric WQO for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 1.4×10^{-8} µg/L for the protection of human health, when aquatic organisms are consumed. When the CTR was promulgated, USEPA stated its support of the regulation of other dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs) in NPDES permits. For California waters, USEPA stated specifically, "if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBELs for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme" (65 Fed. Reg. 31682, 31695 [2000]).

This Order uses a TEQ scheme based on a set of toxicity equivalency factors (TEFs) the World Health Organization (WHO) developed in 1998, and a set of bioaccumulation equivalency factors (BEFs) USEPA developed for the Great Lakes region (40 CFR 132, Appendix F) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-TCDD. The CTR criterion is used as a criterion for dioxin-TEQ because dioxin-TEQ represents a toxicity weighted concentration equivalent to 2,3,7,8-TCDD, thus translating the narrative bioaccumulation objective into a numeric criterion appropriate for the RPA.

To determine if the discharge of dioxin or dioxin-like compounds has reasonable potential, TEFs and BEFs were used to express the measured concentrations of 16 dioxin congeners in effluent and background samples as 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). Although the 1998 WHO scheme includes TEFs for dioxin-like PCBs, they are not included in this Order's TEQ scheme. The CTR has established a specific water quality standard for PCBs, and dioxin-like PCBs are included in the analysis of total PCBs.

(b) RPA Results. This Order establishes effluent limitations for dioxin-TEQ because the MEC (1.5×10^{-6} µg/L) exceeds the translated water quality criterion (1.4×10^{-8} µg/L), demonstrating reasonable potential by Trigger 1. Reasonable potential is also established by Trigger 3, consistent with the Basin Plan's bioaccumulation WQO.

(c) WQBELs. WQBELs for dioxin TEQ, calculated according to SIP procedures using a default CV of 0.60 and no dilution credit, are 1.4×10^{-8} µg/L (AMEL) and 2.8×10^{-8} µg/L (MDEL).

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because the effluent limits in this Order are the same as those in the previous order.

(5) Bis(2-Ethylhexyl)Phthalate

(a) WQO. The CTR contains a human health WQO for bis(2-ethylhexyl)phthalate of 5.9 µg/L.

(b) RPA Results. This Order establishes effluent limitations for bis(2-ethylhexyl)phthalate because the MEC (15.8 µg/L) exceeds the WQO (5.9 µg/L), demonstrating reasonable potential by Trigger 1.

(c) WQBELs. WQBELs for bis(2-ethylhexyl)phthalate, calculated according to SIP procedures using an effluent data CV of 1.2 and a dilution credit of D = 9, are 55 µg/L (AMEL) and 150 µg/L (MDEL). These limits are the same as those in the previous order.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because the effluent limits in this Order are the same as those in the previous order.

(6) Endrin

(a) Water Quality Objectives. The CTR contains chronic and acute marine water quality objectives for endrin of 0.0023 µg/L and 0.037 µg/L.

(b) RPA Results. This Order establishes effluent limitations for endrin because the MEC (0.0030 µg/L) exceeds the most stringent WQO (0.0023 µg/L), demonstrating reasonable potential by Trigger 1.

(c) WQBELs. WQBELs for endrin, calculated according to SIP procedures using a default CV of 0.60 and a dilution credit of D = 9, are 0.019 µg/L (AMEL) and 0.037 µg/L (MDEL).

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because the previous order did not include endrin limits.

(7) Heptachlor

(a) Water Quality Objective. The CTR contains a human health water quality objective for heptachlor of 0.00021 µg/L.

(b) RPA Results. This Order establishes effluent limitations for heptachlor because the MEC (0.0099 µg/L) exceeds the WQO (0.00021 µg/L), demonstrating reasonable potential by Trigger 1.

(c) WQBELs. WQBELs for heptachlor, calculated according to SIP procedures using a default CV of 0.60 and a dilution credit of D = 9, are 0.0019 µg/L (AMEL) and 0.0039 µg/L (MDEL).

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because the new effluent limits are more stringent than those in the previous order.

(8) Total Ammonia

(a) Water Quality Objectives. The Basin Plan contains water quality objectives for un-ionized ammonia (as nitrogen) of 0.025 mg/L as an annual median and 0.16 mg/L as a maximum. These water quality objectives were translated from un-ionized ammonia concentrations 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, pH, salinity, and temperature data from the Red Rock RMP Station (BC60) were used. The following equations were used to determine the fraction of total ammonia that would exist in the toxic un ionized form in the marine receiving water, where the various measurements were taken from 1994-2001 (USEPA, Ambient Water Quality Criteria for Ammonia (Saltwater)–1989, EPA Publication 440/5-88-004):

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

Where:

$pK = 9.245 + 0.116(I) + 0.0324\,(298 - T) + \frac{0.0415\,(P)}{(T)}$

I = Molal ionic strength of saltwater = $\frac{19.9273\,(S)}{(1{,}000 - 1.005109\,(S))}$

S = Salinity (parts per thousand)

T = Temperature in degrees Kelvin

P = Pressure (one atmosphere)

For salinity < 1 ppt: fraction of NH3 = $\frac{1}{1+10^{(pK-pH)}}$

Where:

$$pK = 0.09018 + 2729.92 / T$$

T = Temperature in degrees Kelvin

The 90th percentile and median un-ionized ammonia fractions were used to express the acute and chronic un-ionized ammonia water quality objectives as total ammonia concentrations for both high and low saline waters. The lowest resulting acute and chronic water quality objectives were used in this RPA. This approach is consistent with USEPA guidance on translating dissolved metal water quality objectives to total recoverable metal water quality objectives (USEPA, *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion*, EPA Publication 823-B-96-007, 1996).

The equivalent total ammonia acute and chronic Water Quality Criteria are 5.34 mg/L and 1.26 mg/L, respectively.

(b) RPA Results. Basin Plan section 4.5.5.2 indicates that WQBELs for toxic pollutants are to be calculated according to the SIP. Basin Plan section 3.3.20 refers to ammonia as a toxic pollutant. Therefore, the SIP methodology was used as guidance to perform the RPA and to calculate effluent limitations for ammonia. This Order establishes total ammonia effluent limitations because the MEC (31 mg/L) exceeds the translated WQO (1.26 mg/L), demonstrating reasonable potential by Trigger 1.

(c) WQBELs. WQBELs for total ammonia, calculated according to SIP procedures using a CV of 0.59 and a dilution credit of D = 163, are 210 mg/L (AMEL) and 550 mg/L (MDEL). WQBELs were calculated using factors that represent both acute and chronic conditions, and the more stringent chronic results described above were selected. For the acute condition, the WQO was 5.34 mg/L and the dilution factor was D=116. For the chronic condition, the WQO was 1.26 and the dilution factor was D=163. Statistical adjustments were made to the WQBEL calculations because of the following:

- The Basin Plan's chronic un-ionized ammonia WQO is based on an annual median instead of the typical 4-day average;

- The SIP assumes a 4-day average concentration and monthly sampling frequency of 4 days per month to calculate effluent limitations based on chronic criteria, whereas a 365-day average and a monitoring frequency of 30 days per month, reflecting the actual basis of the water quality objective and actual sampling frequency, were used here.

These statistical adjustments are supported by USEPA's Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia, published on December 22, 1999, in the Federal Register.

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

The limits in the previous order (AMEL of 32 µg/L and MDEL of 59 µg/L) are more stringent than the newly-calculated limits and are retained to avoid backsliding.

(d) Anti-backsliding. Anti-backsliding requirements are satisfied because this Order retains the limits from the previous order.

(e) Growing Regional Concern with Nutrients. As described above and in section IV.C.4.b, Dilution Credit, a translated Basin Plan un-ionized ammonia objective and a conservative estimate of actual initial dilution were used to calculate the total ammonia effluent limitations. In the future, the Regional Water Board may grant less dilution credit or change the ammonia limitations in other ways to address growing concerns about nutrients in the receiving water. Currently, a region-wide effort is underway to study and evaluate potential effects. This effort, which is referred to as the San Francisco Bay Nutrient Strategy, includes developing a nutrient assessment framework that can be used to calculate water quality-based effluent limits for nutrients. The Regional Water Board, through its Executive Officer, has also required wastewater dischargers, including these Dischargers, to monitor nutrients, including ammonia, in their influent and effluent. This information will be used to compare nutrient loads from wastewater discharges to loads from other sources, to support modeling and evaluation of load reduction scenarios, and to determine the need for additional wastewater treatment to address nutrients.

e. Effluent Limit Calculations

The following table shows the WQBEL calculations.

