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

STAFF SUMMARY REPORT (Tong Yin)
MEETING DATE: April 8, 2009

ITEMS **5 B**

SUBJECT: **Palo Alto Regional Water Quality Control Plant and Collection System, Palo Alto, Santa Clara County -** Reissuance of NPDES Permit

CHRONOLOGY: August 2003 – Permit reissued

DISCUSSION: The Revised Tentative Order (Appendix A) reissues the NPDES permit for the Palo Alto Regional Water Quality Control Plant and the City of Palo Alto's collection system.

The City of Palo Alto owns and operates the wastewater treatment plant, which serves a population of approximately 230,000. The plant provides advanced secondary treatment of domestic, commercial, and industrial wastewater collected from Palo Alto, Los Altos, Los Altos Hills, Mountain View, East Palo Alto, and Stanford University. The plant has an average dry weather flow design capacity of 39 MGD with advanced secondary treatment, and a peak wet weather flow capacity of 80 MGD with full secondary treatment. Approximately 95% of the plant's treated wastewater is discharged to South San Francisco Bay through a shallow water outfall; about 5% is discharged to Matadero Creek via Renzel Marsh Pond, part of a habitat restoration project.

The City of Palo Alto and the Bay Area Clean Water Agencies submitted comments (Appendix B) on a draft permit. Appendix C contains our response to these comments. We revised the draft tentative order as appropriate and resolved most concerns, although some concerns about dioxin limits remain. The concerns are similar to those the Board has considered with respect to other recent permits.

RECOMMEN-DATION: Adopt the Revised Tentative Order

FILE NUMBER: Case File: 2189.8011
CIWQS Place ID: 247457

APPENDICES:
A. Revised Tentative Order
B. Comment Letters
C. Response to Comments

Appendix A

REVISED TENTATIVE ORDER

Linda S. Adams
Secretary for
Environmental Protection

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

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Arnold Schwarzenegger
Governor

REVISED TENTATIVE ORDER
NPDES PERMIT NO. CA0037834

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

Table 1. Discharger Information

Discharger	City of Palo Alto
Name of Facility	Palo Alto Regional Water Quality Control Plant and City of Palo Alto's sewage collection system
Facility Address	2501 Embarcadero Way
	Palo Alto, CA 94303
	Santa Clara County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

The discharge by the facility, consisting of the Palo Alto Regional Water Quality Control Plant and the City of Palo Alto's sewage collection system, from the discharge points identified below are subject to waste discharge requirements as set forth in this Order.

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary-treated municipal wastewater	37º 27′ 30″ N	122º 06′ 37″ W	South San Francisco Bay
002	Tertiary-treated municipal wastewater	37º 26' 30″ N	122º 06′ 45″ W	Matadero Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	April 8, 2009
This Order shall become effective on:	June 1, 2009
This Order shall expire on:	May 31, 2014
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	180 days prior to the Order expiration date

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 8, 2009.

_____
Bruce H. Wolfe**,** Executive Officer

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Attachments

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	City of Palo Alto
Name of Facility	Palo Alto Regional Water Quality Control Plant (Plant) and City of Palo Alto's sewage collection system
Facility Address	2501 Embarcadero Way
	Palo Alto, CA 94303
	Santa Clara County
Facility Contact, Title, and Phone	Phil Bobel, Environmental Compliance Division Manager, (650) 329-2285
Mailing Address	Same as Facility Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	39 million gallons per day (MGD) (average dry weather flow design capacity with full tertiary treatment) 80 MGD (peak wet weather flow design capacity with full secondary treatment)
Service Areas	Cities of Los Altos, Los Altos Hills, Palo Alto, and Mountain View; East Palo Sanitary District; and the unincorporated area of the Stanford University Campus
Service Area Population	228,500

II. FINDINGS

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

A. Background. The City of Palo Alto (hereinafter the Discharger) owns and operates the Palo Alto Regional Water Quality Control Plant (Plant). The discharge of treated wastewater from the Plant has been regulated under Order No. R2-2003-0078 (previous Order) and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037834. The Discharger submitted a Report of Waste Discharge (ROWD), dated March 27, 2008, and applied for reissuance of its NPDES permit to discharge tertiary treated wastewater from the Plant to waters of the State and the United States.

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

B. Facility and Discharge Description

1. **Facility Description.** The Plant is located at 2501 Embarcadero Way, Palo Alto, Santa Clara County. The Plant provides tertiary treatment of domestic, commercial and industrial wastewater collected from its service areas indicated in Table 4, above. The current total service area population is approximately 228,500.

   Wastewater treatment processes at the Plant include screening and grit removal, primary sedimentation, fixed film reactors, activated sludge treatment, secondary clarification, dual-media filtration, chloramine disinfection, and dechlorination. The design capacity of the fixed film reactors and the dual media filters is 40 MGD, such that the fixed film reactors treat the

first 40 MGD, and any flow in excess of this flow is routed around these units, where it is blended with fixed film reactor effluent and routed to the activated sludge units. Similarly, any excess flow above 40 MGD is routed around the dual-media filters and blended with filter effluent prior to disinfection and dechlorination.

The Discharger's collection system is a 100% separate sanitary sewer. It consists of approximately 207 miles of pipes ranging from 4 inches to 72 inches in diameter, and one small lift station.

2. **Discharge Description.** The Plant has an average dry weather flow design capacity of 39 MGD with full tertiary treatment, and a peak wet weather flow capacity of 80 MGD with full secondary treatment. The average dry weather flow, based on flows from June through October, was 23.4 MGD during 2004–2007; the average daily effluent flow rate was 24.8 MGD, based on flow data during 2003–2008; and the maximum single day effluent flow rate during 2003–2008 was 46.4 MGD. Approximately 95% of the treated wastewater is discharged to an unnamed manmade channel, tributary to South San Francisco Bay, through outfall 001 (Latitude 37º 27′ 30″ and Longitude 122º 06′ 37″). Approximately 5% of the treated wastewater is discharged to the Renzel Marsh Pond through outfall 002 (Latitude 37º 26′ 30″ and Longitude 122º 06′ 45″), where the treated wastewater flows via a controlled outfall to Matadero Creek. The discharge to the Renzel Marsh Pond is a reclamation project that supports a habitat restoration project initiated by the Discharger to enhance a habitat area cut off from freshwater and saltwater inflow by a series of levees and roads built in the early and mid-1900s. The project created a 15-acre freshwater pond with treated effluent, which does not receive flows from other sources, such as storm water or inflow from Matadero Creek. Because Renzel Marsh Pond is exclusively maintained by the Plant's discharge and has a controlled outfall to Matadero Creek, it is not a water of the State or United States. Therefore, the receiving water for outfall 002 is Matadero Creek. Both the unnamed channel and Matadero Creek are waters of the United States.

3. **Biosolids Management.** Solids handling consists of four gravity sludge thickeners (three operational, one not mechanically equipped, two typically in service, and one stand-by) and three belt presses. Dewatered sludge is incinerated on site. Ash is hauled offsite to a hazardous waste landfill. Wet air pollution controls for the incinerator generate approximately 1 MGD of wastewater that is routed to the headworks prior to the bar screens.

4. **Reclamation Activities.** Approximately 0.25 MGD of tertiary-treated, chloraminated wastewater undergoes additional filtration and chlorination prior to use for irrigation and dust suppression purposes, as well as use in the City of Palo Alto's duck pond. Reclaimed water production is expected to increase to approximately 3 MGD upon completion of the Mountain View pipeline project in April 2009. The Discharger's reclamation activities are regulated under Regional Water Board Order No. 93-160. The discharge to Renzel Marsh Pond described in Section II.B.2 of this Order is also a component of the Discharger's reclamation program.

5. **Storm Water Discharge.** The Discharger is not required to be covered under the State Water Resources Control Board's (State Water Board) statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit CAS000001) because all of the storm water captured within the Plant storm drain system is directed to the headworks of the Plant and treated to the standards contained in this Order.

6. **Satellite Collection Systems.** The Plant serves multiple cities and wastewater districts as indicated in Table 4 above. In addition to the City of Palo Alto's collection system, wastewater is conveyed to the Plant from several satellite sewage collection systems serving the Cities of Los Altos and Mountain View, the Town of Los Altos Hills, the East Palo Alto Sanitary District, and unincorporated areas of the Stanford University Campus. Each of these satellite municipalities and districts is obligated by agreement or contract with the Discharger, to operate, maintain, and improve its collection system to ensure no adverse impacts to the Plant. Ownership and operation of the satellite collection systems is further described in Fact Sheet Section II, Facility Description.

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

C. Legal Authorities. This Order is issued pursuant to Clean Water Act (CWA) section 402 and implementing regulations adopted by the USEPA and chapters 5.5, division 7 of the California Water Code (CWC or Water Code, commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of CWC (commencing with section 13260).

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

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

F. Technology-Based Effluent Limitations. CWA Section 301(b) and NPDES regulations at Title 40 of the Code of Federal Regulations (40 CFR) section 122.44 require that permits include conditions meeting applicable 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 minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133 and/or Best Professional Judgment (BPJ) pursuant to 40 CFR 125.3. A detailed discussion of development of the technology-based effluent limitations is included in the Fact Sheet (Attachment E).

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

NPDES regulations at 40 CFR 122.44(d)(1)(i) mandate that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, 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 (WQC), such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

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

Table 5 identifies existing and potential beneficial uses that are assigned to South San Francisco Bay and Matadero Creek. State Water Board Resolution No. 88-63 establishes state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of the tidal and marine influence on the unnamed channel receiving water for the majority of the discharge, total dissolved solids (TDS) levels exceed 3,000 milligrams per liter (mg/L). Matadero Creek is tidally influenced and subject to inflows from South San Francisco Bay, and likewise TDS is expected to exceed 3,000 mg/L. The unnamed channel and Matedero Creek, therefore, meet an exception to Resolution No. 88-63, and the MUN designation does not apply.

Although South San Francisco Bay is listed to support shellfish harvesting, according to the Discharger's submittal dated July 9, 2008, there is no shellfish harvesting in the vicinity of the discharge outfall. The wetlands near the outfall are largely inaccessible and unsuitable for shellfish harvesting. The outfall is surrounded by the Palo Alto Baylands Nature Preserve; public shellfish harvesting for consumption is not allowed under any circumstances on the extensive shoreline of the preserve. The practice would be disruptive to the ecosystem and would therefore be contradictory to the concept of a nature preserve. Furthermore, representatives from the California Department of Fish and Game have stated that no shellfish harvesting occurs in the San Francisco Bay south of Foster City (City of San Jose, *Alternative Effluent Bacteriological Standards Pilot Study*, 2003). In addition, a Senior Ranger with the Palo Alto Baylands Nature Preserve stated in a June 12, 2008, phone conversation with the Discharger that the only shellfish harvesting occurring in the area is that performed by Stanford University and USGS staff for specific scientific surveys (July 9, 2008, City of Palo Alto Evaluation of Bacteria Effluent Limits).

Table 5. Beneficial Uses of South San Francisco Bay and Matadero Creek

Discharge Point	Receiving Water Name	Existing and Potential Beneficial Uses
001	South San Francisco Bay	Industrial Service Supply (IND) Ocean, 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) Contact Recreation (REC1) Non-contact Water Recreation (REC2) Navigation (NAV)
002	Matadero Creek	Cold Freshwater Habitat (COLD) Fish Migration (MIGR) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2)

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

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

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

The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled "Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits", which includes compliance schedule policies for pollutants that are not addressed by the SIP. This policy has been approved by USEPA and OAL, and became effective on August 27, 2008, superseding the Basin Plan's compliance schedule policy.

This Order includes a compliance schedule for dioxin-TEQ as allowed by the Basin Plan, consistent with the State Water Board's new policy. A detailed discussion of the basis for the compliance schedules and interim effluent limitations and/or discharge specifications is included in the Fact Sheet (Attachment F).

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

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on oil and grease, pH, total suspended solids (TSS), and carbonaceous biochemical oxygen demand (CBOD). Derivation of these technology-based limitations is discussed in the Fact Sheet (Attachment F). This Order's technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements that are necessary to meet water quality standards.

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

N. Antidegradation Policy. NPDES regulations at 40 CFR 131.12 require that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law and requires that existing 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. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. CWA sections 402(o)(2) and 303(d)(4) and NPDES regulations at 40 CFR122.44(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. All effluent limitations established by this Order are at least as stringent as those established by the previous Order.

P. 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 Discharger is responsible for meeting all requirements of applicable State and federal law pertaining to threatened and endangered species.

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

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

S. Provisions and Requirements Implementing State Law. No provisions or requirements in this Order are included to implement State law only. All provisions and requirements are required or authorized under the federal CWA; consequently, violations of these provisions and requirements are subject to the enforcement remedies that are available for NPDES violations.

T. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of this notification are provided in the Fact Sheet (Attachment F).

U. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the public hearing are provided in the Fact Sheet (Attachment F).

IT IS HEREBY ORDERED, that this Order supersedes Order No. R2-2003-0078 except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

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

B. The bypass of untreated or partially treated wastewater to waters of the United States is prohibited, except as provided for in the conditions stated in Subsections I.G.2 and I.G.4 of Attachment D of this Order.

The bypass of fixed film reactors or dual media filters is only allowed (1) during wet weather when the primary effluent flow exceeds the fixed film reactors' capacity of 40 MGD, or when the activated sludge treatment units' effluent flow exceeds the filter capacity of 40 MGD; and (2) when the discharge complies with the effluent and receiving water limitations contained in this Order. Furthermore, the Discharger shall operate the facility as designed and in accordance with the Operation & Maintenance Manual developed for the Plant. This means that the Discharger shall optimize storage and shall fully utilize the advanced treatment units, if applicable. The Discharger shall report incidents of blended effluent discharges in routine monitoring reports and shall conduct monitoring of these discharges as specified elsewhere in this Order.

C. The total average dry weather effluent flow, determined at Monitoring Locations EFF-001 and EFF-002 as described in the MRP (Attachment E), shall not exceed 39 MGD. Average dry weather flow shall be determined by the average during the months of June through October.

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

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations for Conventional and Non-Conventional Pollutants – Discharge Points 001 and 002

The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 001 and 002, with compliance measured at Monitoring Locations EFF-001 and EFF-002, as described in the MRP (Attachment E).

1. CBOD, TSS, Oil and Grease, pH, Total Chlorine Residual, and Turbidity

Table 6. Effluent Limitations for CBOD, TSS, Oil and Grease, pH, Total Chlorine Residual, and Turbidity – Discharge Points 001 and 002

Parameters	Units[1]	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
$CBOD_5$[2]	mg/L	10	---	20	---	---
TSS	mg/L	10	---	20	---	---
Oil and Grease	mg/L	5	---	10	---	---
pH[3]	standard units	---	---	---	6.5	8.5
Total Chlorine Residual[4]	mg/L	---	---	---	---	0.0
Turbidity	NTU	---	---	---	---	10

Footnotes for Table 6:

(1) Unit abbreviation:

mg/L= milligrams per liter

NTU = Nephelometric turbidity units

(2) The Discharger may elect to monitor for CBOD in lieu of BOD, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater.*

(3) If the Discharger monitors pH continuously, pursuant to 40 CFR 401.17, the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied: (i) the total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the range of pH values shall exceed 60 minutes.

(4) This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, sodium hypochlorite, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff will conclude that these false positive chlorine residual exceedances are not violations of the effluent limitation. The Discharger may also use the Chlorine Residual reporting and compliance demonstration procedure contained in Footnote 6 to Table E-4 of the MRP (Attachment E).

2. **$CBOD_5$ and TSS 85% Percent Removal.** The average monthly percent removal of $CBOD_5$ and TSS values, by concentration, shall not be less than 85 percent.

3. **Enterococcus Bacteria.** The treated wastewater shall meet the following limit of bacteriological quality:

   The 30-day geometric mean value for all samples analyzed for enterococcus bacteria shall not exceed 35 colonies per 100 mL.

B. Effluent Limitations for Toxic Pollutants – Discharge Points 001 and 002

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

Table 7. Effluent Limitations for Toxic Pollutants[1, 2]

Pollutants	Units[4]	Effluent Limitations	
		Average Monthly Effluent Limitation (AMEL)	Maximum Daily Effluent Limitation (MDEL)
Copper	µg/L	12	16
Nickel	µg/L	26	31
Cyanide	µg/L	7.1	14
Dioxin-TEQ[3]	µg/L	1.4×10^{-8}	2.8×10^{-8}
Chlorodibromomethane	µg/L	34	62
Total Ammonia as Nitrogen	mg/L	2.7	9.5

Footnotes for Table 7:

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

b. All limitations for metals are expressed as total recoverable metal.

(2) A daily maximum or average monthly value for a given constituent shall be considered noncompliant with the effluent limitations only if it exceeds the effluent limitation and the Reporting Level for that constituent. As outlined in Section 2.4.5 of the SIP, Table 8, below indicates the Minimum Level (ML) upon which the Reporting Level is based for compliance determination purposes. In addition, in order to perform reasonable potential analyses for future permit reissuances, the Discharger shall make every effort to use methods with MLs lower than the applicable WQOs or water quality criteria, or, in cases where the available MLs exceed the WQO, the lowest available ML. An ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

(3) Final effluent limitations for dioxin-TEQ shall become effective starting June 1, 2019 (10 years from Order effective date).

Table 8. MLs for Pollutants with Effluent Limitations

Pollutant	ML	Units[4]
Copper	2	µg/L
Nickel	1	µg/L
Cyanide	5	µg/L
Chlorodibromomethane	0.5	µg/L
Dioxin-TEQ	As specified below	
2,3,7,8-TetraCDD	5	pg/L
1,2,3,7,8-PentaCDD	25	pg/L
1,2,3,4,7,8-HexaCDD	25	pg/L
1,2,3,6,7,8-HexaCDD	25	pg/L
1,2,3,7,8,9-HexaCDD	25	pg/L
1,2,3,4,6,7,8-HeptaCDD	25	pg/L
OctaCDD	50	pg/L
2,3,7,8-TetraCDF	5	pg/L
2,3,7,8-TetraCDF	5	pg/L
1,2,3,7,8-PentaCDF	25	pg/L
2,3,4,7,8-PentaCDF	25	pg/L
1,2,3,4,7,8-HexaCDF	25	pg/L
1,2,3,6,7,8-HexaCDF	25	pg/L

Pollutant	ML	Units[4]
1,2,3,7,8,9-HexaCDF	25	pg/L
2,3,4,6,7,8-HexaCDF	25	pg/L
1,2,3,4,6,7,8-HeptaCDF	25	pg/L
1,2,3,4,7,8,9-HeptaCDF	25	pg/L
OctaCDF	50	pg/L

(4) Unit Abbreviation
mg/L= milligrams per liter
µg/L = micrograms per liter
pg/L = picograms per liter

C. Interim Effluent Limitation for Dioxin-TEQ

The Discharger shall comply with the following interim effluent limit for dioxin-TEQ at Discharge Points 001 and 002, with compliance measured at Monitoring Locations EFF-001 and EFF-002 as described in the MRP (Attachment E). The interim limit for dioxin-TEQ shall remain in effect until May 31, 2019. Starting June 1, 2019, the final effluent limit in Table 7 for dioxin-TEQ shall become effective.

Table 9. Interim Effluent Limitation for Dioxin-TEQ

Pollutant	Units	Average Monthly Effluent Limitation
Dioxin-TEQ	µg/L	6.3×10^{-5}

D. Whole Effluent Toxicity

1. Whole Effluent Acute Toxicity:

a. Representative samples of the effluent at Discharge Points 001 and 002, with compliance measured at EFF-001 and EFF-002 as described in the MRP (Attachment E), shall meet the following limits for acute toxicity. Bioassays shall be conducted in compliance with Section V.A of the MRP (Attachment E).

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

(2) an eleven (11)-sample 90th 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 bioassay tests show less than 70 percent survival.

c. Bioassays shall be performed using the most up-to-date USEPA protocol and the most sensitive species as specified in writing by the Executive Officer based on the most recent screening test results. Bioassays shall be conducted in compliance with Methods for

Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, currently 5th Edition (EPA-821-R-02-012), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger's request with justification.

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

2. Whole Effluent Chronic Toxicity

a. Compliance with the Basin Plan narrative chronic toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the effluent at Discharge Points 001 and 002, with compliance measured at EFF-001 and EFF-002 as described in the MRP (Attachment E), meeting test acceptability criteria and Section V.B of the MRP (Attachment E). Failure to conduct the required toxicity tests or a TRE within a designated period may result in the establishment of effluent limitations for chronic toxicity.

(1) Conduct routine monitoring.

(2) Conduct accelerated monitoring after exceeding a three sample median of 1 chronic toxicity unit (TUc[1]) or a single-sample maximum of 2 TUc or greater.

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

(4) If accelerated monitoring confirms consistent toxicity above either "trigger" in (2), above, initiate toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) procedures in accordance with a workplan submitted in accordance with Provision VI.C.2.c that incorporates all comments from the Executive Officer.

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

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

[1] A TUc equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values. These terms, their usage, and other chronic toxicity monitoring program requirements are defined in more detail in the MRP (**Attachment E**). Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge.

addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms,* currently third edition (EPA-821-R-02-014), and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* currently fourth Edition (EPA-821-R-02-013), with exceptions granted by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

E. Land Discharge Specifications

Not Applicable.

F. Reclamation Specifications

Water reclamation requirements are regulated under Regional Water Board Order No. 93-160.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

1. Receiving water limitations are based on WQOs contained in the Basin Plan and are a required part of this Order. The discharges shall not cause the following in the unnamed channel, Matadero Creek, or South San Francisco Bay.

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

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

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

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

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

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

   a. 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.

b.	Dissolved Sulfide	Natural background levels
c.	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.
d.	Nutrients:	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3. The discharge shall not cause a violation of any 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, or amendments thereto, the Regional Water Board may revise and modify this Order in accordance with such more stringent standards.

B. Groundwater Limitations

Not Applicable.

VI. PROVISIONS

A. Standard Provisions

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

2. **Regional Water Board Standard Provisions.** The Discharger shall comply with all applicable items of the Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (Regional Water Board Standard Provisions, Attachment G), including any amendments thereto, except for Section A.13 related to bypass. Where provisions or reporting requirements specified in this Order and Attachment G are different from equivalent or related provisions or reporting requirements given in the Standard Provisions in Attachment D, the specifications of this Order and/or Attachment G shall apply in areas where those provisions are more stringent. Duplicative requirements in the federal Standard Provisions (Attachment D) and the Regional Water Board Standard Provisions (Attachment G) are not separate requirements. A violation of a duplicative requirement does not constitute two separate violations.

B. MRP Requirements

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

C. Special Provisions

1. Reopener Provisions

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

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

b. If new or revised WQOs or total maximum daily loads (TMDLs) come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs and 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 WQOs, TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.

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

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

e. Or as otherwise authorized by law.

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

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Effluent Characterization for Selected Constituents

The Discharger shall continue to monitor and evaluate the discharge from Discharge Points 001 and 002 (measured at EFF-001 and EFF-002; however, discharges that receive the same treatment are occurring at both Discharge Points 001 and 002, thus, monitoring at either Monitoring Location EFF-001 or EFF-002 will satisfy monitoring requirements for both discharge points) for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001, Letter according to the sampling frequency specified in the attached MRP (Attachment E). Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Water Board's August 6, 2001, Letter under Effluent Monitoring for Major Dischargers (Attachment G). The Discharger shall evaluate on an annual basis if concentrations of any constituents increase over past performance. The Discharger shall investigate the cause of the increase. The investigation may include, but need not be limited to, an increase in the effluent monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. This requirement may be satisfied through identification of these constituents as "pollutants of concern" in the Discharger's Pollutant Minimization Program, described in Provision VI.C.3, below. A summary of the annual evaluation of data and source investigation activities shall also be provided in the annual self-monitoring report.

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

b. Ambient Background Receiving Water Study

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

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

c. Chronic Toxicity Reduction Evaluation (TRE) Requirements

(1) The Discharger 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 Discharger shall review and update the work plan as necessary to remain current and applicable to the discharge and discharge facilities.

(2) Within 30 days of exceeding either trigger for accelerated monitoring as specified in IV.D.2.a.(2), the Discharge shall submit to the Regional Water Board a TRE work plan, which should be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.

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

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

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

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

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

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

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

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

(5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (complying with requirements of Section IV.D.2 of this Order).

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

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

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

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

d. Receiving Water Ammonia Characterization Study

The Discharger shall conduct a two-year study to characterize ammonia, and discharge and receiving water flow characteristics, in both Matadero Creek and the South Bay in the vicinity of the discharges (Discharges 001 and 002). The Discharger shall follow the tasks and schedule below:

Table 10. Receiving Water Ammonia Characterization Study Tasks and Schedule

Tasks	Deadline
a. Submit a study plan that includes the following elements: • sampling locations (effluent and receiving water sampling locations adequate to characterize the effects of the discharge to the receiving water, both upstream and downstream of discharge points 001 and 002), this includes characterization of whether each discharge is a completely-mixed discharge as defined in the SIP; • sampling and analysis protocols (including means to evaluate diurnal conditions, such as some continuous monitoring); • sampling parameters (at a minimum, pH, salinity, temperature, hardness, dissolved oxygen, total ammonia, and chlorophyll-α); • data interpretation models and other methods to be used	August 1, 2009

Tasks	Deadline
(representing conservative, reasonable worst case conditions); • for the receiving water of Discharge 001, a plan to identify (1) ammonia and unionized ammonia concentration profiles in the vicinity of the discharge (until total ammonia or unionized ammonia concentrations are at ambient levels), (2) the locations and dilution factors that correspond to the highest total ammonia or unionized ammonia concentration; and • implementation schedule.	
b. Begin implementation of the study plan developed for Task "a."	September 21, 2009
c. Submit annual status reports that contain, at minimum, monitoring data collected during the previous year and necessary updates to the study plan.	Annually, on February 1, with the Self-Monitoring Annual Report required by the MRP (Attachment E)
d. Submit a final report that fully describes the following elements: • sampling results, data interpretation, and conclusions; • description of mixing zone and dilution credit; • total ammonia effluent concentration goals that account for Basin Plan un-ionized ammonia objectives (translated into total ammonia criteria) and dilution (if different than D=1); and • evaluation of the feasibility of compliance with ammonia effluent limits based on the new dilution credit (if different than D=1).	February 1, 2012

e. Optional Mass Offset

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

f. Optional Near-Field Site-Specific Translator Study

The Discharger has the option to conduct a receiving water study, near-field to the discharge, during the term of this Order for determination of new, near-field site-specific translators for chromium, zinc, and lead for use during the next permit reissuance. If the Discharger plans to perform the study, then it shall follow the tasks and schedules below.