Table F-12. WQBEL Calculations

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Dioxin-TEQ	Bis(2-Ethylhexyl) Phthalate	Endrin	Heptachlor	Total Ammonia (acute)	Total Ammonia (chronic)
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L N**	**mg/L N**
Basis and Criteria type	Basin Plan SSO - Central San Francisco Bay	Basin Plan SSO - Central San Francisco Bay	BP SSOs	Basin Plan Narrative	CTR HH	CTR Aquatic Life	CTR HH	Basin Plan Aquatic Life	Basin Plan Aquatic Life
Criteria -Acute	-----	-----	-----	-----	-----	0.037	0.053	5.34	-----
Criteria -Chronic	-----	-----	-----	-----	-----	0.0023	0.0036	-----	1.26
SSO Criteria -Acute	3.9	74	9.4	-----	-----	-----	-----	-----	-----
SSO Criteria -Chronic	2.5	8.2	2.9	-----	-----	-----	-----	-----	-----
Water Effects ratio (WER)	2.4	1	1	1	1	1	1	1	1
Lowest WQO	3.4	13	2.9	1.4E-08	5.9	0.0023	0.00021	5.34	1.26
Site Specific Translator - MDEL	0.87	0.85	-----	-----	-----	-----	-----	-----	-----
Site Specific Translator - AMEL	0.73	0.65	-----	-----	-----	-----	-----	-----	-----
Dilution Factor (D) (if applicable)	9	9	9	0	9	9	9	116	163
No. of samples per month	4	4	4	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	N	N	Y	Y	Y	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y	Y	Y	Y	N	N
Applicable Acute WQO	11	87	9.4	-----	-----	0.037	0.053	5.34	
Applicable Chronic WQO	8.2	13	2.9	-----	-----	0.0023	0.0036		1.26
HH criteria	-----	4600	220000	1.4E-08	5.9	0.81	0.00021	-----	-----
Background (Maximum Conc for Aquatic Life ca	2.55	3.7	0.4			0.000036	0.000019	0.15	0.08
Background (Average Conc for Human Health c	-----	2.17	0.4	7.1E-08	0.5	0.000036	0.000019	-----	-----
Is the pollutant on the 303d list (Y/N)?	N	N	N	Y	N	N	N	N	N
ECA acute	85	837	90			0.37	0.53	607	
ECA chronic	59	93	25			0.023	0.036		194
ECA HH		45980	2199996	1.4E-08	55	8.1	0.0019		
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	Y	Y	N	N
Avg of effluent data points	8.4	5.5	2.3	8.5E-08	1.8			14	14
Std Dev of effluent data points	4.6	2.3	2.0	3.4E-07	2.1			8.3	8.3
CV calculated	0.55	0.42	0.89	4.1	1.2	N/A	N/A	0.59	0.59
CV (Selected) - Final	0.55	0.42	0.89	0.6	1.2	0.60	0.60	0.59	0.59
ECA acute mult99	0.35	0.43	0.23			0.32	0.32	0.33	
ECA chronic mult99	0.55	0.63	0.41			0.53	0.53		0.9
LTA acute	29	357	21			0	0.17	199	
LTA chronic	33	58	10			0	0.019		180
minimum of LTAs	29	58	10			0	0.019	199	180
AMEL mult95	1.50	1.38	1.84	3.62	2.15	1.55	1.55	1.5	1.2
MDEL mult99	2.89	2.35	4.41	12.23	5.84	3.11	3.11	3.1	3.1
AMEL (aq life)	44	80	19			0	0.029	306	214
MDEL(aq life)	85	137	46			0	0.059	607	551
MDEL/AMEL Multiplier	1.92	1.71	2	3.38	2.71	2.01	2.01	2.0	2.6
AMEL (human hlth)		45980	2199996	1.4E-08	54.50	8.10	0.0019		
MDEL (human hlth)		78429	5278499	4.7E-08	147.87	16.25	0.0039		
minimum of AMEL for Aq. life vs HH	44	80	19	1.4E-08	55	0.019	0.0019	306	214
minimum of MDEL for Aq. Life vs HH	85	137	46	4.7E-08	148	0.037	0.0039	607	551
Current limit in permit (30-day average)	53	34	21.0	1.4E-08	55	-----	0.0020	32	32
Current limit in permit (daily)	76	59	41	2.8E-08	150	-----	0.0041	59	59
Final limit - AMEL	44	34	19.0	1.4E-08	55	0.019	0.0019	32	32
Final limit - MDEL	85	59	46	2.8E-08	148	0.037	0.0039	59	59
Max Effl Conc (MEC)	22	20	11	1.5E-06	15.8	0.0030	0.0099	31	31

6. Whole Effluent Acute Toxicity

This Order includes effluent limitations for whole effluent acute toxicity based on Basin Plan Table 4-3. All bioassays are to be performed according to the USEPA approved method in 40 CFR 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 5th Edition. The approved test species currently specified in the Monitoring and Reporting Program is fathead minnow (*Pimephales promelas*).

As allowed by Basin Plan section 4.5.5.3.1, the Order does not consider toxicity exceeding effluent levels to be a violation if the toxicity is caused by ammonia. The ammonia limits in this Order are based on receiving water conditions are sufficient to prevent acute toxicity in the receiving water.

7. Whole Effluent Chronic Toxicity

a. Toxicity Objective. Basin Plan section 3.3.18 states, "There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community."

b. Reasonable Potential Analysis. The previous order included chronic toxicity triggers of a single-sample maximum of 20 TUc and a 3-sample median of 10 TUc, which would trigger accelerated chronic toxicity testing if exceeded. The Dischargers conducted quarterly chronic toxicity tests during the previous order term using red abalone (*Haliotis rufescens*). The maximum single-sample chronic toxicity result from June 2008 through April 2012 was 14.8 TUc. Such toxicity values indicate low reasonable potential for chronic toxicity so there is only a narrative chronic toxicity limit in this Order. A numeric limit is unwarranted.

c. Permit Requirements. Chronic toxicity requirements are based on the narrative Basin Plan toxicity objective.

d. Screening Phase Study and Monitoring Requirement. The Discharger is required to conduct a chronic toxicity screening phase study, as described in MRP Appendix E-1, prior to permit reissuance or after significant changes in the treatment system. This is necessary to ensure use of the most sensitive species in case there are changes in effluent quality or influent sources of new pollutants over time.

This Order requires use of *Americamysis bahia* based on the Discharger's September 2012 chronic toxicity screening study. While the study indicated that *Mytilus galloprovincialis* was the most sensitive, *M. galloprovincialis* is one of the most sensitive test species to ammonia—as much as an order of magnitude or more sensitive than the *A. bahia*, the test species found to be the second most sensitive.

The purpose of whole effluent toxicity testing is to determine if the discharge is toxic due to (1) pollutants for which there is no monitoring protocol, or (2) synergistic effects from

a combination of pollutants. Because the discharge has ammonia and the Order already specifies a pollutant specific limit for ammonia, the hypersensitivity of *M. galloprovincialis* to ammonia makes it an inappropriate species for routine monitoring. This is because of the potential for interference with toxicity test results. In other words, tests with *M. galloprovincialis* will more often than not show a response that is caused by ammonia in the test, but which is at a concentration safe for discharge. However, this response to a safe concentration of ammonia would mask toxicity from other potential pollutants that may be present.

In the screening, the Discharger attempted to minimize the interference caused by ammonia by manual pH adjustment. Although this method reduced the interference, it was only partially effective due to the high buffering capacity of seawater. The second most sensitive species in the screening analysis was *A. bahia*, which was only slightly less sensitive than *M. galloprovincialis*. To minimize ammonia interference, *A. bahia* is to be used for chronic toxicity tests. The accelerated monitoring triggers are consistent with the previous order and based on Basin Plan Table 4-5.

8. Antidegradation

NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, which incorporates federal policy where federal policy applies. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both State and federal antidegradation policies.

The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16 because there will be no lowering of water quality beyond the current level authorized in the previous order, which is the baseline by which to measure whether degradation will occur. This Order continues the status quo with respect to the level of discharge authorized in the previous order. It does not provide for an increase in the permitted design flow, allow for a reduced level of treatment, or increase effluent limitations. The limitations in this Order hold the Dischargers to existing performance. Thus, there will be no change in water quality beyond the level authorized in the last permit and no water quality degradation. Further analysis in this permit is unnecessary, and findings authorizing degradation are unnecessary.

The previous order contained effluent limitations for selenium and 4,4-DDD; however, the RPA shows that the discharge no longer demonstrates reasonable potential for these pollutants to cause or contribute to an exceedance of water quality objectives. This Order, therefore, does not retain selenium and 4,4-DDD effluent limitations. Elimination of these limitations is consistent with State Water Board Order No. WQ 2001-16.

This Order also does not retain the mercury effluent limits from the previous order because mercury discharges to San Francisco Bay are now regulated by Regional Water Board Order No. R2-2012-0096, which is a watershed permit that implements the San Francisco Bay Mercury TMDL. Order No. R2-2012-0096 complied with antidegradation requirements.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations are based on the narrative and numeric objectives contained in Basin Plan Chapter 3 and federal and State water quality standards.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

The MRP is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms and sets out requirements for reporting routine monitoring data in accordance with NPDES regulations, the CWC, and State 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 completion of RPAs.

The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

Influent monitoring for BOD_5 and TSS is required to determine compliance with this Order's 85% removal requirement. Flow monitoring is also required to evaluate compliance with Prohibition III.D (average dry weather flow). Influent cyanide monitoring is required in accordance with Basin Plan section 4.7.2.2.

B. Effluent Monitoring

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

- A new Monitoring Location (EFF-001-B) is established to monitor effluent discharges during blending events at the Richmond Plant to evaluate water quality impacts during blending events. Monitoring at EFF-001-B is required consistent with Attachment G, section III.A.3.b.6.

- Monitoring for mercury has been removed because mercury is now covered under Order No. R2-2012-0096.

- Monitoring for enterococcus bacteria is established at EFF-002 and EFF-003 to determine compliance with new effluent limitations.

- The frequency of effluent monitoring for selenium and 4,4-DDD is reduced from the previous order because the discharge no longer demonstrates reasonable potential for selenium and 4,4-DDD. The Effluent Characterization Study and Report (Provision VI.C.2) requires screening for this pollutant.

- The frequency of effluent monitoring for endrin has been increased to monthly because the discharge demonstrates reasonable potential for endrin.

Monitoring for the remaining priority pollutants is not specifically identified in the MRP, but is still required by the Effluent Characterization Study and Report (Provision VI.C.2).

C. Whole Effluent Toxicity Testing Requirements

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

2. **Chronic Toxicity.** Chronic toxicity testing is required four times per year to ensure that the discharge does not exceed acceptable levels of chronic toxicity. To ensure the tests are being done with the most sensitive species, the Dischargers are to re-screen in accordance with MRP Appendix E-1 after any significant change in the nature of the effluent or prior to submittal of the application for permit reissuance.

D. Receiving Water Monitoring

The Dischargers are required to continue participating in the RMP, which involves collection of data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. Instead of collecting site-specific receiving water data, the RMP can more effectively collect reliable receiving data for all San Francisco Bay dischargers by pooling resources. The Dischargers' participation and support of the RMP is the basis for not including other receiving water monitoring requirements in this permit.

E. Pretreatment and Biosolids Monitoring Requirements

The pretreatment monitoring requirements for influent, effluent, and biosolids are retained from the previous order and are required to assess compliance with the Discharger's USEPA-approved pretreatment program.

This Order specifies the sampling type for pretreatment monitoring. Specifically, it requires grab samples for VOCs, BNA, cyanide, and hexavalent chromium. Discrete grabs are necessary for these parameters to minimize potential losses during automatic compositing. VOCs are volatile, and cyanide and BNAs are also somewhat volatile. Hexavalent chromium is chemically unstable.

Biosolids monitoring requirements are unchanged from the previous order and are identified in the federal Standard Provisions and in the Regional Standard Provisions.