Table 11. Optional Site-Specific Translator Study Tasks and Schedules

Task	Schedule
(1) Submit a study plan acceptable to the Executive Officer.	At the Discharger's discretion.
(2) Commence data collection.	Within 45 days after submitting the study plan if the Executive Officer does not comment on the study plan.
(3) Submit a final study report documenting the study and proposing translators for the discharge.	Within 60 days after data collection.

3. Best Management Practices and Pollutant Minimization

a. Pollutant Minimization Program (PMP)

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

b. Annual Pollution Prevention (P2) Report

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

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

(2) *Discussion of current pollutants of concern.* Periodically, the Discharger shall determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall address why the pollutants were identified as pollutants of concern.

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

(4) *Identification and implementation of measures to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks themselves or participate in a regional, State, or national group to address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.

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

(6) *Continuation of Public Outreach Program.* The Discharger shall prepare a public outreach program to communicate pollution minimization measures to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, conducting school outreach programs, conducting plant tours, and providing public information in various media. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.

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

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

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

(10) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation of effectiveness, the Discharger shall describe how it will continue or change its PMP tasks to more effectively reduce the loading of pollutants to the treatment plant and therefore in its effluent.

c. PMP for Pollutants with Effluent Limitations

The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

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

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

d. Submittals for Pollutants with Effluent Limitations

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

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

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

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

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

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

i. All PMP monitoring results for the previous year,

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

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

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

4. Construction, Operation and Maintenance Specifications

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

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

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

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

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

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

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

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

c. Reliability Status Report

(1) The Discharger shall maintain a Reliability Status Report for the Discharger's wastewater facilities, which will allow the Regional Water Board to evaluate the reliability of the Discharger's system in preventing inadequately treated wastewater from being discharged into the receiving waters. The Reliability Status Report shall be maintained in usable condition and be available for reference and use by all applicable personnel.

(2) The Discharger shall regularly review, revise, or update, as necessary, the Reliability Status Report to ensure that the document may remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed as soon as practical.

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

d. Contingency Plan, Review, and Status Reports

(1) The Discharger shall maintain a Contingency Plan as required by Regional Water Board Resolution No. 74-10 (Attachment G) and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a Contingency Plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the CWC.

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

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

5. Special Provisions for POTWs

a. Pretreatment Program

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

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

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

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

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

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

b. Biosolids Management Practices Requirements

(1) All biosolids generated by the Discharger must be disposed of in a municipal solid waste landfill, used as part of a waste-to-energy facility, reused by land application, or disposed of in a sludge-only landfill in accordance with 40 CFR 503. If the Discharger desires to dispose of biosolids by a different method, a request for permit modification must be submitted to USEPA 180 days before start-up of the alternative disposal practice. All the requirements in 40 CFR 503 are enforceable by USEPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger. The Regional Water Board should be copied on relevant correspondence and reports forwarded to USEPA regarding 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 Discharger shall take all reasonable steps to prevent or minimize any biosolids use or disposal which has a likelihood of adversely affecting human health or the environment.

(4) The discharge of biosolids shall not cause waste material to be in a position where it is or can be carried from the 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 biosolids incinerator as defined in 40 CFR 503, the Discharger shall submit an annual report to USEPA and the Regional Water Board containing monitoring results and pathogen and vector attraction reduction requirements as specified by 40 CFR 503, postmarked February 15 of each year, for the period covering the previous calendar year.

(7) Biosolids that are disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 258. In the annual self-monitoring report, the Discharger shall include the amount of biosolids disposed of and the landfill(s) to which it was sent.

(8) Permanent on-site biosolids storage or disposal activities are not authorized by this Order. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.

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

Implementation of the General Collection System WDR requirements for proper operation and maintenance and mitigation of spills will satisfy the corresponding federal NPDES requirements specified in this Order. Following reporting requirements in the General Collection System WDR will satisfy NPDES reporting requirements for sewage spills. Furthermore, the Discharger shall comply with the schedule for development of sewer system management plans (SSMPs) as indicated in the letter issued by the Regional Water Board on July 7, 2005, pursuant to CWC section 13267; and with the sanitary sewer overflow and unauthorized discharge notification and reporting requirements of the letter issued by the Regional Water Board on May 1, 2008, pursuant

to CWC Section 13267. The Discharger has fulfilled this requirement by August 31, 2008. The Discharger shall report sanitary sewer overflows electronically using the State Water Board's state-wide online reporting system.

6. Other Special Provisions

a. Cyanide Action Plan

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

Table 12. Cyanide Action Plan

Task	Compliance Date
(1) Review Potential Cyanide Contributors The Discharger shall submit an inventory of potential contributors of cyanide to the wastewater treatment facility (e.g., metal plating operations, hazardous waste recycling). If no contributors of cyanide are identified, Tasks 2 and 3 are not required, unless the Discharger receives a request to discharge detectable levels of cyanide to the sanitary sewer. If so, the Discharger shall notify the Executive Officer and implement Tasks (2) and (3).	Within 90 days of Order effective date
(2) Implement Cyanide Control Program The Discharger shall submit a plan for, and begin implementation of, a program to minimize cyanide discharges to the sanitary sewer system consisting, at a minimum, of the following elements: i. Inspect each potential contributor to assess the need to include that contributing source in the control program. ii. 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). iii. Develop and distribute educational materials to contributing sources and potential contributing sources regarding the need to prevent cyanide discharges. iv. Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. v. If ambient monitoring shows cyanide concentrations of 1.0 µg/L or higher in the main body of San Francisco Bay, undertake actions to identify and abate cyanide sources responsible for the elevated ambient concentrations.	February 28, 2010, with 2009 annual P2 report
(3) Report Status of Cyanide Control Program Submit a report to the Regional Water Board documenting implementation of the cyanide control program.	Annually with P2 reports due February 28

b. Copper Action Plan

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

Table 13. Copper Action Plan

Task	Compliance Date
(1) Review Potential Copper Sources The Discharger shall submit an inventory of potential copper sources to the wastewater treatment facility.	Within 90 days of Order effective date
(2) Implement Copper Control Program The Discharger shall submit a plan for and begin implementation of a program to reduce copper discharges identified in Task (1) consisting, at a minimum, of the following elements: i. Provide education and outreach to the public (e.g., focus on proper pool and spa maintenance and plumbers' roles in reducing corrosion). ii. 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. iii. Educate plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharges.	February 28, 2010, with 2009 annual P2 report
(3) Implement Additional Measures If the three-year rolling mean dissolved copper concentration of South Bay exceeds 4.2 µg/L, evaluate the effluent copper concentration trend, and if it is increasing, develop and implement additional measures to control copper discharges.	Within 90 days of exceedance
(4) Report Status of Copper Control Program Submit a report to the Regional Water Board documenting implementation of the copper control program.	Annually with P2 reports due February 28

c. Reclamation Programs

The Discharger shall continue to implement its reclamation programs as described in Finding II.B.4.

d. Compliance Schedule for Dioxin-TEQ

The following table outlines actions to be completed in order to meet the final limits for dioxin-TEQ.

Table 14. Dioxin-TEQ Compliance Schedule

Task	Deadline
(1) The Discharger shall continue its semi-annual dioxin monitoring at monitoring point EFF-001and EFF-002, and comply with the reporting requirements contained in the MRP. The Discharger shall also comply with the following interim effluent limit: Dioxin-TEQ: MDEL = 6.3×10^{-5} µg/L	Upon Order effective date
(2) If dioxin-TEQ effluent monitoring data show that the Discharger is out of compliance, as described in Section 2.4.5, Compliance Determination, of the SIP, the Discharger shall submit a plan to identify all dioxin-TEQ	No later than 12 months after monitoring data show that the Discharger is out of

Task	Deadline
sources to the discharge and identify source control measures to reduce concentrations of these pollutants to the treatment plant, and therefore to receiving waters.	compliance
(3) Implement the plan developed in task (2), including both pollutant source identification and source control.	Within 30 days of the deadline for task (2)
(4) Submit a report that contains an inventory of the pollutant sources.	No later than four months after the deadline for task (2)
(5) Submit a report documenting development and initial implementation of a program to reduce and prevent the pollutants of concern in the discharge. The program shall consist, at a minimum, of the following elements: i. Maintain a list of sources of pollutants of concern. ii. Investigate each source to assess the need to include it in the program. iii. Identify and implement targeted actions to reduce or eliminate iv. Develop and distribute, as appropriate, educational materials regarding the need to prevent sources to the sewer system.	No later than six months after the deadline for task (2)
(6) Continue to implement the program described in task (5) and submit annual status reports that evaluate its effectiveness and summarize planned changes. Report whether the program has successfully brought the discharge into compliance with the effluent limits in this Order.	Annually with P2 reports due February 28
(7) In the event that source control measures are insufficient for meeting final WQBELs specified in Effluent Limitations and Discharge Specifications IV.B for or dioxin-TEQ, the Discharger shall submit a schedule for implementation of additional actions to reduce the concentrations of these pollutants.	No later than 4 months after the most recent annual P2 report that identifies that additional actions are needed
(8) The Discharger shall commence implementation of the identified additional actions in accordance with the schedule submitted in task (7).	Within 45 days after the deadline for task (7)
(9) Full Compliance with IV.B Effluent Limitations and Discharger Specifications for dioxin-TEQ. Alternatively, the Discharger may comply with the limits through implementation of a mass offset strategy for dioxin-TEQ in accordance with policies in effect at that time. Alternatively, the Discharger may comply with the limits through implementation of a mass offset strategy for dioxin-TEQ in accordance with policies in effect at that time.	June 1, 2019 (10 years from Order effective date)

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VII. COMPLIANCE DETERMINATION

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

A. General

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP, Attachment A and Section VI of the Fact Sheet of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the

concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Multiple Sample Data

When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

ATTACHMENT A – DEFINITIONS

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

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

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

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

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

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

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

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

Daily Discharge: 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 the Order), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the

sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

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

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

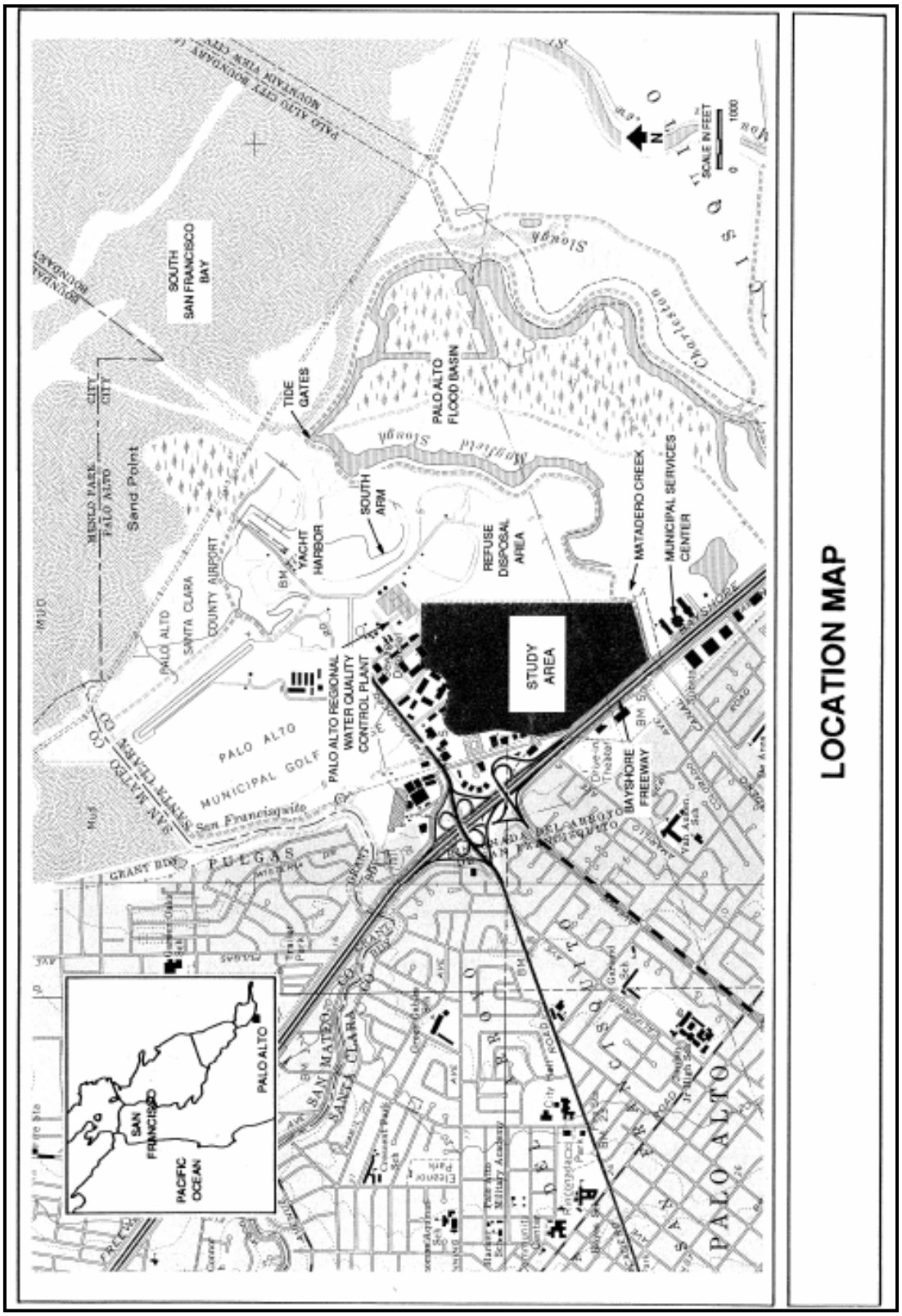
Standard Deviation (σ) is a measure of variability that is calculated as follows:

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

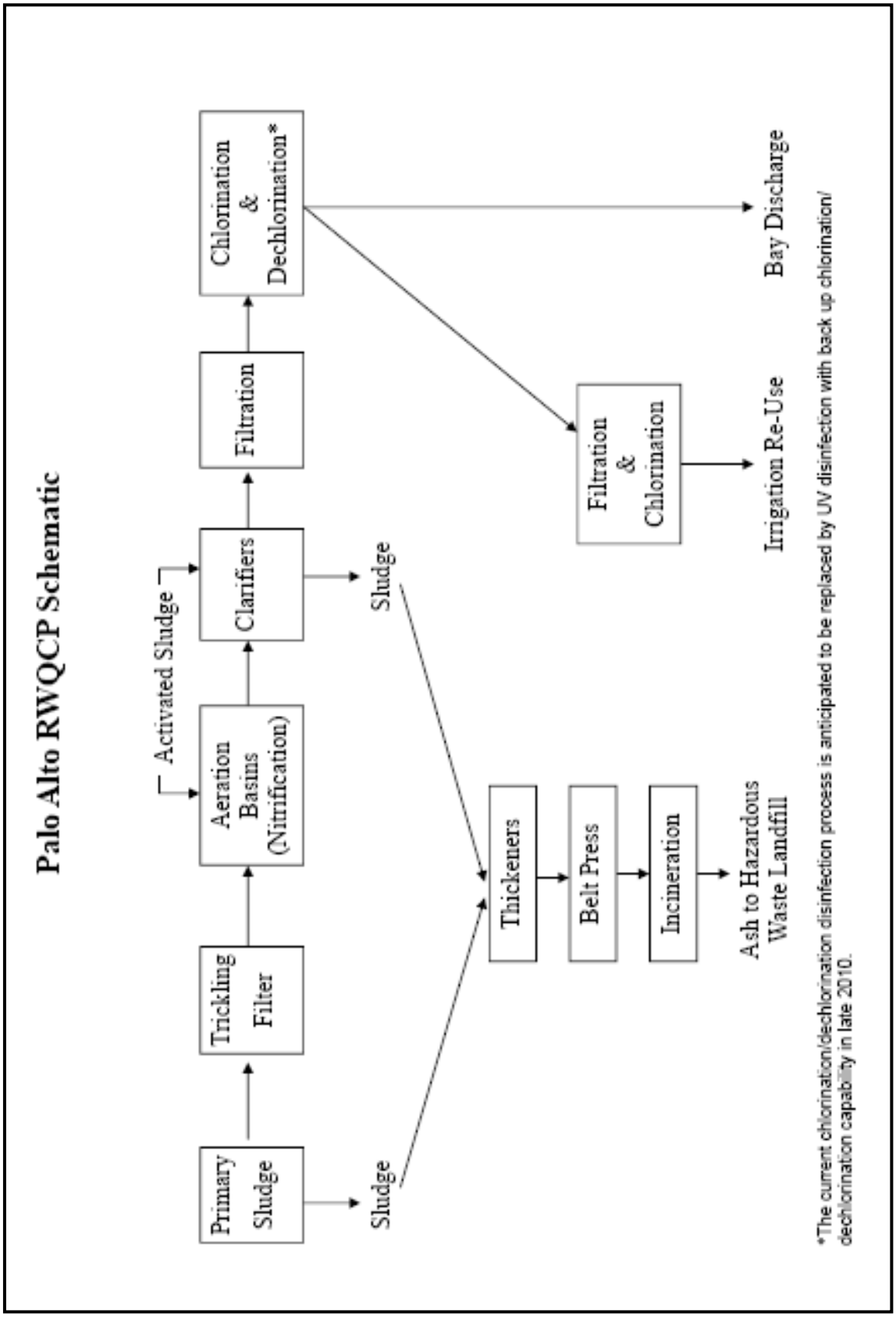
where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

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

ATTACHMENT B – FACILITY MAP



ATTACHMENT C – PROCESS FLOW DIAGRAM



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

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

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

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

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

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

G. Bypass

1. Definitions

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

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

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

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

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

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

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

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

5. Notice

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

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

H. Upset

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

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

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

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

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

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

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

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

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

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

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

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

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

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

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

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

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

C. Monitoring Reports

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

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

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

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger

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

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

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

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

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

F. Planned Changes

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

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

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

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

G. Anticipated Noncompliance

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

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted.

The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

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

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

40 CFR 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

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

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

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

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

E. For compliance and reasonable potential monitoring, analyses shall be conducted using commercially available and reasonably achievable detection levels that are lower than the WQOs/WQC or the effluent limitations, whichever are lower. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below. Table E-1 lists the test methods the Discharger may use for compliance and reasonable potential monitoring for the toxic pollutants with effluent limits.

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

CTR #	Constituent	Types of Analytical Methods [1] Minimum Levels (µg/L)											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICPMS	SPGFAA	HYDRIDE	CVAF	DCP
6	Copper						5		0.5	2			
9	Nickel						5	20	1	5			
14	Cyanide				5								
	Dioxin-TEQ[2]												
23	Chlorodibromomethane	0.5	2										

Footnotes for Table E-1:

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

Color	=	Colorimetric;
CVAF	=	Cold Vapor Atomic Fluorescence.
DCP	=	Direct Current Plasma
FAA	=	Furnace Atomic Absorption;
GC	=	Gas Chromatography
GCMS	=	Gas Chromatography Mass Spectroscopy
GFAA	=	Graphite Furnace Atomic Absorption;
ICP	=	Inductively Coupled Plasma
ICPMS	=	Inductively Coupled Plasma/Mass Spectrometry;
LC	=	Liquid Chromatography
SPGFAA	=	Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9)

(2) Use USEPA Method 1613. MLs shall be those specified by Table 8 of this Order for each congener.

II. MONITORING LOCATIONS

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

Table E-2. Monitoring Station Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Influent	INF-001	At any point in the treatment facility headworks at which all waste tributary to the treatment system is present, and proceeding any phase of treatment.
Effluent	EFF-001	At any point in the outfall from the treatment facility, following treatment, including disinfection, and before contact with receiving water, where all waste streams tributary to Discharge Point 001 are present.
Effluent	EFF-002	At any point in the outfall from the treatment facility, following treatment, including disinfection, and before contact with receiving water, where all waste streams tributary to Discharge Point 002 are present. Currently EFF-001 is the same as EFF-002.
Receiving Water	RSW-1B	At the historic monitoring location in Renzel Marsh Pond, formerly called 1-B.
Receiving Water	RSW-2B	At the historic monitoring location in Renzel Marsh Pond, formerly called 2-B.
Receiving Water	RSW-E1	At a point located at the discharge from the marsh to Matadero Creek, consisting entirely of discharge from the pond, formerly called E-1.
Receiving Water	RSW-MC	At a point in Matadero Creek where the creek passes beneath the Bayshore Freeway, formerly called Matadero Creek.

III. INFLUENT MONITORING REQUIREMENTS

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

Table E-3. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow(1)	MGD/MG	Cont/D	Cont
$CBOD_5$(2)	mg/L	C-24	1/week
	kg/day	Calculate	1/week
TSS	mg/L	C-24	1/week
	kg/day	Calculate	1/week
Cyanide	µg/L	Grab	1/month

Legends for Table E-3

(1) Unit Abbreviations
MGD = million gallons per day
MG = million gallons
mg/L = milligrams per liter
kg/day = kilograms per day
µg/L = micrograms per liter

(2) Sample type
Cont = continuous monitoring
Cont/D = measured continuously and recorded and reported daily
C-24 = 24-hour composite

(3) Sampling frequency
1/week = once per week
1/month = once per month

Footnotes for Table E-3:

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

(2) The Discharger may elect to monitor CBOD as BOD, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*.

IV. EFFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor treated effluent discharged from the Plant at EFF-001 and EFF-002 in accordance with the requirements of Table E-4. When discharges are occurring at both Discharge Points 001 and 002, compliance monitoring at either Monitoring Location EFF-001 or Monitoring Location EFF-002 will satisfy monitoring requirements for both outfalls for all parameters identified in Table E-4 except "Flow Rate" and "Standard Observations."

Table E-4. Effluent Monitoring

Parameter	**Units**	**Sample Type**	**Minimum Sampling Frequency**
Flow Rate(1)	MGD/MG	Cont/D	Cont
$CBOD_5$(2)	mg/L	C-24	1/week
	kg/day	Calculate	1/week
TSS	mg/L	C-24	1/week
	kg/day	Calculate	1/week

Parameter	Units	Sample Type	Minimum Sampling Frequency
$CBOD_5$ and TSS percent removal(3)	%	Calculate	1/month
pH(4)	s.u.	Grab	1/day
Oil and Grease(5)	mg/L	Grab composites	1/quarter
	kg/day	Calculate	1/quarter
Turbidity	NTU	Grab	5/week
Total Chlorine Residual(6)	mg/L	Cont/H	1/hour
	kg/day	Calculate	1/hour
Enterococcus Bacteria(7)	cfu/100 mL	Grab	5/week
Temperature	°C	Grab	1/day
Dissolved Oxygen	mg/L	Grab	1/day
	% Saturation	Grab	1/day
Dissolve Sulfides (if D.O. <5 mg/L)(8)	mg/L	Grab	1/day
Total Ammonia Nitrogen	mg/L as N	C-24	1/month
	kg/day as N	Calculate	1/month
Unionized Ammonia	mg/L as N	Calculate	1/month
Acute Toxicity(9)	% survival	Flow-through	1/month
Chronic Toxicity(10)	TUc	C-24	1/month
Copper	µg/L	C-24	1/month
Nickel	µg/L	C-24	1/month
Cyanide	µg/L	Grab	1/month
Dioxin-TEQ(11)	µg/L	Grab	2/year
Chlorodibromomethane	µg/L	Grab	1/quarter
Remaining Priority Pollutants(12)	µg/L	(12)	2/year
Standard Observations(13)	---	---	1/week

Legends for Table E-4:

(1) Unit Abbreviations
- MGD = million gallons per day
- MG = million gallons
- mg/L = milligrams per liter
- µg/L = micrograms per liter
- s.u. = standard units
- NTU = Nephelometric turbidity units
- ml/L-hr = milliliters per liter, per hour
- kg/day = kilograms per day
- °C = degrees Celsius
- cfu/100 mL = colony-forming units per 100 milliliters
- TUc = chronic toxic units

(2) Sample Type Abbreviations
- Cont = measured continuously
- Cont/D = measured continuously, and recorded and reported daily
- Cont/H = measured continuously, and recorded and reported hourly
- C-24 = 24-hour composite
- Flow-through = continuously pumped sample during duration of toxicity test

(3) Sampling frequency
- 1/hour = once per hour
- 1/day = once per day
- 5/week = five times per week
- 1/week = once per week
- 1/month = once per month

1/quarter = once per quarter
2/year = twice per year

Footnotes for Table E-4:

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

(2) **CBOD vs. BOD.** The Discharger may elect to monitor CBOD as BOD, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*.

(3) **$CBOD_5$ and TSS.** The percent removal for $CBOD_5$ and TSS shall be reported for each calendar month in accordance with Effluent Limitation IV.A.2. Samples for $CBOD_5$ and TSS shall be collected simultaneously with influent samples.

(4) **pH.** If pH is monitored continuously; the minimum and maximum pH values for each day shall be reported in monthly self-monitoring reports.

(5) **Oil and Grease.** Each oil and grease 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 a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within the accuracy of plus or minus 5%. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

(6) **Total Chlorine Residual.** Effluent chlorine concentrations shall be monitored continuously. Chlorine residual concentrations shall be monitored and reported for sampling points both before and after dechlorination. The Discharger shall report the maximum residual chlorine concentration observed following dechlorination on a daily basis. Total chlorine dosage (kg/day) shall be recorded on a daily basis.

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

(7) **Enterococcus Bacteria**. The Executive Officer may reduce the sampling frequency to 3 times per week at the request of the Discharger and evidence of sustained compliance with the effluent limitation.

(8) **Dissolved Sulfides.** Monitoring for dissolved sulfides shall occur when D.O. concentrations are less than 5 mg/L.

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

(10) **Chronic toxicity.** Critical life stage toxicity tests shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in Section V.B of this MRP.

(11) **Dioxin-TEQ.** Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of USEPA Method 1613; the analysis shall be capable of achieving one half the USEPA method 1613 Minimum Levels. Alternative methods of analysis must be approved by the Executive Officer. In addition to reporting concentration results for each of the 17 congeners, the dioxin-TEQ shall be calculated and reported using 1998 USEPA Toxicity Equivalent Factors for dioxin and furan congeners.

(12) **Remaining priority pollutants.** The sample type and analytical method should be as described in the August 6, 2001, letter (Attachment G) or as amended and subsequently approved by the Executive Officer.

(13) **Standard observations.** As specified in the Self-Monitoring Program, Part A.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor acute and chronic toxicity for discharge at Discharge Points 001 and 002, with compliance determined at Monitoring Location EFF-001 and EFF-002, as follows.

A. Whole Effluent Acute Toxicity

1. Compliance with the acute toxicity effluent limitations for Discharge Points 001 and 002 of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays, with compliance determined at Monitoring Location EFF-001.

2. Test organisms shall be rainbow trout (*Onchorhynchus mykiss*) unless specified otherwise in writing by the Executive Officer.

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

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

5. Effluent used for fish bioassays must be dechlorinated prior to testing. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, total ammonia, un-ionized ammonia (by calculation, if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of acute toxicity requirements occurs or if the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue back to back until compliance is demonstrated.

B. Whole Effluent Chronic Toxicity

1. Chronic Toxicity Monitoring Requirements

a. Sampling. The Discharger shall collect 24-hour composite samples of the effluent of Discharge Points 001 and 002, with compliance determined at Monitoring Location EFF-001 and EFF-002, 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 *Ceriodaphnia dubia.* The Discharger shall conduct a three species screening chronic toxicity test as described in Appendix E-1 after any significant change in the nature of the effluent or prior to permit reissuance. The most sensitive species shall be used for routine chronic toxicity monitoring. The Executive Officer may change to another test species if data suggest that another test species is more sensitive to the discharge.

c. Sampling Frequency.

(1) Routine Monitoring: once per month.

(2) Accelerated Monitoring: twice per month, or as otherwise specified by the Executive Officer.

(3) Conditions for Accelerated Monitoring. The Discharger shall conduct accelerated monitoring when either of the following conditions is exceeded:

- Three sample median value of 1 TUc, or
- Single sample maximum value of 2 TUc.

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 third edition (EPA-821-R-02-014), and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* currently fourth Edition (EPA-821-R-02-013), with exceptions granted the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

e. Dilution Series. The Discharger shall conduct tests with a control and five effluent concentrations (including 100% effluent) and using a dilution factor ≥ 0.5.

2. Chronic Toxicity Reporting Requirements

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

(1) Sample date(s)

(2) Test initiation date

(3) Test species

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

(5) NOEC value(s) in percent effluent

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

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

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

(9) NOEC and LOEC values for reference toxicant test(s)

(10) IC_{50} or EC_{50} value(s) for reference toxicant test(s)

(11) Available water quality measurements for each test (pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

b. Compliance Summary. The results of the chronic toxicity testing shall be provided in the self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include items listed above under 2.a, specifically item numbers (1), (3), (5), (6) (IC_{25} or EC_{25}), (7), and (8).

VI. LAND DISCHARGE MONITORING REQUIREMENTS

Not Applicable.

VII. RECLAMATION MONITORING REQUIREMENTS

Not Applicable.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. South San Francisco Bay

The Discharger shall continue to participate in the Regional Monitoring Program for Trace Substances (RMP), which provides characterization of water, sediment and biota of the Estuary. The Discharger's participation and support of the RMP has been considered in establishing the receiving water monitoring requirements of this Order.

B. Renzel Marsh Pond

The Discharger shall monitor receiving waters in Renzel Marsh Pond and Matadero Creek in accordance with the following schedule:

Table E-5. Renzel Marsh Pond and Matadero Creek Monitoring Requirements

Parameter	Units	RSW-1B	RSW-2B	RSW-E1			RSW-MC
		Grab	Grab	Continuous	Grab	C-24	Grab
Flow Rate	MGD		---	1/Day	---	---	---
Enterococcus	cfu/100 mL	---	---	---	1/month	---	---
Dissolved Oxygen	mg/L	1/week (2)	1/week (2)	---	1/week	---	---
	% Saturation	1/week (2)	1/week (2)	---	1/week	---	1/month
Dissolved Sulfides (if DO<5.0 mg/L)	mg/L	---	---	---	1/week	---	1/month
pH(1), (2)	s.u.	1/week	1/week	---	1/week	---	1/month
Temperature(1), (2)	°C	1/week	1/week	---	1/week	---	1/month
Total Ammonia Nitrogen(1)	mg/L	1/week	1/week	---	1/week	---	1/month
Specific Conductance	umhos/cm	---	---	---	1/week	---	1/month
Salinity	ppt	---	---	---	1/month	---	1/month
Hardness	mg/L as $CaCO_3$	---	---	---	1/month	---	1/month
Turbidity	NTU	---	---	---	1/week	---	---
Arsenic (3)	µg/L	---	---	---	---	1/month	1/month
Cadmium (3)	µg/L	---	---	---	---	1/month	1/month
Chromium (3)	µg/L	---	---	---	---	1/month	1/month
Copper (3)	µg/L	---	---	---	---	1/month	1/month
Cyanide (3)	µg/L	---	---	---	1/month		1/month
Lead (3)	µg/L	---	---	---	---	1/month	1/month
Mercury (3)	µg/L	---	---	---	---	1/month	1/month
Nickel (3)	µg/L	---	---	---	---	1/month	1/month
Selenium (3)	µg/L	---	---	---	---	1/month	1/month
Silver (3)	µg/L	---	---	---	---	1/month	1/month
Zinc (3)	µg/L	---	---	---	---	1/month	1/month
PAHs	µg/L	---	---	---	1/year	---	---
Standard Observations (4)	µg/L	---	---	---	1/week	---	1/month
Remaining Priority Pollutants(5)	µg/L	---	---	---	1/2 years	---	1/5 years

Legends for Table E-5:

(1) Unit Abbreviations
- MGD = million gallons per day
- MG = million gallons
- mg/L = milligrams per liter
- µg/L = micrograms per liter
- s.u. = standard units
- NTU = Nephelometric turbidity units
- kg/d = kilograms per day
- °C = degrees Celsius
- cfu/100 mL = colony-forming units per 100 milliliters

(2) Sample Type Abbreviations
- Cont = measured continuously

Cont/D = measured continuously, and recorded and reported daily
Cont/H = measured continuously, and recorded and reported hourly
C-24 = 24-hour composite
Flow-through = continuously pumped sample during duration of toxicity test

(3) Sampling frequency
1/week = once per week
1/month = once per month
1/2 years = once every two years
1/5 years = once every five years

Footnotes for Table E-5:

(1) Monitoring shall be conducted in the afternoon, when pH and ammonia toxicity are at a maximum.

(2) Monitoring shall be conducted within one hour of dawn, when DO values are at a minimum.

(3) Reported MLs shall be no greater than those reported in effluent testing.

(4) All applicable observations, including rainfall.

(5) The organic pollutants identified by the California Toxics Rule at 40 CFR 131.38. For RSW-E1, the Discharger may only sample for volatile and semi-volatile pollutants (USEPA methods 624/625 pollutants).

IX. PRETREATMENT AND BIOSOLIDS/ASH MONITORING REQUIREMENTS

The Discharger shall comply with the pretreatment requirements specified in Table E-5 for influent (at Monitoring Location INF-001), effluent (at Monitoring Location EFF-001 or EFF-002), and ash monitoring.

Table E-6. Pretreatment and Biosolids Monitoring Requirements

Constituents	Sampling Frequency			Sample Type(5)	
	Influent INF-001	Effluent(3) EFF-001/002	Ash(4)	INF-001 & EFF-001/002	Ash(5d)
VOC	2/year	2/year	---	multiple grabs(5a)	grabs
BNA	2/year	2/year	---	multiple grabs(5a)	grabs
Metals(1)	1/month	1/month	2/year	24-hour composite(5b)	grabs
Hexavalent Chromium(2)	1/month	1/month	2/year	multiple grabs(5a)	grabs
Mercury	1/month	1/month	2/year	24-hour composite(5b,5c)	grabs
Cyanide	1/month	1/month	2/year	multiple grabs(5a)	grabs

Legends for Table E-6:

VOC = volatile organic compounds
BNA = base/neutrals and acids extractable organic compounds
N/A = not applicable
1/month = once per month
2/year = twice per year

Footnotes for Table E-6:

(1) The parameters are arsenic, cadmium, copper, lead, nickel, silver, zinc, and selenium.

(2) The Discharger may elect to run total chromium instead of hexavalent chromium. Sample collection for total chromium measurements may also use 24-hour composite sampling.

(3) Effluent monitoring conducted in accordance with Table E-4 can be used to satisfy these pretreatment monitoring requirements.

(4) Sample types:

a. Multiple grabs samples for VOC, BNA, hexavalent chromium, and cyanide, must be made up of a minimum of four (4) discrete grab samples, collected equally spaced over the course of a 24-hour period, with each grab analyzed separately and the results mathematically flow-weighted or with grab samples combined (volumetrically flow-weighted) prior to analysis.

b. 24-hour composite sample may be made up discrete grab samples and may be combined (volumetrically flow-weighted) prior to analysis, or they should be mathematically flow-weighted. If automatic compositor is used, 24-hour composite samples must be obtained through flow-proportioned composite sampling.

c. Automatic compositors are allowed 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. This direction is consistent with the Water Board's October 22, 1999, letter on this subject.

d. Biosolids collection should comply with those requirements for sludge monitoring specified in Attachment H, Appendix H-3 of this of the Order for sludge monitoring. The biosolids analyzed shall be a composite sample of the biosolids for final disposal. The Discharger shall also comply with biosolids monitoring requirements required by 40 CFR 503.

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

Modify Section F.4 as follows:

Self-Monitoring Reports

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

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Water Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices.

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

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

h. Reporting Data in Electronic Format

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

1) **Reporting Method:** The Discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS) and in the Progress Report letter dated December 17, 2000, or in a subsequently approved format that the Order has been modified to include.

2) **Monthly Reporting Requirements:** For each reporting month, an electronic SMR shall be submitted to the Regional Water Board in accordance with Section F.4 of SMP, Part A. However, until USEPA approves the electronic signature or other signature technologies, Dischargers that are using the ERS must submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, a violation report, and a receipt of the electronic transmittal.

3) **Annual Reporting Requirements:** Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting an annual report electronically, but a hard copy of the annual report shall be submitted according to Section F.5.b and F.5.c of SMP, Part A.

XI. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with SMP Part A (Attachment G), the federal Standard Provisions (Attachment D) and the Regional Water Board's Standard Provisions (Attachment G) related to monitoring, reporting, and recordkeeping.

B. Self Monitoring Reports (SMRs)

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

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through VIII. The Discharger shall submit monthly SMRs, including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Monthly SMRs shall be due 30 days after the end of each calendar month. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR. Annual SMRs shall be due by February 1 of each year, covering the

previous calendar year. The report shall contain the items described in the Regional Water Board's Standard Provisions and SMP Part A (Attachment G).

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

Table E-7. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
Continuous	Permit effective date	All
1/hour	Permit effective date	Every hour on the hour
1/day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.
5/week	Permit effective date	Sunday through Saturday
1/week	Permit effective date	Sunday through Saturday
1/month	Permit effective date	First day of calendar month through last day of calendar month
1/quarter	Permit effective date	Once during January 1 – March 31, April 1- June 30, July 1 – September 30, and October 1 – December 31
1/2 years	Permit effective date	Once during wet season (typically November 1 through April 30), once during dry season (typically May 1 through October 31), alternate between two sampling events.
1/5 years	Permit effective date	Once during permit term

4. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

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

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

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

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

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

e. Compliance Determination. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above, Attachment A, and Table E-1, priority pollutant MLs of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

f. When determining compliance with an AMEL (or average weekly effluent limit) for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

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

The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall (1) clearly identify violations of the WDRs, (2) discuss corrective actions taken or planned, and (3) specify the time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

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

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

C. Discharge Monitoring Reports (DMRs)

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

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

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

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

D. Other Reports

In the first monthly SMR following the respective due dates, the Discharger shall report the results of any special studies, monitoring, and reporting required by Section VI.C.2 (Special Studies, Technical Reports, and Additional Monitoring Requirements) of this Order. The Discharger shall include a report of progress towards meeting compliance schedules established by Section VI.C.7 of this Order.