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. NPDES regulations at 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. NPDES regulations at 40 CFR 123.25(a)(12) allow the state to omit or modify conditions to impose more stringent requirements. The Regional Standard Provisions in Attachment G supplement the Federal Standard Provisions. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR

122.41(j)(5) and (k)(2) because the CWC enforcement authority is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

B. MRP Requirements (Provision VI.B)

The Dischargers are required to monitor the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the MRP and Attachments D and G. This provision requires compliance with these documents and is authorized by 40 CFR 122.41(h) and (j), and CWC sections 13267 and 13383.

The principal purposes of a monitoring program are to:

- document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
- facilitate self-policing by the Dischargers 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 table below summarizes routine monitoring requirements. This table is for informational purposes only. The actual requirements are specified in the MRP and other provisions of this Order.

Table F-13. Monitoring Requirements Summary

Parameter	Influent INF-002 and INF-003	Effluent EFF-001	Effluent EFF-002 and EFF-003	Effluent EFF-001B	Effluent EFF-002B	Biosolids BIO-002 and BIO-003	Receiving Water
Flow	Continuous/D	Continuous/D	Continuous/D		Continuous/D		--
Volume of Partially Treated Wastewater	--	--	--		1/Blending event		--
Duration of Blending Event					1/Blending event		
BOD	3/Week	--	3/Week		1/Year[1]		--
TSS	3/Week	--	1/Day		1/Day		--
Oil and Grease	--	--	2/Month				--
pH	--	--	3/Week		1/Year[1]		Support RMP
Chlorine Residual	--	Continuous	--				
Acute Toxicity	--	1/Month	--	--			Support RMP
Chronic Toxicity	--	1/Quarter	--	--			Support RMP
Total Coliform	--	--	5/Week	1/Day			
Enterococcus	--	--	5/Month	1/Year[1]			
Copper	--	1/Month	--	1/Year[1]			Support RMP
Cyanide	2/Year	1/Month	--	1/Year[1]		2/Year	Support RMP
Nickel	--	1/Month	--	1/Year[1]			Support RMP
Total Ammonia	--	1/Month	--	1/Year[1]			Support RMP
Bis(2-ethylhexyl)phthalate	--	2/Year	--	1/Year[1]			Support RMP
Endrin	--	2/Year	--	1/Year[1]			Support RMP
Heptachlor	--	2/Year	--	1/Year[1]			Support RMP
Dioxin-TEQ	--	2/Year	--	1/Year[1]			Support RMP
Volatile Organic Compounds (VOC's)						2/Year	
Base/neutrals and acids extractable organic compounds (BNA)						2/Year	
Hexavalent Chromium						2/Year	
Metals[2]						2/Year	
Mercury						2/Year	
All other priority pollutants	--	1/Year	--	--			Support RMP

[1] If a TSS sample collected on the same day exceeds 45 mg/L, the frequency is to be once per day.
[2] Arsenic, cadmium, copper, lead, nickel, silver, zinc, and selenium.

C. Special Provisions (Provision VI.C)

1. Reopener Provisions

These provisions are based on 40 CFR 122.63 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new relevant information that may be established in the future and other circumstances as allowed by law.

2. Effluent Characterization Study and Report

This Order does not include effluent limitations for priority pollutants that do not demonstrate reasonable potential, but this provision requires the Dischargers to continue monitoring for these pollutants as described in the Regional Standard Provisions and as specified in the MRP. This requirement is authorized pursuant to CWC section 13267, and is necessary to inform the next permit reissuance and to ensure that the Dischargers takes proper and timely steps in response to any changes in unanticipated effluent quality during the term of this Order.

3. Best Management Practices and Pollutant Minimization Program

This provision for a Pollutant Minimization Program is based on Basin Plan Chapter 4 (section 4.13.2) and SIP Chapter 2 (section 2.4.5).

4. Special Provisions for POTWs

a. Pretreatment Program Requirements. This provision requires the Dischargers to implement and enforce its approved pretreatment program in accordance with federal pretreatment regulations (40 CFR 403).

b. Biosolids Management Practices. This provision is based on Basin Plan Chapter 4, section 4.17, and 40 CFR Parts 257 and 503, and is retained from the previous order.

c. Sanitary Sewer Overflows and Sewer System Management Plan. This provision is to explain the Order's requirements as they relate to the Discharger's collection system and to promote consistency with the State Water Board-adopted General Collection System WDRs (General Order, Order No. 2006-0003-DWQ).

The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans and report all sanitary sewer overflows, among other requirements and prohibitions. Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions apply as specified in Provisions, section VI.C.4.c. Sanitary Sewer Overflow and Sewer System Management Plan. West County Wastewater District and the City of Richmond must comply with both the General Order

and this Order. The Dischargers and public agencies that are discharging wastewater into the facility were required to enroll under the General Order by December 1, 2006.

The State Water Board amended the General Order on February 20, 2008, in Order No. WQ2008-0002-EXEC, to strengthen the notification and reporting requirements for sanitary sewer overflows. The Regional Standard Provisions contains the same notification and reporting requirements for spills from wastewater treatment facilities.

5. Other Special Provisions

a. Specific Tasks to Reduce Blending. This provision is based on 40 CFR 122.41(m) and USEPA's draft *Peak Wet Weather Policy* (December 2005). USEPA's draft policy sets forth a set of requirements and specific analyses for the Dischargers to complete in order to determine whether its peak wet weather flow blending discharge should be considered a bypass under 40 CFR 122.41(m) and whether any feasible alternatives to blending are available to the Dischargers. These analyses are intended to address the criteria designating bypass status at 40 CFR 122.41(m)(4)(i)(A)-(C). The Order approves bypasses conditioned upon diligent completion of the feasible measures identified by the City of Richmond's September 2012 No Feasible Alternatives Analysis and by the City of Richmond's 2011 Sewer Collection System Master Plan.

Tasks 1, 2, 5, 6, 8, and 9 require annual workplans and completion reports to repair or replace at least two miles of leaking sewer lines each year. These projects will reduce infiltration. The City of Richmond estimates that each year's projects will reduce infiltration to the collection system by about 500,000 gallons per day during wet weather.

Task 3 requires development of a workplan for the Third Street stormwater abatement project. The goal of the project will be to reduce inflow of bay water and stormwater into the collection system by constructing tide gates on the storm sewer system at problem locations. Currently, when the tide is high during wet weather, stormwater mixed with bay water will overflow into the sanitary sewer. The City of Richmond has recently completed similar projects that it estimates has reduced inflow by 3 to 5 million gallons per day during wet weather events.

Task 4 requires completion of the Third Street Stormwater Abatement Project. It will reduce blending by about 3 to5 million gallons per day when blending.

Task 7 requires completion of a storage tanks construction project at the Richmond Plant. It will allow the City of Richmond to store at least 5 million gallons of wastewater during wet weather to be treated later when flows have receded. The City of Richmond estimates that this will eliminate the need for blending when storms are smaller than a 5-year-design storm.

Task 10 requires the City of Richmond to submit a No Feasible Alternatives Analysis if it wants to continue blending during the next permit cycle. This analysis will provide the necessary information for the Regional Water Board to determine whether to allow blending during the next permit cycle.

Many of these projects were developed in response to the City of Richmond's consent decree with San Francisco Baykeeper. The consent decree settles a lawsuit San Francisco Baykeeper filed against the City of Richmond for sanitary sewer overflows. While the consent decree is focused on preventing sanitary sewer overflows, the required actions will also reduce blending because both issues are related to a leaky sewer collection system.

b. Copper Action Plan. This provision is based on Basin Plan section 7.2.1.2. It is necessary to ensure that use of copper site-specific objectives is consistent with antidegradation policies. Data the San Francisco Estuary Institute compiled for 2009-2011 indicate no degradation of San Francisco Bay water quality with respect to copper (http://www.sfei.org/content/copper-site-specific-objective-3-year-rolling-averages).

c. Cyanide Action Plan. This provision is based on Basin Plan section 4.7.2.2. It is necessary to ensure that use of cyanide site-specific objectives is consistent with antidegradation policies. The threshold for considering influent cyanide concentrations to indicate a possible "significant cyanide discharge," 70µg/L, is based on an influent concentration about 1.5 times the maximum cyanide concentration found in the influent at either treatment plant during the term of the previous order. Because the Dischargers have not observed influent cyanide concentrations greater than 46 µg/L, an influent concentrations 1.5 times this historic level could indicate a significant new cyanide source.

VIII. PUBLIC PARTICIPATION

The Regional Water Board considered the issuance of WDRs that will serve as an NPDES permit for the facility. As a step in the WDRs adoption process, Regional Water Board staff developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided them with an opportunity to submit written comments and recommendations. Notification was provided through the Marin Independent Journal.

B. Written Comments

Staff determinations are tentative. Interested persons were invited to submit written comments concerning these tentative WDRs. Comments were to be submitted either in person or by mail to the Executive Office at the Regional Water Board at 1515 Clay Street, Suite 1400, Oakland, CA 94612, Attention: Vince Christian.

To receive full consideration and a written response, written comments were to be received at the Regional Water Board offices by 5:00 p.m. on [Date].

C. Public Hearing

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

Date: [Date]
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: Vince Christian, (510) 622-2336, email VChristian@waterboards.ca.gov

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

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

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge related documents, tentative effluent limitations, and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling 510-622-2300.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Vince Christian at 510-622-2336 or e-mail at VChristian@waterboards.ca.gov.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT G

REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)

For

NPDES WASTEWATER DISCHARGE PERMITS

March 2010

Contents

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS (SUPPLEMENT TO ATTACHMENT D)

FOR

NPDES WASTEWATER DISCHARGE PERMITS

APPLICABILITY

This document applies to dischargers covered by a National Pollutant Discharge Elimination System (NPDES) permit. This document does not apply to Municipal Separate Storm Sewer System (MS4) NPDES permits.

The purpose of this document is to supplement the requirements of Attachment D, Standard Provisions. The requirements in this supplemental document are designed to ensure permit compliance through preventative planning, monitoring, recordkeeping, and reporting. In addition, this document requires proper characterization of issues as they arise, and timely and full responses to problems encountered. To provide clarity on which sections of Attachment D this document supplements, this document is arranged in the same format as Attachment D.