APPENDIX E-1

CHRONIC TOXICITY
DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

I. Definition of Terms

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

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

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

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

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or

2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.

B. Design of the screening phase shall, at a minimum, consist of the following elements:

1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables, or as approved by the Executive Officer.

2. Two stages:
   a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Appendix E-2 (attached).

b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.

3. Appropriate controls.

4. Concurrent reference toxicant tests.

5. Dilution series with a control and five effluent concentrations (including 100% effluent) and using a dilution factor ≥ 0.5.

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

APPENDIX E-2

SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

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	(Mysidopsis bahia)	Percent survival; growth	7 days	3
Shrimp	(Holmesimysis costata)	Percent survival; growth	7 days	2
Topsmelt	(Atherinops affinis)	Percent survival; growth	7 days	2
Silversides	(Menidia beryllina)	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

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).

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

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay[2]	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater[1] Marine/Estuarine	 0 4	 1 or 2 3 or 4	 3 0
Total number of tests	4	5	3

1. The freshwater species may be substituted with marine species if:

   a. The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or

   b. The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

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

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

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 438011001
CIWQS Place ID	247457
Discharger	City of Palo Alto
Name of Facility	Palo Alto Regional Water Quality Control Plant (Plant) and City of Palo Alto's sewage collection system
Facility Address	2501 Embarcadero Way Palo Alto CA 94303 Santa Clara County
Facility Contact, Title, Phone	Phil Bobel, Environmental Compliance Division Manager, (650) 329-2598
Authorized Person to Sign and Submit Reports	Frank Benest, City Manager, (650) 329-2563
Mailing Address	Same as Facility Address
Billing Address	Same as Facility Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	Yes, under Order No. 93-160
Mercury Discharge Requirements	Yes, under Order No. R2-2007-0077
Facility Permitted Flow	39 million gallons per day (MGD) (average dry weather flow design capacity with full tertiary treatment)
Facility Design Flow	39 MGD (average dry weather flow design capacity with full tertiary treatment) 80 MGD (peak wet weather flow design capacity with full secondary treatment)
Watershed	Santa Clara Hydrologic Unit
Receiving Waters	South San Francisco Bay and Matadero Creek
Receiving Water Type	Marine/Estuarine
Service Areas	Cities of Los Altos, Los Altos Hills, Palo Alto, and Mountain View; East Palo Sanitary District; and the unincorporated area of the Stanford University Campus
Service Area Population	228,500

A. The City of Palo Alto owns and operates the Palo Alto Regional Water Quality Control Plant (RWQCP, Plant) and the City of Palo Alto's sewage collection system (collectively the facility). The facility provides tertiary treatment of wastewater collected from its service areas and discharges the majority of treated effluent to South San Francisco Bay via an unnamed channel.

A small fraction of the discharge is diverted to Matadero Creek via Renzel Marsh Pond, and Matadero Creek flows to South San Francisco Bay. Ownership and operation of the Plant and the collection system, including satellite collection systems, are further described in Fact Sheet Section II, Facility Description.

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

B. The discharge of treated wastewater from the Plant to South San Francisco Bay and Matadero Creek, both of which are waters of the United States, has been regulated by Order No. R2-2003-0078 (previous Order) and NPDES Permit No. CA0037834, which became effective on November 1, 2003, and expired on September 30, 2008.

C. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its Waste Discharge Requirements (WDRs) and NPDES permit dated March 27, 2008, and a supplemental on May 1, 2008. The application was deemed complete, and the previous Order has been administratively extended.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

1. Wastewater Treatment Processes

The Discharger owns and operates the Plant, which provides tertiary treatment of domestic, commercial, and industrial wastewater collected from its service areas as indicated in Table F-1. The Discharger's current service area population is approximately 228,500.

Wastewater treatment processes at the Plant include screening and grit removal, primary sedimentation, fixed film roughing filters for carbonaceous biochemical oxygen demand (CBOD) reduction, activated sludge for nitrification, secondary clarification, filtration, disinfection (chloramination), and dechlorination (sodium bisulfite). Frequent filter backwashing to clean the filter media is a routine part of filter operation. Filter backwash water is managed as described below under Filtration Process. The Plant is designed to route primary treated wastewater in excess of the fixed film reactors' design capacity (40 MGD) around the reactors during extreme wet weather flow events, and to recombine it with reactor effluent prior to activated sludge treatment. Similarly, activated sludge effluent in excess of the dual media filtration design capacity (40 MGD) can be routed around these filters during wet weather events, and be recombined with filter effluent prior to disinfection.

Preliminary Treatment. Preliminary treatment consists of screens followed by grit removal.

Primary Treatment. Following preliminary treatment, wastewater is pumped into rectangular primary clarifiers for the removal of floatable and settled material.

Biological Treatment. All wastewater receives biological treatment in a two step process, which utilizes fixed film growth reactors to reduce concentrations of CBOD, followed by activated sludge treatment. Primary treated effluent flows up to 40 MGD are treated in the

fixed film reactors, and flows in excess of 40 MGD are routed around the reactors and blended with reactor effluent prior to activated sludge treatment. Removal of ammonia (nitrification) is achieved in the activated sludge aeration basins. Mixed liquor from the aeration basins flows to secondary clarifiers for solids removal via settling. The majority of settled solids are returned (return activated sludge) to the aeration basins, and waste activated sludge is treated as described below, under Solids Management.

Filtration Process. Following biological treatment, the wastewater undergoes tertiary treatment via filtration. There are ten parallel filters. Filter backwash water is either returned to the primary sedimentation basins or to the sludge thickener facility. The design capacity of the dual media filters is 40 MGD, and any flows in excess of this figure are routed around the filters and recombined with filter effluent prior to disinfection.

Disinfection. Chlorine and ammonia are metered into the filter effluent, to produce chloramines for disinfection, which is accomplished in the chlorine contact pipes and basins. Disinfectant contact time varies with flow, but is typically 30 to 45 minutes. As the effluent leaves the contact basins, its chlorinamine residual is measured and an appropriate amount of sodium bisulfite is added to neutralize the disinfectant residual. Dechlorinated effluent is discharged to South San Francisco Bay via a manmade channel or to Matadero Creek via Renzel Marsh Pond. A portion of the chlorinated effluent is diverted for further treatment for reclamation use, as described below.

Solids Management. Solids from primary sedimentation tanks, aeration tanks, dual media filter backwash, and reclamation filter backwash are sent to the sludge thickening facilities; gravity thickened; and dewatered by belt presses. Thickened and dewatered solids are incinerated in one of two identical multiple hearth incinerators, and the ash is hauled offsite to a hazardous waste landfill. Belt press filtrate, scrubber water and other flows from the incinerator building totaling approximately 1 MGD are returned to the Plant headworks.

2. City of Palo Alto Collection System

The City of Palo Alto's collection system is a 100% separate sanitary sewer. It consists of approximately 207 miles of pipes ranging from 4 inches to 72 inches in diameter, and one small lift station.

3. Satellite Collection Systems

The Plant serves multiple cities and wastewater districts as indicated in Table F-1 above. In addition to the City of Palo Alto's collection system, wastewater is conveyed to the Plant by several satellite collection systems serving Mountain View, Los Altos, Los Altos Hills, the East Palo Alto Sanitation District, and Stanford University. The Cities of Mountain View and Los Altos entered into a Joint Sewer Agreement with the City of Palo Alto in 1968, with the remaining communities serving as sub-partners in other agreements.

Each satellite collection system is responsible for an ongoing program of maintenance and capital improvements for sewer lines and pump stations within its respective jurisdiction in order to ensure adequate capacity and reliability of the collection system. The responsibilities include managing overflows, controlling inflow and infiltration (I&I) and implementing

collection system maintenance. Each satellite collection system must ensure that its wastewater does not adversely impact the Discharger's treatment plant.

4. Reclamation

Approximately 0.25 MGD of chloraminated, tertiary effluent undergoes additional filtration and chlorination for on- and off-site use for irrigation, construction dust suppression, and the City of Palo Alto Duck Pond.

5. Storm Water Discharges

All storm water from within the Plant is directed to the headworks of the Plant; therefore, this Order regulates the discharges of storm water that originate on the grounds of the Plant, and coverage under the Statewide permit for discharges of storm water associated with industrial activities (NPDES General Permit No. CAS000001) is not required.

B. Discharge Point and Receiving Water

The location of the discharge points and the receiving waters are shown in Table F-2 below.

Table F-2. Outfall Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary treated municipal wastewater	37º 27′ 30″ N	122º 06′ 37″ W	South San Francisco Bay
002	Tertiary treated municipal wastewater	37º 26′ 30″ N	122º 06′ 45″ W	Matadero Creek

South San Francisco Bay is a unique and sensitive portion of the San Francisco Bay Estuary, in part due to the freshwater inflow being lower there than in the greater portion of San Francisco Bay. Tributaries to South San Francisco Bay are small in number and size. It is characterized by higher, more uniform salinities and is generally shallow, except for a deep central channel. Surrounding South San Francisco Bay is an extensive network of tidal mudflats, tidal sloughs, coastal salt marshes, diked salt marshes, brackish water marshes, salt ponds, and freshwater marshes.

The discharge to Matadero Creek is via Renzel Marsh Pond, a 15-acre freshwater pond and constructed wetlands that the Discharger created in 1992 as an environmental enhancement project. The goal of the restoration project was to bring saltwater to a portion of an area leased to ship-to-shore radio operators, known as the "ITT property." The ITT property was known to contain salt marsh harvest mouse habitat, but the habitat was deteriorating because the pickleweed was cut off from saltwater inflow. Negotiations with the California Coastal Conservancy, the Regional Water Board, Fish and Game, and the U.S. Fish and Wildlife Service resulted in the need to also bring fresh water to the area so that the fresh and salt water would balance as both flowed on to Matadero Creek. The agencies determined that this combination of fresh and saltwater was needed to prevent local salinity changes in the Matadero Creek portion of the Palo Alto Flooding Basin. It was therefore decided that treated wastewater should be used to construct a freshwater pond on the southwestern side of the ITT property. This area had been

dry prior to the project. A basin was excavated to provide a resting habitat for migratory and local birds. This bird resting pond was designed and constructed to avoid pickleweed saltwater habitat areas. No human uses were envisioned or allowed because bird nesting was anticipated adjacent to the pond. No fish or other wildlife was placed in the pond because fish habitat was not envisioned. Treated wastewater is the only flow to the pond. The height of the constructed berm around the pond prevents any storm water flow into it. The pond flows continuously by gravity through a pipe to Matadero Creek at a point in the Palo Alto Flooding Basin that is maintained at minus two feet below mean sea level. Therefore, this portion of Matadero Creek always contains a mixture of salt and fresh water at this level.

C. Summary of Previous Requirements and Self-Monitoring Data

Effluent limitations contained in the previous Order for discharges to South San Francisco Bay and Matadero Creek and representative monitoring data from the term of the previous Order are presented in the following tables.

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

Parameter	(units)	Effluent Limitations			Monitoring Data (1/2003-1/2008)		
		Monthly Average	Weekly Average	Daily Maximum	Highest Monthly Average	Highest Weekly Average	Highest Daily Discharge
$CBOD_5$[(1)]	mg/L	10	---	20	3.4	---	5.0
TSS	mg/L	10	---	20	2.0	---	5.7
pH	standard units	6.5 – 8.5			Minimum – 6.5 Maximum – 7.7		
Oil and Grease	mg/L	5	---	10	<0.8	---	<0.8
Enterococci bacteria	colonies/ 100 mL	35[(2)]	---	276[(3)]	2[(2)]	---	53[(3)]
Total Chlorine Residual	mg/L	---	---	0.0 [(4)]	---	---	0
Settleable Matter	mL/L-hr.	0.1	---	0.2	---	---	<0.1
Turbidity	NTU	---	---	10	---	---	8.8
Acute Toxicity	% survival	[(4)]			Minimum 11-sample median – 100% Minimum 11-sample 90th percentile – 100%		
Ammonia-N	mg/L	3	---	8	1.94	---	4.4

Footnotes for Table F-3:

"<" Analyte not detected in effluent; value given is the MDL as reported by the analytical laboratory.

(1) The Discharger monitored and reported this parameter as BOD.

(2) As a 30-day geometric mean.

(3) As a single sample maximum.

(4) Requirement defined as below the limit of detection in standard test methods defined in the latest USEPA approved edition of *Standard Methods for the Examination of Water and Wastewater*.

(5) The limits are an 11-sample median value of not less than 90 percent survival and an 11-sample 90th percentile value of not less than 70 percent survival.