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

B. Need to Halt or Reduce Activity Not a Defense – Not Supplemented

C. Duty to Mitigate – This supplements I.C. of Standard Provisions (Attachment D)

1. **Contingency Plan** - The Dischargers shall maintain a Contingency Plan as originally required by Regional Water Board Resolution 74-10 and as prudent in accordance with current municipal facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Dischargers may combine the Contingency Plan and Spill Prevention Plan into one document. Discharge in violation of the permit where the Dischargers have failed to develop and implement a Contingency Plan as described below will be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code Section 13387. The Contingency Plan shall, at a minimum, contain the provisions of a. through g. below.

a. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.

b. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operations of sewerage facilities.

c. Provisions of emergency standby power.

d. Protection against vandalism.

e. Expeditious action to repair failures of, or damage to, equipment and sewer lines.

f. Report of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges.

g. Programs for maintenance, replacement, and surveillance of physical condition of equipment, facilities, and sewer lines.

2. Spill Prevention Plan - The Dischargers shall maintain a Spill Prevention Plan to prevent accidental discharges and minimize the effects of such events. The Spill Prevention Plan shall:

a. Identify the possible sources of accidental discharge, untreated or partially treated waste bypass, and polluted drainage;

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

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

This Regional Water Board, after review of the Contingency and Spill Prevention Plans or their updated revisions, may establish conditions it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of the permit upon notice to the Dischargers.

D. Proper Operation & Maintenance – This supplements I.D of Standard Provisions (Attachment D)

1. Operation and Maintenance (O&M) Manual - The Dischargers shall maintain an O&M Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the O&M Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The O&M Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.

2. Wastewater Facilities Status Report - The Dischargers shall regularly review, revise, or update, as necessary, its Wastewater Facilities Status Report. This report shall document how

the Dischargers operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Dischargers' service responsibilities.

3. **Proper Supervision and Operation of Publicly Owned Treatment Works (POTWs) -** POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

I. Other – This section is an addition to Standard Provisions (Attachment D)

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

2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater, except in cases where excluding the public is infeasible, such as private property. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.

3. If the Dischargers submit a timely and complete Report of Waste Discharge for permit reissuance, this permit continues in force and effect until a new permit is issued or the Regional Water Board rescinds the permit.

J. Stormwater – This section is an addition to Standard Provisions (Attachment D)

These provisions apply to facilities that do not direct all stormwater flows from the facility to the wastewater treatment plant headworks.

1. Stormwater Pollution Prevention Plan (SWPP Plan)

The SWPP Plan shall be designed in accordance with good engineering practices and shall address the following objectives:

a. To identify pollutant sources that may affect the quality of stormwater discharges; and

b. To identify, assign, and implement control measures and management practices to reduce pollutants in stormwater discharges.

The SWPP Plan may be combined with the existing Spill Prevention Plan as required in accordance with Section C.2. The SWPP Plan shall be retained on-site and made available upon request of a representative of the Regional Water Board.

2. Source Identification

The SWPP Plan shall provide a description of potential sources that may be expected to add significant quantities of pollutants to stormwater discharges, or may result in non-stormwater discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:

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

b. A site map showing the following:

1) Stormwater conveyance, drainage, and discharge structures;

2) An outline of the stormwater drainage areas for each stormwater discharge point;

3) Paved areas and buildings;

4) Areas of actual or potential pollutant contact with stormwater or release to stormwater, including but not limited to outdoor storage and process areas; material loading, unloading, and access areas; and waste treatment, storage, and disposal areas;

5) Location of existing stormwater structural control measures (i.e., berms, coverings, etc.);

6) Surface water locations, including springs and wetlands; and

7) Vehicle service areas.

c. A narrative description of the following:

1) Wastewater treatment process activity areas;

2) Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with stormwater discharges;

3) Material storage, loading, unloading, and access areas;

4) Existing structural and non-structural control measures (if any) to reduce pollutants in stormwater discharges; and

5) Methods of on-site storage and disposal of significant materials.

d. A list of pollutants that have a reasonable potential to be present in stormwater discharges in significant quantities.

3. Stormwater Management Controls

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

a. Stormwater pollution prevention personnel

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

b. Good housekeeping

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

c. Spill prevention and response

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

d. Source control

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

e. Stormwater management practices

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

f. Sediment and erosion control

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

g. Employee training

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

h. Inspections

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

i. Records

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

4. Annual Verification of SWPP Plan

An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan are accurate and up-to-date. The results of this review shall be reported in the Annual Report to the Regional Water Board described in Section V.C.f.

K. Biosolids Management – This section is an addition to Standard Provisions (Attachment D)

Biosolids must meet the following requirements prior to land application. The Dischargers must either demonstrate compliance or, if it sends the biosolids to another party for further treatment or distribution, must give the recipient the information necessary to ensure compliance.

1. Exceptional quality biosolids meet the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8). Such biosolids do not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).

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

3. Biosolids used for lawn or home gardens must meet exceptional quality biosolids limits.

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

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

A. Sampling and Analyses – This section is a supplement to III.A and III.B of Standard Provisions (Attachment D)

1. Use of Certified Laboratories

Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code Section 13176.

2. Use of Appropriate Minimum Levels

Table C lists the suggested analytical methods for the 126 priority pollutants and other toxic pollutants that should be used, unless a particular method or minimum level (ML) is required in the MRP.

For priority pollutant monitoring, when there is more than one ML value for a given substance, the Dischargers may select any one of the analytical methods cited in Table C for compliance determination, or any other method described in 40 CFR part 136 or approved by USEPA (such as the 1600 series) if authorized by the Regional Water Board. However, the ML must be below the effluent limitation and water quality objective. If no ML value is below the effluent limitation and water quality objective, then the method must achieve an ML no greater than the lowest ML value indicated in Table C. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

3. Frequency of Monitoring

The minimum schedule of sampling analysis is specified in the MRP portion of the permit.

a. Timing of Sample Collection

1) The Dischargers shall collect samples of influent on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated by the MRP.

2) The Dischargers shall collect samples of effluent on days coincident with influent sampling unless otherwise stipulated by the MRP or the Executive Officer. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other permit requirements.

3) The Dischargers shall collect grab samples of effluent during periods of day-time maximum peak effluent flows (or peak flows through secondary treatment units for facilities that recycle effluent flows).

4) Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay test the MRP requires. During the course of the test, on at least one day, the Dischargers shall collect and retain samples of the discharge. In the event a bioassay test does not comply with permit limits, the Dischargers shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limits.

   i. The Dischargers shall perform bioassay tests on final effluent samples; when chlorine is used for disinfection, bioassay tests shall be performed on effluent after chlorination-dechlorination; and

   ii. The Dischargers shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet the percent survival specified in the permit.

b. Conditions Triggering Accelerated Monitoring

1) If the results from two consecutive samples of a constituent monitored in a 30-day period exceed the monthly average limit for any parameter (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the Dischargers shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter is in compliance with the monthly average limit.

2) If any maximum daily limit is exceeded, the Dischargers shall increase its sampling frequency to daily within 24 hours after the results are received that indicate the exceedance of the maximum daily limit until two samples collected on consecutive days show compliance with the maximum daily limit.

3) If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), the Discharger shall initiate a new test as soon as practical, and the Dischargers shall investigate the cause of the mortalities and report its findings in the next self monitoring report (SMR).

4) The Dischargers shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Dischargers shall collect grab samples at least every 30 minutes until compliance with the limit is achieved, unless the Dischargers monitor chlorine residual continuously. In such cases, the Dischargers shall continue to conduct continuous monitoring as required by its permit.

5) When a bypass occurs (except one subject to provision III.A.3.b.6 below), the Dischargers shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the duration of

the bypass (including acute toxicity using static renewals), except chronic toxicity, unless otherwise stipulated by the MRP.

6) Unless otherwise stipulated by the MRP, when a bypass approved pursuant to Attachment D, Standard Provisions, Sections I.G.2 or I.G.4, occurs, the Dischargers shall monitor flows and, using appropriate procedures as specified in the MRP, collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Dischargers shall analyze for total suspended solids (TSS) using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limits using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Dischargers shall also analyze the retained samples for that discharge for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Dischargers shall analyze the retained samples for one approved bypass discharge event for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

c. Stormwater Monitoring

The requirements of this section only apply to facilities that are not covered by an NPDES permit for stormwater discharges and where not all site storm drainage from process areas (i.e., areas of the treatment facility where chemicals or wastewater could come in contact with stormwater) is directed to the headworks. For stormwater not directed to the headworks during the wet season (October 1 to April 30), the Dischargers shall:

1) Conduct visual observations of the stormwater discharge locations during daylight hours at least once per month during a storm event that produces significant stormwater discharge to observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.

2) Measure (or estimate) the total volume of stormwater discharge, collect grab samples of stormwater discharge from at least two storm events that produce significant stormwater discharge, and analyze the samples for oil and grease, pH, TSS, and specific conductance.

The grab samples shall be taken during the first 30 minutes of the discharge. If collection of the grab samples during the first 30 minutes is impracticable, grab samples may be taken during the first hour of the discharge, and the Dischargers shall explain in the Annual Report why the grab sample(s) could not be taken in the first 30 minutes.

3) Testing for the presence of non-stormwater discharges shall be conducted no less than twice during the dry season (May 1 to September 30) at all stormwater discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; or analysis and validation of accurate piping schematics. Records shall be maintained describing the method used, date of testing, locations observed, and test results.

4) Samples shall be collected from all locations where stormwater is discharged. Samples shall represent the quality and quantity of stormwater discharged from the facility. If a facility discharges stormwater at multiple locations, the Dischargers may sample a reduced number of locations if it establishes and documents through the monitoring program that stormwater discharges from different locations are substantially identical.

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

d. Receiving Water Monitoring

The requirements of this section only apply when the MRP requires receiving water sampling.

1) Receiving water samples shall be collected on days coincident with effluent sampling for conventional pollutants.

2) Receiving water samples shall be collected at each station on each sampling day during the period within one hour following low slack water. Where sampling during lower slack water is impractical, sampling shall be performed during higher slack water. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated in the MRP.

3) Samples shall be collected within one foot of the surface of the receiving water, unless otherwise stipulated in the MRP.

B. Biosolids Monitoring – This section supplements III.B of Standard Provisions (Attachment D)

When biosolids are sent to a landfill, sent to a surface disposal site, or applied to land as a soil amendment, they must be monitored as follows:

1. Biosolids Monitoring Frequency

Biosolids disposal must be monitored at the following frequency:

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

(Metric tons are on a dry weight basis)

2. Biosolids Pollutants to Monitor

Biosolids shall be monitored for the following constituents:

Land Application: arsenic, cadmium, copper, mercury, molybdenum, nickel, lead, selenium, and zinc

Municipal Landfill: Paint filter test (pursuant to 40 CFR 258)

Biosolids-only Landfill or Surface Disposal Site (if no liner and leachate system): arsenic, chromium, and nickel

C. Standard Observations – This section is an addition to III of Standard Provisions (Attachment D)

1. Receiving Water Observations

The requirements of this section only apply when the MRP requires standard observations of the receiving water. Standard observations shall include the following:

a. *Floating and suspended materials* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.

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

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

d. *Beneficial water use*: presence of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities in the vicinity of each sampling station.

e. *Hydrographic condition*: time and height of corrected high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time of sample collection).

f. *Weather conditions*:

1) Air temperature; and

2) Total precipitation during the five days prior to observation.

2. Wastewater Effluent Observations

The requirements of this section only apply when the MRP requires wastewater effluent standard observations. Standard observations shall include the following:

a. *Floating and suspended material of wastewater origin* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence.

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

3. Beach and Shoreline Observations

The requirements of this section only apply when the MRP requires beach and shoreline standard observations. Standard observations shall include the following:

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

b. *Beneficial use*: estimate number of people participating in recreational water contact, non-water contact, or fishing activities.

4. Land Retention or Disposal Area Observations

The requirements of this section only apply to facilities with on-site surface impoundments or disposal areas that are in use. This section applies to both liquid and solid wastes, whether confined or unconfined. The Dischargers shall conduct the following for each impoundment:

a. Determine the amount of freeboard at the lowest point of dikes confining liquid wastes.

b. Report evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (e.g., gallons per minute [gpm]).

c. Regarding odor, describe presence or absence, characterization, source, distance of travel, and wind direction.

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

5. Periphery of Waste Treatment and/or Disposal Facilities Observations

The requirements of this section only apply when the MRP specifies periphery standard observations. Standard observations shall include the following:

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

b. *Weather conditions*: wind direction and estimated velocity.

IV. STANDARD PROVISIONS – RECORDS

A. Records to be Maintained – This supplements IV.A of Standard Provisions (Attachment D)

The Dischargers shall maintain records in a manner and at a location (e.g., wastewater treatment plant or Dischargers offices) such that the records are accessible to Regional Water Board staff. The minimum period of retention specified in Section IV, Records, of the Federal Standard Provisions shall be extended during the course of any unresolved litigation regarding the subject discharge, or when requested by the Regional Water Board or Regional Administrator of USEPA, Region IX.

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

B. Records of monitoring information shall include – This supplements IV.B of Standard Provision (Attachment D)

1. Analytical Information

Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.

2. Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), the additional records shall include the following, unless otherwise stipulated by the MRP:

a. Total volume for each day; and

b. Maximum, minimum, and average daily flows for each calendar month.

3. Wastewater Treatment Process Solids

a. For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:

1) Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and

2) Final disposition of such solids (e.g., landfill, other subsequent treatment unit).

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

1) Total volume or mass of dewatered biosolids for each calendar month;

2) Solids content of the dewatered biosolids; and

3) Final disposition of dewatered biosolids (disposal location and disposal method).

4. Disinfection Process

For the disinfection process, these additional records shall be maintained documenting process operation and performance:

a. For bacteriological analyses:

1) Wastewater flow rate at the time of sample collection; and

2) Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in this Order).

b. For the chlorination process, when chlorine is used for disinfection, at least daily average values for the following:

1) Chlorine residual of treated wastewater as it enters the contact basin (mg/L);

2) Chlorine dosage (kg/day); and

3) Dechlorination chemical dosage (kg/day).

5. Treatment Process Bypasses

A chronological log of all treatment process bypasses, including wet weather blending, shall include the following:

a. Identification of the treatment process bypassed;

b. Dates and times of bypass beginning and end;

c. Total bypass duration;

d. Estimated total bypass volume; and

e. Description of, or reference to other reports describing, the bypass event, the cause, the corrective actions taken (except for wet weather blending that is in compliance with permit conditions), and any additional monitoring conducted.

6. Treatment Facility Overflows

This section applies to records for overflows at the treatment facility. This includes the headworks and all units and appurtenances downstream. The Dischargers shall retain a chronological log of overflows at the treatment facility and records supporting the information provided in section V.E.2.

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

C. Monitoring Reports – This section supplements V.C of Standard Provisions (Attachment D)

1. Self Monitoring Reports

For each reporting period established in the MRP, the Dischargers shall submit an SMR to the Regional Water Board in accordance with the requirements listed in this document and at the frequency the MRP specifies. The purpose of the SMR is to document treatment performance, effluent quality, and compliance with the waste discharge requirements of this Order.

a. Transmittal letter

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

1) Identification of all violations of effluent limits or other waste discharge requirements found during the reporting period;

2) Details regarding violations: parameters, magnitude, test results, frequency, and dates;

3) Causes of violations;

4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedule of action implementation (if previous reports have been submitted that address corrective actions, reference to the earlier reports is satisfactory);

5) Data invalidation (Data should not be submitted in an SMR if it does not meet quality assurance/quality control standards. However, if the Dischargers wish to invalidate any measurement after it was submitted in an SMR, a letter shall identify the measurement suspected to be invalid and state the Dischargers' intent to submit, within 60 days, a formal request to invalidate the measurement. This request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports 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.);

6) If the Dischargers blend, the letter shall describe the duration of blending events and certify whether blended effluent was in compliance with the conditions for blending; and

7) Signature (The transmittal letter shall be signed according to Section V.B of this Order, Attachment D – Standard Provisions.).

b. Compliance evaluation summary

Each report shall include a compliance evaluation summary. This summary shall include each parameter for which the permit specifies effluent limits, the number of

samples taken during the monitoring period, and the number of samples that exceed applicable effluent limits.

c. Results of analyses and observations

1) Tabulations of all required analyses and observations, including parameter, date, time, sample station, type of sample, test result, method detection limit, method minimum level, and method reporting level, if applicable, signed by the laboratory director or other responsible official.

2) When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the Dischargers shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Dischargers shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

ii. 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.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Dischargers conduct a Pollutant Minimization Program, the Dischargers shall not be deemed out of compliance.

3) Dioxin-TEQ Reporting: The Dischargers shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the quantifiable limit (reporting level), the method detection limit, and the measured concentration. The Dischargers shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Dischargers shall set congener concentrations below the minimum levels (ML) to zero. The Dischargers shall calculate and report dioxin-TEQs using the following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

$$\text{Dioxin-TEQ} = \Sigma (C_x \times TEF_x \times BEF_x)$$

where: C_x = measured or estimated concentration of congener *x*
TEF_x = toxicity equivalency factor for congener x
BEFx = bioaccumulation equivalency factor for congener *x*

Table A

Minimum Levels, Toxicity Equivalency Factors,
and Bioaccumulation Equivalency Factors

Dioxin or Furan Congener	Minimum Level (pg/L)	1998 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
2,3,7,8-TCDD	10	1.0	1.0
1,2,3,7,8-PeCDD	50	1.0	0.9
1,2,3,4,7,8-HxCDD	50	0.1	0.3
1,2,3,6,7,8-HxCDD	50	0.1	0.1
1,2,3,7,8,9-HxCDD	50	0.1	0.1
1,2,3,4,6,7,8-HpCDD	50	0.01	0.05
OCDD	100	0.0001	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.05	0.2
2,3,4,7,8-PeCDF	50	0.5	1.6
1,2,3,4,7,8-HxCDF	50	0.1	0.08
1,2,3,6,7,8-HxCDF	50	0.1	0.2
1,2,3,7,8,9-HxCDF	50	0.1	0.6
2,3,4,6,7,8-HxCDF	50	0.1	0.7
1,2,3,4,6,7,8-HpCDF	50	0.01	0.01
1,2,3,4,7,8,9-HpCDF	50	0.01	0.4
OCDF	100	0.0001	0.02

d. Data reporting for results not yet available

The Dischargers shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses require additional time to complete analytical processes and report results. For cases where required monitoring parameters require additional time to complete analytical processes and reports, and results are not available in time to be included in the SMR for the subject monitoring period, the Dischargers shall describe such circumstances in the SMR and include the data for these parameters and relevant discussions of any observed exceedances in the next SMR due after the results are available.

e. Flow data

The Dischargers shall provide flow data tabulation pursuant to Section IV.B.2.

f. Annual self monitoring report requirements

By the date specified in the MRP, the Dischargers shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

1) Annual compliance summary table of treatment plant performance, including documentation of any blending events;

2) Comprehensive discussion of treatment plant performance and compliance with the permit (This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Dischargers' wastewater collection, treatment, or disposal practices.);

3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater;

4) List of approved analyses, including the following:

   (i) List of analyses for which the Dischargers are certified;

   (ii) List of analyses performed for the Dischargers by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and

   (iii) List of "waived" analyses, as approved;

5) Plan view drawing or map showing the Dischargers' facility, flow routing, and sampling and observation station locations;

6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Dischargers do not route all stormwater to the headworks of its wastewater treatment plant); and

7) Results of facility report reviews (The Dischargers shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Dischargers shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Dischargers shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Dischargers shall submit SMRs to:

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

h. Reporting data in electronic format

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

1) *Reporting Method*: The Dischargers shall submit SMRs electronically via a process approved by the Executive Officer (see, for example, the letter dated December 17, 1999, "Official Implementation of Electronic Reporting System [ERS]" and the progress report letter dated December 17, 2000).

2) *Monthly or Quarterly Reporting Requirements*: For each reporting period (monthly or quarterly as specified in the MRP), the Dischargers shall submit an electronic SMR to the Regional Water Board in accordance with the provisions of Section V.C.1.a-e, except for requirements under Section V.C.1.c(1) where ERS does not have fields for dischargers to input certain information (e.g., sample time). However, until USEPA approves the electronic signature or other signature technologies, Dischargers that use ERS shall submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, and a violation report (a receipt of the electronic transmittal shall be retained by the Dischargers). This electronic SMR submittal suffices for the signed tabulations specified under Section V.C.1.c(1).