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

Parameter	Units	Final Limits		Interim Limits		Monitoring Data (From 1/2003 to 1/2008)
		Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Highest Daily Concentration
Copper	µg/L	17.4	11.8	---	---	12.8
Mercury	µg/L	---	---	---	0.023	0.012
Nickel	µg/L	32.2	25.6	---	---	4.5
Cyanide	µg/L	---	---	32	---	7.3
4,4'-DDE	µg/L	---	---	0.05	---	<0.003
Chlorodibromomethane	µg/L	---	---	86	---	56
Dieldrin	µg/L	---	---	0.01	---	<0.002
Heptachlor Epoxide	µg/L	---	---	0.01	---	<0.002
Benzo(b)Fluoranthene	µg/L	---	---	10.0	---	<0.0095
Indeno(1,2,3-cd)Pyrene	µg/L	---	---	0.05	---	<0.0095

"<" Analyte not detected in effluent; value given is the minimum detection limit (MDL) as reported by the analytical laboratory.

D. Compliance Summary

1. **Compliance with Previous Numeric Effluent Limits.** There were no exceedances of numeric effluent limits during the term of the previous Order. There were four exceedances of the single sample chronic toxicity monitoring trigger of 2.0 TUc, and three exceedances of the three sample median chronic toxicity trigger of 1.0 TUc, as reported in Discharger monitoring summary data from November 2003 through January 2008.

2. **Compliance with Previous Provisions.** A list of special activities required by the previous Order and the status of those requirements are shown in Table F-5, below.

Table F-5. Compliance with Previous Order Provisions

Provision Number	Requirement	Status of Completion
E.2	Chlorodibromomethane Compliance Schedule	Compliance Attainability Evaluation submitted August 2005, Workplan submitted December 21, 2006, and final annual report submitted February 28, 2008
E.3	Cyanide Compliance Schedule and Cyanide SSO Study	Progress reports have been submitted annually by January 31
E.4	Mercury Special Study – Advanced Mercury Source Control Study	Study Workplan submitted November 2003, annual reports submitted February 2004 – 2006, and final report submitted December 2007
E.7	Pollution Prevention and Minimization Program (PMP)	Reports have been submitted annually by February 28
E.9	Copper-Nickel Action Plans	Reports have been submitted annually by February 28
E.14	Operations and Maintenance Manual/ Operating Procedures	Reports have been submitted annually by February 28
E.15	Contingency Plan Update	Reports have been submitted annually by June 30
E.16	Reliability Report Updates	Updates submitted as needed.
E.17	303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review	Letter was submitted January 28, 2008, confirming participation in BACWA

E. Planned Changes

The Discharger is in initial stages of planning to replace chloramine disinfection with a UV disinfection system. The improvement project is estimated to be completed and operational by November 2010. In addition, the Mountain View pipeline project is expected to be completed in April 2009, increasing reclaimed water utilization by up to 3 MGD.

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 section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (CWC or Water Code, commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Regulations, Policies, and Plans

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

   Table F-6 identifies existing and potential beneficial uses assigned to South San Francisco Bay and Matadero Creek.

   State Water Board Resolution No. 88-63 establishes state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Because of the tidal and marine influence on the unnamed channel receiving water for the majority of the discharge, total dissolved solids (TDS) levels in the channel exceed 3,000 milligrams per liter (mg/L). TDS levels in Matadero Creek are also expected to exceed 3,000 mg/L. Both the unnamed channel and Matadero Creek, therefore, meet an exception to Resolution No. 88-63, and the MUN designation does not apply to the receiving waters.

   Although South San Francisco Bay is listed to support shellfish harvesting, according to the Discharger's submittal dated July 9, 2008, there is no shellfish harvesting in the vicinity of

the discharge outfall 001. The wetlands near the outfall are largely inaccessible and unsuitable for shellfish harvesting. The outfall is surrounded by the Palo Alto Baylands Nature Preserve; public shellfish harvesting for consumption is not allowed under any circumstances on the extensive shoreline of the preserve. The practice would be disruptive to the ecosystem, and would therefore be contradictory to the concept of a nature preserve. Furthermore, representatives from the California Department of Fish and Game have stated that no shellfish harvesting occurs in the San Francisco Bay south of Foster City (City of San Jose, *Alternative Effluent Bacteriological Standards Pilot Study*, 2003). In addition, a Senior Ranger with the Palo Alto Baylands Nature Preserve stated in a June 12, 2008, phone conversation with the Discharger that the only shellfish harvesting occurring in the area is that performed by Stanford University and USGS staff for specific scientific surveys (July 9, 2008, City of Palo Alto Evaluation of Bacteria Effluent Limits).

Table F-6. Beneficial Uses of South San Francisco Bay and Matadero Creek

Discharge Point	Receiving Water Name	Existing and Potential Beneficial Uses
001	South San Francisco Bay	Industrial Service Supply (IND) Ocean, 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) Contact Recreation (REC1) Non-contact Water Recreation (REC2) Navigation (NAV)
002	Matadero Creek	Cold Freshwater Habitat (COLD) Fish Migration (MIGR) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2)

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

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

pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (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.** 40 CFR 131.12 requires that the 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. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

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

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

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

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

TMDLs will establish WLAs for point sources and load allocations (LAs) for non-point sources, and will be established to achieve the WQS for impaired waterbodies. The discharge of mercury from the Plant is regulated by the Regional Water Board Order No. R2-2007-0077, which implements the adopted mercury TMDL and contains monitoring and reporting requirements.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the 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 40 CFR: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative WQC to protect the beneficial uses of the receiving water. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established.

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

A. Discharge Prohibitions

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

2. **Discharge Prohibition III.B (No bypass except under the conditions at 40 CFR 122.41(m)(4)(i)(A)(B)-(C)):** This prohibition is based on 40 CFR 122.41(m)(4) (see Federal Standard Provisions, section G, Attachment D) and is retained from the previous Order. This provision grants bypass around fixed film reactors or dual media filters during wet weather when the primary effluent flow exceeds the fixed film reactors' capacity of 40 MGD or when the activated sludge treatment units' effluent flow exceeds the filter capacity of 40 MGD prior to discharge at Discharge Points 001 and 002 provided that (1) the discharge complies with the effluent and receiving water limitations contained in this Order, and (2) the Discharger operates the facility as designed and in accordance with the Operation & Maintenance Manual developed for the Plant. This means that the Discharger is to optimize storage and use of equalization units and fully utilize the advanced treatment units. Bypassing these units does not prevent the Plant from providing full secondary treatment.

3. **Discharge Prohibition III.C (The average dry weather effluent flow shall not exceed 39 MGD):** Exceedance of the treatment plant's average dry weather effluent flow design capacity may result in lowering the reliability of achieving compliance with water quality requirements. Upon Plant expansion in 1988, a reliability/stress test certified the dry weather treatment capacity to be 39 MGD. This prohibition is meant to ensure effective wastewater treatment by limiting flows to the Plant's design treatment capability. The average dry weather effluent flow is determined as the average effluent flow between the months of June and October.

4. **Discharge Prohibition III.D (No sanitary sewer overflows to waters of the United States).** Discharge Prohibition No. 15 from Basin Plan Table 4-1 and the CWA prohibit the discharge of wastewater to surface waters except as authorized under an NPDES permit. POTWs must achieve secondary treatment, at a minimum, and any more stringent limitations that are necessary to achieve WQS [33 U.S.C. § 1311 (b)(1)(B and C)]. Therefore, a sanitary

sewer overflow that results in the discharge of raw sewage, or sewage not meeting secondary treatment requirements, is prohibited under the CWA and the Basin Plan.

B. Exceptions to Basin Plan Prohibitions

Discharge prohibition 1 in Table 4-1 of the Basin Plan states that it shall be prohibited to discharge:

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

Basin Plan section 4.2 provides for exceptions to this prohibition in the following circumstances:

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

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

- It can be demonstrated that net environmental benefits will be derived as a result of the discharge; or

- A discharge is approved as part of a groundwater clean-up project.

The treated wastewater discharges from the San Jose/Santa Clara, Palo Alto, and Sunnyvale wastewater treatment plants are discharged to confined waters and do not receive a minimum initial dilution of 10:1. In 1973, these dischargers formed the South Bay Dischargers Authority to jointly consider relocating their outfalls to a location north of the Dumbarton Bridge, but instead, based on studies they conducted between 1981 through 1986, they concluded that their discharges provided a net environmental benefit.

At the same time, the Regional Water Board amended the Basin Plan to establish several new WQOs. Due to the unique hydrodynamic environment of the South Bay, however, the 1986 Basin Plan exempted the South Bay from the new WQOs, instead calling for the development of site-specific objectives (SSOs).

In 1988, the Regional Water Board reissued the Sunnyvale and Palo Alto permits (Order No. 88-176 and Order No. 88-175), concurring that these discharges provided a net environmental benefit. It therefore granted exceptions to the Basin Plan discharge prohibition provided that the dischargers would conduct studies addressing salt marsh conversion, development of SSOs and effluent limitations for metals, ammonia removal, and avian botulism control. However, the Regional Water Board concluded that discharges from the San Jose/Santa Clara wastewater treatment plant did not provide a net environmental benefit. Nevertheless, the Regional Water Board found that the discharge could provide a net environmental benefit under specific

circumstances, and reissued the NPDES permit (Order No. 89-012) for the San Jose/Santa Clara facility.

Interested parties objected to all three permits and petitioned the State Water Board for review. The State Water Board responded in 1990 through Order No. WQ 90-5. It concluded that all three dischargers had failed to demonstrate a net environmental benefit. Specifically, nutrient loading in South San Francisco Bay was a problem, avian botulism was harming wildlife and estuarine habitat, and metals discharges were potentially contributing to San Francisco Bay impairment.

Through Order No. WQ 90-5, the State Water Board acknowledged that relocation of the discharges north of the Dumbarton Bridge was not economically or environmentally sound. The State Water Board "strongly encouraged" the Regional Water Board and the South Bay Dischargers Authority to pursue wastewater reclamation projects as a means to reduce discharges to San Francisco Bay, and it also concluded that exceptions to the Basin Plan discharge prohibitions could be granted on the basis of "equivalent protection" (i.e., protection equivalent to relocating the discharges to a location north of the Dumbarton Bridge), provided that certain conditions were met. It stated that exceptions could be granted if (a) the discharge permits were to include numeric WQBELs for toxic pollutants, (b) the dischargers (San Jose and Sunnyvale) were to continue efforts to control avian botulism; and (c) the dischargers (San Jose in particular) were to properly protect threatened and endangered species. (Attachment I provides a chronological description of the actions taken by the State and Regional Water Boards and the City of Palo Alto related to the requirements of Order No. 90-5. The summary also clarifies the origin of some provisions that appear in this Order.)

The following is a summary of the Discharger's past and on-going efforts in complying with State Water Board Order No. 90-5:

(1) **Heavy Metals Discharge.** Concentrations of heavy metals in the Plant effluent have met all applicable water quality-based effluent limits. With the exception of ambient mercury levels, there is no reasonable potential to exceed WQOs for these metals based on Plant discharge and ambient concentrations.

The Discharger's advanced treatment unit (dual media filtration), pretreatment program, and pollution prevention program result in effluent metals concentrations that are lower than any of the applicable WQOs. Advanced treatment began in 1980, while the pretreatment and pollution prevention programs commenced in 1981 and 1990, respectively. The success of these programs is illustrated by the Discharger's effluent loading of copper to San Francisco Bay, which has decreased from approximately 13,000 pounds in 1979 to 590 pounds in 2008. The Discharger is also a key contributor of financial and staff resources to regional pollution prevention programs that result in decreased pollutant loadings to San Francisco Bay. The discharge of oxygen depleting pollutants has also declined substantially since the Discharger constructed an additional secondary treatment stage (fixed film reactors) and achieved full nitrification in 1980.

The Discharger will maintain its current performance and monitoring program for both effluent and receiving water to ensure that no degradation will occur.

(2) **Avian botulism control**. The Cities of San Jose/Santa Clara and Sunnyvale maintain an avian botulism control program and will continue to do avian botulism surveys as required by their reissued permits.

(3) **Wetland Mitigation and Endangered Species Protection.** The Cities of San Jose/Santa Clara met all Order No. 90-5 requirements by 2003 by providing $650,000 to the Peninsula Open Space Trust to assist in Bair Island restoration. In addition, those Cities have completed several endangered species surveys as required by their permits.

To qualify for an exception to the Basin Plan's discharge prohibition, the Discharger must meet at least one of the conditions specified above. The Discharger meets several of the conditions specified above. The Regional Water Board finds that moving the Discharger's outfall to deep water would constitute an inordinate burden relative to beneficial uses protected. The Discharger provides advanced secondary treatment, a higher level of treatment than normally required of most municipal wastewater treatment plants, which provides an equivalent level of environmental protection. Furthermore, although not required by Order 90-5 or its previous permits, the Discharger has been implementing the Renzel Marsh Pond project to enhance salt marsh harvest mouse habitat. As described in a finding under II.B.2, above, the discharge to Matadero Creek via Renzel Marsh Pond started in 1992 and is an environmental project that aims to enhance marsh harvest mouse habitat. The pond and constructed wetlands also provide a resting habitat for migratory and local birds.