3) *Annual Reporting Requirements*: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting the portion of the annual report required under Section V.C.1.f(1) and (3).

D. Compliance Schedules – Not supplemented

E. Twenty-Four Hour Reporting – This section supplements V.E of Standard Provision (Attachment D)

1. Spill of Oil or Other Hazardous Material Reports

a. Within 24 hours of becoming aware of a spill of oil or other hazardous material that is not contained onsite and completely cleaned up, the Dischargers shall report by telephone to the Regional Water Board at (510) 622-2369.

b. The Dischargers shall also report such spills to the State Office of Emergency Services [telephone (800) 852-7550] only when the spills are in accordance with applicable reporting quantities for hazardous materials.

c. The Dischargers shall submit a written report to the Regional Water Board within five working days following telephone notification unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:

1) Date and time of spill, and duration if known;

2) Location of spill (street address or description of location);

3) Nature of material spilled;

4) Quantity of material involved;

5) Receiving water body affected, if any;

6) Cause of spill;

7) Estimated size of affected area;

8) Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);

9) Corrective actions taken to contain, minimize, or clean up the spill;

10) Future corrective actions planned to be taken to prevent recurrence, and schedule of implementation; and

11) Persons or agencies notified.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants[1]

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and are consistent with and supercede requirements imposed on the Dischargers by the Executive Officer by letter of May 1, 2008, issued pursuant to California Water Code Section 13383.

a. Two (2)-Hour Notification

For any unauthorized discharges that result in a discharge to a drainage channel or a surface water, the Dischargers shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services (telephone 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. The notification to the Regional Water Board shall be via the Regional Water Board's online reporting system at www.wbers.net, and shall include the following:

1) Incident description and cause;

2) Location of threatened or involved waterway(s) or storm drains;

3) Date and time the unauthorized discharge started;

4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;

[1] California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary treated, and so on); and

6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification

Within 24 hours, the Dischargers shall certify to the Regional Water Board, at www.wbers.net, that the State Office of Emergency Services and the local health officers or directors of environmental health with jurisdiction over the affected water bodies have been notified of the unauthorized discharge.

c. 5-Day Written Report

Within five business days, the Dischargers shall submit a written report, via the Regional Water Board's online reporting system at www.wbers.net, that includes, in addition to the information required above, the following:

1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;

2) Efforts implemented to minimize public exposure to the unauthorized discharge;

3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;

4) Corrective measures taken to minimize the impact of the unauthorized discharge;

5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;

6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and

7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol

To clarify the multiple levels of notification, certification, and reporting, the current communication requirements for unauthorized discharges from municipal wastewater treatment plants are summarized in Table B that follows.

Table B

Summary of Communication Requirements for Unauthorized Discharges[1] from Municipal Wastewater Treatment Plants

Dischargers are required to:	Agency Receiving Information	Time frame	Method for Contact
1. Notify	California Emergency Management Agency (Cal EMA)	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Telephone – (800) 852-7550 (obtain a control number from Cal EMA)
	Local health department	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Depends on local health department
	Regional Water Board	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Electronic[2] www.wbers.net
2. Certify	Regional Water Board	As soon as possible, but not later than **24 hours** after becoming aware of the unauthorized discharge.	Electronic[3] www.wbers.net
3. Report	Regional Water Board	Within **5 business days** of becoming aware of the unauthorized discharge.	Electronic[4] www.wbers.net

[1] California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

[2] In the event that the Discharger is unable to provide online notification within 2 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the notification information into the Regional Water Board's online system in electronic format.

[3] In most instances, the 2-hour notification will also satisfy 24-hour certification requirements. This is because the notification form includes fields for documenting that OES and the local health department have been contacted. In other words, if the Discharger is able to complete all the fields in the notification form within 2 hours, certification requirements are also satisfied. In the event that the Discharger is unable to provide online certification within 24 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the certification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the certification information into the Regional Water Board's online system in electronic format.

[4] If the Discharger cannot satisfy the 5-day reporting requirements via the Regional Water Board's online reporting system, it shall submit a written report (preferably electronically in pdf) to the appropriate Regional Water Board case manager. In cases where the Discharger cannot satisfy the 5-day reporting requirements via the online reporting system, it must still complete the Regional Water Board's online reporting requirements within 15 calendar days of becoming aware of the unauthorized discharge.

F. Planned Changes – Not supplemented

G. Anticipated Noncompliance – Not supplemented

H. Other Noncompliance – Not supplemented

I. Other Information – Not supplemented

VI. STANDARD PROVISION – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

VIII. DEFINITIONS – This section is an addition to Standard Provisions (Attachment D)

More definitions can be found in Attachment A of this NPDES Permit.

1. Arithmetic Calculations

   a. Geometric mean is the antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

   $$\text{Geometric Mean} = Anti\log\left(\frac{1}{N}\sum_{i=1}^{N} Log(C_i)\right)$$

   or

   $$\text{Geometric Mean} = (C_1 * C_2 * \ldots * C_N)^{1/N}$$

   Where "N" is the number of data points for the period analyzed and "C" is the concentration for each of the "N" data points.

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

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

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

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

C_d = Average daily concentration = $\frac{1}{Q_t}\sum_{i=1}^{N} Q_i C_i$

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

c. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the formulas in the paragraph above, using the effluent concentration limit specified in the permit for the period and the specified allowable flow.

d. POTW removal efficiency is the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Dischargers shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

Removal Efficiency (%) = 100 × [1-(Effluent Concentration/Influent Concentration)]

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

3. Blending is the practice of recombining wastewater that has been biologically treated with wastewater that has bypassed around biological treatment units.

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

5. Composite sample is a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow rate of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Dischargers shall determine and implement the most representative sampling protocol for the given parameter subject to Executive Officer approval.

6. Depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled. The

Dischargers shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

7. Flow sample is an accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.

8. Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the wastewater is collected.

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

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

11. Priority pollutants are those constituents referred to in 40 CFR Part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.

12. Stormwater means stormwater runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

13. Toxic pollutant means any pollutant listed as toxic under federal Clean Water Act section 307(a)(1) or under 40 CFR 401.15.

14. Untreated waste is raw wastewater.

15. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in the permit. The requirements of the permit apply to the entire volume of water, and the material therein, that is disposed of to surface and ground waters of the State of California.

Table C

List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1.	Antimony	204.2					10	5	50	0.5	5	0.5		1000
2.	Arsenic	206.3				20		2	10	2	2	1		1000
3.	Beryllium						20	0.5	2	0.5	1			1000
4.	Cadmium	200 or 213					10	0.5	10	0.25	0.5			1000
5a.	Chromium (III)	SM 3500												
5b.	Chromium (VI)	SM 3500				10	5							1000
	Chromium (total)[3]	SM 3500					50	2	10	0.5	1			1000
6.	Copper	200.9					25	5	10	0.5	2			1000
7.	Lead	200.9					20	5	5	0.5	2			10,000
8.	Mercury	1631 (note)[4]												
9.	Nickel	249.2					50	5	20	1	5			1000
10.	Selenium	200.8 or SM 3114B or C						5	10	2	5	1		1000
11.	Silver	272.2					10	1	10	0.25	2			1000
12.	Thallium	279.2					10	2	10	1	5			1000
13.	Zinc	200 or 289					20		20	1	10			
14.	Cyanide	SM 4500 CN^- C or I				5								
15.	Asbestos (only required for dischargers to MUN waters)[5]	0100.2 [6]												
16.	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613												
17.	Acrolein	603	2.0	5										
18.	Acrylonitrile	603	2.0	2										
19.	Benzene	602	0.5	2										
33.	Ethylbenzene	602	0.5	2										
39.	Toluene	602	0.5	2										
20.	Bromoform	601	0.5	2										
21.	Carbon Tetrachloride	601	0.5	2										
22.	Chlorobenzene	601	0.5	2										
23.	Chlorodibromomethane	601	0.5	2										
24.	Chloroethane	601	0.5	2										

[1] The suggested method is the USEPA Method unless otherwise specified (SM = Standard Methods). The Dischargers may use another USEPA-approved or recognized method if that method has a level of quantification below the applicable water quality objective. Where no method is suggested, the Dischargers have the discretion to use any standard method.

[2] Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., USEPA 200.9); Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

[3] Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest hexavalent chromium criterion (11 ug/l).

[4] The Dischargers shall use ultra-clean sampling (USEPA Method 1669) and ultra-clean analytical methods (USEPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 ug/l).

[5] MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

[6] Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, USEPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
25.	2-Chloroethylvinyl Ether	601	1	1										
26.	Chloroform	601	0.5	2										
75.	1,2-Dichlorobenzene	601	0.5	2										
76.	1,3-Dichlorobenzene	601	0.5	2										
77.	1,4-Dichlorobenzene	601	0.5	2										
27.	Dichlorobromomethane	601	0.5	2										
28.	1,1-Dichloroethane	601	0.5	1										
29.	1,2-Dichloroethane	601	0.5	2										
30.	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2										
31.	1,2-Dichloropropane	601	0.5	1										
32.	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2										
34.	Methyl Bromide or Bromomethane	601	1.0	2										
35.	Methyl Chloride or Chloromethane	601	0.5	2										
36.	Methylene Chloride or Dichlorormethane	601	0.5	2										
37.	1,1,2,2-Tetrachloroethane	601	0.5	1										
38.	Tetrachloroethylene	601	0.5	2										
40.	1,2-Trans-Dichloroethylene	601	0.5	1										
41.	1,1,1-Trichloroethane	601	0.5	2										
42.	1,1,2-Trichloroethane	601	0.5	2										
43.	Trichloroethene	601	0.5	2										
44.	Vinyl Chloride	601	0.5	2										
45.	2-Chlorophenol	604	2	5										
46.	2,4-Dichlorophenol	604	1	5										
47.	2,4-Dimethylphenol	604	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49.	2,4-Dinitrophenol	604	5	5										
50.	2-Nitrophenol	604		10										
51.	4-Nitrophenol	604	5	10										
52.	3-Methyl-4-Chlorophenol	604	5	1										
53.	Pentachlorophenol	604	1	5										
54.	Phenol	604	1	1		50								
55.	2,4,6-Trichlorophenol	604	10	10										
56.	Acenaphthene	610 HPLC	1	1	0.5									
57.	Acenaphthylene	610 HPLC		10	0.2									
58.	Anthracene	610 HPLC		10	2									
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61.	Benzo(a)Pyrene	610 HPLC		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene	610 HPLC		10	10									
63.	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64.	Benzo(k)Fluoranthene	610 HPLC		10	2									
74.	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86.	Fluoranthene	610 HPLC	10	1	0.05									
87.	Fluorene	610 HPLC		10	0.1									
92.	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100.	Pyrene	610 HPLC		10	0.05									
68.	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
70.	Butylbenzyl Phthalate	606 or 625	10	10										
79.	Diethyl Phthalate	606 or 625	10	2										
80.	Dimethyl Phthalate	606 or 625	10	2										
81.	Di-n-Butyl Phthalate	606 or 625		10										
84.	Di-n-Octyl Phthalate	606 or 625		10										
59.	Benzidine	625		5										
65.	Bis(2-Chloroethoxy)Methane	625		5										
66.	Bis(2-Chloroethyl)Ether	625	10	1										
67.	Bis(2-Chloroisopropyl)Ether	625	10	2										
69.	4-Bromophenyl Phenyl Ether	625	10	5										
71.	2-Chloronaphthalene	625		10										
72.	4-Chlorophenyl Phenyl Ether	625		5										
73.	Chrysene	625		10	5									
78.	3,3'-Dichlorobenzidine	625		5										
82.	2,4-Dinitrotoluene	625	10	5										
83.	2,6-Dinitrotoluene	625		5										
85.	1,2-Diphenylhydrazine (note)[7]	625		1										
88.	Hexachlorobenzene	625	5	1										
89.	Hexachlorobutadiene	625	5	1										
90.	Hexachlorocyclopentadiene	625	5	5										
91.	Hexachloroethane	625	5	1										
93.	Isophorone	625	10	1										
94.	Naphthalene	625	10	1	0.2									
95.	Nitrobenzene	625	10	1										
96.	N-Nitrosodimethylamine	625	10	5										
97.	N-Nitrosodi-n-Propylamine	625	10	5										
98.	N-Nitrosodiphenylamine	625	10	1										
99.	Phenanthrene	625		5	0.05									
101.	1,2,4-Trichlorobenzene	625	1	5										
102.	Aldrin	608	0.005											
103.	α-BHC	608	0.01											
104.	β-BHC	608	0.005											
105.	γ-BHC (Lindane)	608	0.02											
106.	δ-BHC	608	0.005											
107.	Chlordane	608	0.1											
108.	4,4'-DDT	608	0.01											
109.	4,4'-DDE	608	0.05											
110.	4,4'-DDD	608	0.05											
111.	Dieldrin	608	0.01											
112.	Endosulfan (alpha)	608	0.02											
113.	Endosulfan (beta)	608	0.01											
114.	Endosulfan Sulfate	608	0.05											
115.	Endrin	608	0.01											
116.	Endrin Aldehyde	608	0.01											
117.	Heptachlor	608	0.01											
118.	Heptachlor Epoxide	608	0.01											
119-	PCBs: Aroclors 1016, 1221,	608	0.5											

[7] Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 ug/l, then the Dischargers shall analyze for 1,2-Diphenylhydrazine.

CTR No.	Pollutant/Parameter	Analytical Method[1]	Minimum Levels[2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
125	1232, 1242, 1248, 1254, 1260													
126.	Toxaphene	608	0.5											

ATTACHMENT H – PRETREATMENT REQUIREMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL
BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT H
PRETREATMENT PROGRAM PROVISIONS

For

NPDES POTW WASTEWATER DISCHARGE PERMITS

March 2011
(Corrected May 2011)

CONTENTS Page

Attachment H: Pretreatment Program Provisions

A. The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR 403, including any regulatory revisions to Part 403. Where a Part 403 revision is promulgated after the effective date of the Discharger's permit and places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within six months from the issuance date of this permit or six months from the effective date of the Part 403 revisions, whichever comes later.

(If the Discharger cannot complete the required actions within the above six-month period due to the need to process local adoption of sewer use ordinance modifications or other substantial pretreatment program modifications, the Discharger shall notify the Executive Officer in writing at least 60 days prior to the six-month deadline. The written notification shall include a summary of completed required actions, an explanation for why the six month deadline cannot be met, and a proposed timeframe to complete the rest of the required actions as soon as practical but not later than within twelve months of the issuance date of this permit or twelve months of the effective date of the Part 403 revisions, whichever comes later. The Executive Officer will notify the Discharger in writing within 30 days of receiving the request if the extension is not approved.)

The United States Environmental Protection Agency (USEPA), the State and/or other appropriate parties may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the Clean Water Act (Act).

B. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Discharger shall cause nondomestic users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

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

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

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

3. Publish an annual list of nondomestic users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(viii);

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

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

D. The Discharger shall submit annually a report to USEPA Region 9, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous calendar year. 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 H-1 entitled, "Requirements for Pretreatment Annual Reports." The annual report is due each year on February 28.

E. The Discharger shall submit a pretreatment semiannual report to USEPA Region 9, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, information specified in Appendix H-2 entitled, "Requirements for Pretreatment Semiannual Reports." The semiannual report is due July 31 for the period January through June. The information for the period July through December of each year shall be included in the Annual Report identified in Appendix H-1. The Executive Officer may exempt the Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and USEPA's comment and approval.

F. The Discharger shall conduct the monitoring of its treatment plant's influent, effluent, and sludge (biosolids) as described in Appendix H-4 entitled, "Requirements for Influent, Effluent and Sludge (Biosolids) Monitoring." (The term "biosolids," as used in this Attachment, shall have the same meaning as wastewater treatment plant "sludge" and will be used from this point forward.) The Discharger shall evaluate the results of the sampling and analysis during the preparation of the semiannual and annual reports to identify any trends. Signing the certification statement used to transmit the reports shall be deemed to certify the Discharger has completed this data evaluation. A tabulation of the data shall be included in the pretreatment annual report as specified in Appendix H-4. The Executive Officer may require more or less frequent monitoring on a case by case basis.

APPENDIX H-1

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on February 28 and shall contain activities conducted during the previous calendar year. The purpose of the Annual Report is to:

- Describe the status of the Discharger's pretreatment program; and
- 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, the following information:

A. Cover Sheet

The cover sheet shall include:

1. The name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of the Discharger(s) that is part of the Pretreatment Program;

2. The name, address and telephone number of a pretreatment contact person;

3. The period covered in the report;

4. A statement of truthfulness; and

5. The dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the Publicly Owned Treatment Works (POTW) (40 CFR 403.12(m)).

B. Introduction

This section shall include:

1. Any pertinent background information related to the Discharger and/or the nondomestic user base of the area;

2. List of applicable interagency agreements used to implement the Discharger's pretreatment program (e.g., Memoranda of Understanding (MOU) with satellite sanitary sewer collection systems); and

3. A status summary of the tasks required by a Pretreatment Compliance Inspection (PCI), Pretreatment Compliance Audit (PCA), Cleanup and Abatement Order (CAO), or other pretreatment-related enforcement actions required by the Regional Water Board or the USEPA. A more detailed discussion can be referenced and included in the section entitled, "Program Changes," if needed.

C. Definitions

This section shall include a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program, or the Discharger may provide a reference to its website if the applicable definitions are available on-line.

D. Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the Discharger's treatment plant(s) that the Discharger knows of or suspects were caused by nondomestic user discharges. Each incident shall be described, at a minimum, consisting of the following information:

1. A description of what occurred;

2. A description of what was done to identify the source;

3. The name and address of the nondomestic user responsible;

4. The reason(s) why the incident occurred;

5. A description of the corrective actions taken; and

6. 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.

E. Influent, Effluent and Biosolids Monitoring Results

The Discharger shall evaluate the influent, effluent and biosolids monitoring results as specified in Appendix H-4 in preparation of this report. The Discharger shall retain the analytical laboratory reports with the Quality Assurance and Quality Control (QA/QC) data validation and make these reports available upon request.

This section shall include:

1. Description of the sampling procedures and an analysis of the results (see Appendix H-4 for specific requirements);
2. Tabular summary of the compounds detected (compounds measured above the detection limit for the analytical method used) for the monitoring data generated during the reporting year as specified in Appendix H-4;
3. Discussion of the investigation findings into any contributing sources of the compounds that exceed NPDES limits; and
4. Graphical representation of the influent and effluent metal monitoring data for the past five years with a discussion of any trends.

F. Inspection, Sampling and Enforcement Programs

This section shall include at a minimum the following information:

1. Inspections: Summary of the inspection program (e.g., criteria for determining the frequency of inspections and inspection procedures);

2. Sampling Events: Summary of the sampling program (e.g., criteria for determining the frequency of sampling and chain of custody procedures); and

3. Enforcement: Summary of Enforcement Response Plan (ERP) implementation including dates for adoption, last revision and submission to the Regional Water Board.

G. Updated List of Regulated SIUs

This section shall contain a list of all of the federal categories that apply to SIUs regulated by the Discharger. The specific categories shall be listed including the applicable 40 CFR subpart and section, and pretreatment standards (both maximum and average limits). Local limits developed by the Discharger shall be presented in a table including the applicability of the local limits to SIUs. If local limits do not apply uniformly to SIUs, specify the applicability in the tables listing the categorical industrial users (CIUs) and non-categorical SIUs. Tables developed in Sections 7A and 7B can be used to present or reference this information.

1. CIUs - Include a table that alphabetically lists the CIUs regulated by the Discharger as of the end of the reporting period. This list shall include:

    a. Name;

    b. Address;

    c. Applicable federal category(ies);

    d. Reference to the location where the applicable Federal Categorical Standards are presented in the report;

    e. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and

    f. Information, calculations and data used to determine the limits for those CIUs for which a combined waste stream formula is applied.

2. Non-categorical SIUs - Include a table that alphabetically lists the SIUs not subject to any federal categorical standards that were regulated by the Discharger as of the end of the reporting period. This list shall include:

    a. Name;

b. Address;

c. A brief description of the type of business;

d. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and

e. Indicate the applicable discharge limits (e.g., different from local limits) to which the SIUs are subject and reference to the location where the applicable limits (e.g., local discharge limits) are presented in the report.

H. SIU (categorical and non-categorical) Compliance Activities

The information required in this section may be combined in the table developed in Section 7 above.

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

   a. The number of inspections and sampling events conducted for each SIU by the Discharger;

   b. The number of sampling events conducted by the SIU. Identify SIUs that are operating under an approved Total Toxic Organic Management Plan;

   c. The quarters in which the above activities were conducted; and

   d. The compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:

      (1) Consistent compliance;

      (2) Inconsistent compliance;

      (3) Significant noncompliance;

      (4) On a compliance schedule to achieve compliance (include the date final compliance is required);

      (5) Not in compliance and not on a compliance schedule; and

      (6) Compliance status unknown, and why not.

2. **Enforcement Summary:** This section shall contain a summary of SIU compliance and enforcement activities during the reporting year. The summary may be included in the summary table developed in section 8A and shall include the names and addresses of all SIUs affected by the actions identified below. For each notice specified in enforcement action "i" through "iv," indicate whether it was for an infraction of a federal or local standard/limit or requirement.

    a. 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;

    b. 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;

    c. 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;

    d. 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;

    e. Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty;

    f. Order to restrict/suspend discharge to the Discharger; and

    g. Order to disconnect the discharge from entering the Discharger.

3. **July-December Semiannual Data:** For SIU violations/noncompliance during the semiannual reporting period from July 1 through December 31, provide the following information:

    a. Name and facility address of the SIU;

    b. Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;

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

    d. Indicate the compliance status of the SIU for the two quarters of the reporting period; and

    e. For violations/noncompliance identified 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.

I. Baseline Monitoring Report Update

This section shall provide a list of CIUs 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 the information specified in 40 CFR 403.12(b). For each new CIU, the summary shall indicate when the BMR was due; when the CIU was notified by the Discharger of this requirement; when the CIU submitted the report; and/or when the report is due.

J. 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:

1. Legal authority;
2. Local limits;
3. Monitoring/ inspection program and frequency;
4. Enforcement protocol;
5. Program's administrative structure;
6. Staffing level;
7. Resource requirements;
8. Funding mechanism;
9. If the manager of the Discharger's pretreatment program changed, a revised organizational chart shall be included; and
10. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

K. 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 total expenses required to implement the pretreatment program. A brief discussion of the source(s) of funding shall be provided. In addition, the Discharger

shall make available upon request specific details on its pretreatment program expense amounts such as for personnel, equipment, and chemical analyses.

L. Public Participation Summary

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

M. Biosolids Storage and Disposal Practice

This section shall describe how treated biosolids are stored and ultimately disposed. If a biosolids storage area is used, it shall be described in detail including its location, containment features and biosolids handling procedures.

N. Other Pollutant Reduction Activities

This section shall include a brief description of any programs the Discharger implements to reduce pollutants from nondomestic users that are not classified as SIUs. If the Discharger submits any of this program information in an Annual Pollution Prevention Report, reference to this other report shall satisfy this reporting requirement.

O. Other Subjects

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

P. Permit Compliance System (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:

1. Discharger's name,
2. NPDES Permit number,
3. Period covered by the report,
4. Number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule,
5. Number of notices of violation and administrative orders issued against SIUs,
6. Number of civil and criminal judicial actions against SIUs,
7. Number of SIUs that have been published as a result of being in SNC, and

8. Number of SIUs from which penalties have been collected.

APPENDIX H-2

REQUIREMENTS FOR JANUARY-JUNE PRETREATMENT SEMIANNUAL REPORT

The pretreatment semiannual report is due on July 31 for pretreatment program activities conducted from January through June unless an exception has been granted by the Regional Water Board's Executive Officer (e.g., pretreatment programs without any SIUs may qualify for an exception to the pretreatment semiannual report). Pretreatment activities conducted from July through December of each year shall be included in the Pretreatment Annual Report as specified in Appendix H-1. The pretreatment semiannual report shall contain, at a minimum the following information:

A. Influent, Effluent and Biosolids Monitoring

The influent, effluent and biosolids monitoring results shall be evaluated in preparation of this report. The Discharger shall retain analytical laboratory reports with the QA/QC data validation and make these reports available upon request. The Discharger shall also make available upon request a description of its influent, effluent and biosolids sampling procedures. Violations of any parameter that exceed NPDES limits shall be identified and reported. The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed.

B. Significant Industrial User Compliance Status

This section shall contain a list of all SIUs that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. For the reported SIUs, the compliance status for the previous semiannual reporting period shall be included. Once the SIU has determined to be out of compliance, the SIU shall be included in subsequent reports 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:

1. Name and facility address of the SIU;

2. Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;

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

4. Indicate the compliance status of the SIU for the two quarters of the reporting period; and

5. For violations/noncompliance identified in the reporting period, provide:

    a. The date(s) of violation(s);

    b. The parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters; and

c. A brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

C. Discharger'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 or Pretreatment Compliance Inspection (PCI) Report. It shall contain a summary of the following information:

1. Date of latest PCA or PCI report;

2. Date of the Discharger's response;

3. List of unresolved issues; and

4. Plan(s) and schedule for resolving the remaining issues.

APPENDIX H-3

SIGNATURE REQUIREMENTS FOR PRETREATMENT ANNUAL AND SEMIANNUAL REPORTS

The pretreatment annual and semiannual 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 Discharger [POTW - 40 CFR 403.12(m)]. Signed copies of the reports shall be submitted to the USEPA, the State Water Board, and the Regional Water Board at the following addresses unless the Discharger is instructed by any of these agencies to submit electronic copies of the required reports:

Pretreatment Program Reports
Clean Water Act Compliance Office (WTR-7)
Water Division
Pacific Southwest Region
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Submit electronic copies only to State and Regional Water Boards:
Pretreatment Program Manager
Regulatory Unit
State Water Resources Control Board
Division of Water Quality-15th Floor
1001 I Street
Sacramento, CA 95814
DMR@waterboards.ca.gov
NPDES_Wastewater@waterboards.ca.gov

Pretreatment Coordinator
NPDES Wastewater Division
SF Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
(Submit the report as a single Portable Document Format (PDF) file to the Pretreatment Coordinator's folder in the Regional Water Board's File Transfer Protocol (FTP) site. The instructions for using the FTP site can be found at the following internet address:
http://www.waterboards.ca.gov/sanfranciscobay/publications_forms/documents/FTP_Discharger_Guide-12-2010.pdf.)

APPENDIX H-4

REQUIREMENTS FOR INFLUENT, EFFLUENT AND BIOSOLIDS MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and biosolids at the frequency shown in **the pretreatment requirements table** of the Monitoring and Reporting Program (MRP, Attachment E). 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 the influent and effluent monitoring requirements of the MRP and the Pretreatment Program. The Pretreatment Program monitoring reports as required in Appendices H-1 and H-2 shall be transmitted to the Pretreatment Program Coordinator.

A. Reduction of Monitoring Frequency

The minimum frequency of Pretreatment Program influent, effluent, and biosolids monitoring shall be dependant on the number of SIUs identified in the Discharger's Pretreatment Program as indicated in Table H-1.

Table H-1: Minimum Frequency of Pretreatment Program Monitoring

Number of SIUs	Minimum Frequency
< 5	Once every five years
> 5 and < 50	Once every year
> 50	Twice per year

If the Discharger's required monitoring frequency is greater than the minimum specified in Table H-1, the Discharger may request a reduced monitoring frequency for that constituent(s) as part of its application for permit reissuance if it meets the following criteria:

The monitoring data for the constituent(s) consistently show non-detect (ND) levels for the effluent monitoring and very low (i.e., near ND) levels for influent and biosolids monitoring for a minimum of eight previous years' worth of data.

The Discharger's request shall include tabular summaries of the data and a description of the trends in the industrial, commercial, and residential customers in the Discharger's service area that demonstrate control over the sources of the constituent(s). The Regional Water Board may grant a reduced monitoring frequency in the reissued permit after considering the information provided by the Discharger and any other relevant information.

B. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required sampling and test methods listed in **the pretreatment table** of the MRP. Any test method substitutions must have received prior written Executive Officer approval. Influent and effluent sampling locations shall be the same as those sites specified in the MRP.

The influent and effluent samples should be taken at staggered times to account for treatment plant detention time. Appropriately staggered sampling is considered consistent with the requirement for

collection of effluent samples coincident with influent samples in Section III.A.3.a(2) of Attachment G. All samples must be representative of daily operations. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 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 ML, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following report elements should be used to submit the influent and effluent monitoring results. A similarly structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

1. Sampling Procedures, Sample Dechlorination, Sample Compositing, and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. The Discharger shall make available upon request its sampling procedures including methods of dechlorination, compositing, and data validation.

2. A tabulation of the test results for the detected parameters shall be provided.

3. Discussion of Results – The report shall include a complete discussion of the test results for the detected parameters. 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.

C. Biosolids Monitoring

Biosolids should be sampled in a manner that will be representative of the biosolids generated from the influent and effluent monitoring events except as noted in (C) below. The same parameters required for influent and effluent analysis shall be included in the biosolids analysis. The biosolids analyzed shall be a composite sample of the biosolids for final disposal consisting of:

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

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

3. Dewatered biosolids - 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) 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 biosolids 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 biosolids, is recommended as a guidance for analytical methods.

In determining if the biosolids are a hazardous waste, the Discharger 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.

The following report elements should be used to submit the biosolids monitoring results. A similarly structured form may be used but will be subject to Regional Water Board approval. The results shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

- Sampling Procedures and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. The Discharger shall make available upon request its biosolids sampling procedures and data validation methods.

- Test Results – Tabulate the test results for the detected parameters and include the percent solids.

- Discussion of Results – Include a complete discussion of test results for the detected parameters. If the detected pollutant(s) is reasonably deemed to have an adverse effect on biosolids 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 a summary table presenting any influent, effluent or biosolids monitoring data for non-priority pollutants that the Discharger believes may be causing or contributing to interference, pass through or adversely impacting biosolids quality.