The exception to the Basin Plan prohibition is also justified since the Discharger maintains an aggressive reclamation program with multiple components:

- Recycled water is provided to the Palo Alto Golf Course and Palo Alto's Greer Park for irrigation, to trucks for uses such as construction site dust suppression, and to the Palo Alto duck pond. In 2008, these uses diverted 129 million gallons from discharge to San Francisco Bay.

- In April 2009, the Discharger will complete a new recycled water pipeline (the Mountain View pipeline) that will serve the North of Bayshore area of Mountain View. The Mountain View pipeline will provide up to 3 MGD of recycled water for irrigation use, and potentially for dual plumbing and industrial cooling uses.

- Coincident with construction of the Mountain View pipeline, the Discharger is upgrading its recycled water treatment facilities by adding new chlorine contact basins, increasing storage capacity, and installing new recycled water pumping facilities.

- In addition to the existing uses and the new Mountain View pipeline, the Discharger has completed a Market Survey Report and a Facility Plan for a potential new Palo Alto pipeline that would primarily serve the Stanford Research Park business area and a number of City parks. The Discharger is completing environmental review for the Palo Alto pipeline, and is maintaining an aggressive schedule for obtaining the necessary approvals in order to take advantage of funding opportunities made available by the American Recovery and Reinvestment Act of 2009.

- The Discharger adopted a City of Palo Alto recycled water ordinance in 2008 that mandates the use of recycled water for irrigation when available, and requires new and remodeled facilities to plan for recycled water use for irrigation and, under specific circumstances, to install dual plumbing within buildings that will allow for future recycled water use for toilet and urinal flushing.

- The Discharger's reclamation program also includes its discharge of treated wastewater to the Renzel Marsh Pond as described in a finding under Section II.B above. The ITT property/Renzel Marsh Pond project is both an endangered species protection effort and a component of the Discharger's reclamation program.

In addition, this permit requires the Discharger to continue its reclamation programs (Provision VI.C.6.c).

Because the Discharger has met all the historical requirements of both the State and Regional Water Boards for obtaining an exception to the Basin Plan prohibition, and continues to meet these requirements as discussed above, the Regional Water Board continues to grant an exception to Basin Plan discharge prohibition 1 (Table 4-1).

C. Effluent Limitations for Conventional and Non-Conventional Pollutants

1. Scope and Authority for Technology-Based Effluent Limitations

CWA section 301(b) and 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable WQS. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR 133. These Secondary Treatment Regulations include the following minimum requirements for POTWs.

Table F-7. Secondary Treatment Requirements

Parameters	30-Day Average	7-Day Average
BOD_5 (1)	30 mg/L	45 mg/L
$CBOD_5$ (1) (2)	25 mg/L	40 mg/L
TSS (1)	30 mg/L	45 mg/L
pH	6.0 – 9.0	

Footnotes for Table F-7:

(1) The 30-day average percent removal, by concentration, shall not be less than 85 percent.

(2) At the option of the permitting authority, these effluent limitations for $CBOD_5$ may be substituted for limitations for BOD_5.

San Francisco Bay south of the Dumbarton Bridge is a unique water body, with a limited capacity to assimilate wastewater. Due to limited circulation, wastewater discharges to this area may take several months to reach the ocean. In addition, the unique wetlands and ambient conditions of South San Francisco Bay sometimes result in natural dissolved oxygen levels that are lower than the Basin Plan's receiving water limit of a minimum of 5.0 mg/L. The limited assimilative capacity of South San Francisco Bay necessitates effluent BOD and TSS limitations that are more restrictive than those required for secondary treatment.

The Discharger constructed advanced waste treatment facilities in the late 1970's and has consistently met limits on conventional pollutants that are more stringent than the secondary treatment standards.

2. Applicable Effluent Limitations

This Order retains the following effluent limitations for conventional and non-conventional pollutants, applicable to Discharge Points 001 and 002 from the previous Order.

Table F-8. Summary of Effluent Limitations for Conventional and Non-Conventional Pollutants

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
$CBOD_5$	mg/L	10	---	20	---	---
TSS	mg/L	10	---	20	---	---
$CBOD_5$ and TSS	%	85	---	---	---	---
Oil and Grease	mg/L	5	---	10	---	---
pH	s.u.	---	---	---	6.5	8.5
Total Chlorine Residual	mg/L	---	---	---	---	0.0[(1)]
Turbidity	NTU	---	---	---	---	10
Enterococcus Bacteria	Colonies/ 100 mL	35[(2)]	---	---	---	---

Footnotes for Table F-8:

(1) Requirement defined as below the limit of detection in standard test methods defined in the latest USEPA approved edition of Standard Methods for the Examination of Water and Wastewater. The Discharger may elect to use a continuous on-line monitoring system for measuring flow, chlorine, and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. Convincing evidence must be provided to Regional Water Board staff to conclude these false positive exceedances are not violations of this permit.

(2) Expressed as a 30-day geometric mean.

This Order does not retain the previous Order's technology-based effluent limitations for settleable matter because Basin Plan Table 4-2 no longer requires them for POTWs. The level of secondary treatment assures removal of settleable solids to acceptably low levels. This Order also does not retain the previous Order's performance-based effluent limitations for total ammonia because total ammonia is now treated as a toxic pollutant. See section IV.D.4.d.(6) for further discussion of the new WQBELs for ammonia.

a. $CBOD_5$ and TSS. Effluent limitations for $CBOD_5$ and TSS, including the 85 percent removal requirement are unchanged from the previous Order and are technologically feasible standards for the advanced wastewater treatment technologies used at the Plant. 40 CFR 122.45(d) specifies that discharge limitations for POTWs shall be stated as average weekly limitations and average monthly limitations, unless impracticable. Expressing effluent limitations for $CBOD_5$ and TSS as maximum daily limitations instead of average weekly limitations results in more stringent limits, as effluent

variability is not averaged out over a period of a week. Self-monitoring data show the Discharger has been able to consistently comply with these $CBOD_5$ and TSS effluent limits.

b. Oil and Grease. The effluent limitations for oil and grease are technology-based and are unchanged from the previous Order. These limitations are based on Basin Plan Table 4-2 for shallow water dischargers. Self-monitoring data show the Discharger has been able to consistently comply with these oil and grease effluent limits.

c. pH. The effluent limitations for pH are water quality-based and are unchanged from the previous Order. These limitations are based on Basin Plan Table 4-2 for shallow water dischargers. Self-monitoring data show the Discharger has been able to consistently comply with these pH effluent limits.

d. Total chlorine residual. The effluent limitation for total chlorine residual is water-quality-based and is based on Basin Plan Table 4-2 and is unchanged from the previous Order. The Discharger may use a continuous on-line monitoring system to measure flow, chlorine, and sodium bisulfite concentration and dosage to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positives of chlorine residual exceedances are not violations of the limitation.

The Discharger will need to report the maximum residual chlorine concentration observed following dechlorination on a daily basis unless the Discharger requests to use the chlorine residual reporting strategy as allowed in the Regional Water Board's October 19, 2004, letter and the Discharger complies with the conditions listed in the letter as detailed below. The Discharger may evaluate compliance with this effluent limit by recording discrete readings from continuous monitoring equipment every hour on the hour or by collecting grab samples every hour, for a total of 24 readings or samples per day, if the following conditions are met: (1) The Discharger shall retain continuous monitoring readings for at least three years; (2) The Discharger shall acknowledge in writing that Regional Water Board reserves the right to use all other continuous monitoring data for discretionary enforcement; (3) The Discharger must provide in writing the brand name(s), model number(s), and serial number(s) of the equipment used to continuously monitor dechlorinated final effluent chlorine residual. If the identified equipment is replaced, the Discharger shall provide the Regional Water Board in writing, within 72 hours of the successful startup of the new equipment, the new equipment's brand name, model number, and serial number. The written notification identified in items 1 through 3 shall be in the form of a letter addressed to the Regional Water Board's Executive Officer with a certification statement as listed in the October 19, 2004, Regional Water Board letter re: Chlorine Compliance Strategy for Dischargers Using Continuous Monitoring Devices.

Effluent data show the Discharger can comply with this effluent limit. Self-monitoring data show the Discharger has been able to consistently comply with the total chlorine residual effluent limit.

e. Turbidity. The effluent limitation for turbidity is unchanged from the previous Order and is representative of adequate and reliable tertiary level wastewater treatment. This

limitation is a technologically feasible standard for the advanced wastewater treatment technologies in use at the Plant. Self-monitoring data show the Discharger has been able to consistently comply with this turbidity effluent limit.

f. Enterococcus bacteria. The effluent limitation for enterococcus bacteria is unchanged from the previous Order except the single sample maximum limit of 276 colonies per 100 mL is not retained to be consistent with recently adopted NPDES permits and USEPA criteria. Basin Plan Table 3-2 cites the 30-day geometric mean enterococcus bacteria limit, which is based on the USEPA criteria at 40 CFR 131.41 for coastal recreational waters, including costal estuaries, in California. These water quality criteria became effective on December 16, 2004 [69 Fed. Register 67218 (November 16, 2006)].

Although USEPA also established single sample maximum criteria for enterococci bacteria, this Order implements only the geometric mean criterion of 35 colonies per 100 milliliters as an effluent limitation. When these water quality criteria were promulgated, USEPA expected that the single sample maximum values would be used for making beach notification and beach closure decisions. "Other than in the beach notification and closure decision context, the geometric mean is the more relevant value for assuring that appropriate actions are taken to protect and improve water quality because it is a more reliable measure, being less subject to random variation …." [69 Fed Reg. 67224 (November 16, 2004)]

The removal of the daily maximum bacteria limit is consistent with the exception to the Clean Water Act's backsliding provisions, expressed at CWA 402(o)(2)(B)(ii) for technical mistakes.

The Discharger has previously conducted a study demonstrating that effluent limitations for enterococcus bacteria are protective of beneficial uses of the receiving water. The Discharger's submittal dated July 9, 2008, indicates that shellfish harvesting does not occur in the vicinity of the discharge. The nearest historic shellfish harvesting area is at the Foster City shellfish beds. In addition, according to a January 1998 South Bayside Sewage Authority's (SBSA's) study, titled *Chlorination Reduction Evaluation and Recommendations for Modified Effluent Coliform Limitations,* shoreline fecal coliform concentrations were unrelated to SBSA's effluent concentrations. Fecal coliform monitoring conducted by City of San Mateo during SBSA's study showed no relationship between either the City of San Mateo's sewage discharges or SBSA's effluent fecal coliform concentrations and shoreline fecal coliform concentrations near Foster City, where the large presence of birds may be the greatest source of coliform bacteria. Because there is no relationship between SBSA's discharge and waters with known shellfish harvesting, and the Discharger's outfall is much farther south of SBSA's discharge outfall, it is not necessary to establish fecal coliform effluent limits for this discharge to protect shellfish harvesting in South San Francisco Bay.

D. WQBELs

WQBELs have been derived to implement WQOs that protect beneficial uses. Both the beneficial uses and the WQOs have been approved pursuant to federal law. The procedures for calculating individual WQBELs are based on the SIP, which was approved by the USEPA prior to May 1, 2001, or Basin Plan provisions approved by the USEPA on May 29, 2000. Most

beneficial uses and WQOs contained in the Basin Plan were approved under state law and submitted to and approved by the USEPA prior to May 30, 2000. Any WQOs and beneficial uses submitted to the USEPA prior to May 30, 2000, but not approved by the 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 the applicable WQS for purposes of the CWA.

1. Scope and Authority

a. 40 CFR 122.44(d)(1)(i) mandates 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 WQS, 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." 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 WQC, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

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

b. NPDES regulations and the SIP provide the basis to establish maximum daily effluent limitations (MDELs).

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

(2) **SIP.** The SIP (Section 1.4) requires WQBELs to be expressed as MDELs and average monthly effluent limitations (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. Applicable Beneficial Uses and WQC

The WQC applicable to the receiving waters for this discharge are from the Basin Plan; the CTR, established by USEPA at 40 CFR 131.38; and the NTR, established by USEPA at

40 CFR 131.36. Some pollutants have WQC established by more than one of these three sources.

a. **Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, for all marine and freshwaters *except for* South San Francisco Bay, south of Dumbarton Bridge. For this portion of South Bay, the CTR WQC apply, except SSOs have been adopted for copper and nickel for marine and estuarine waters of South San Francisco Bay, south of Dumbarton Bridge. SSOs for cyanide have been adopted for all segments of San Francisco Bay.

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, including South San Francisco Bay south of the Dumbarton Bridge.

c. **NTR.** The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic organic pollutants for waters of San Francisco Bay upstream to, and including Suisun Bay and the Delta. These NTR WQC are applicable to South San Francisco Bay.

d. **Narrative Objectives for Water Quality-Based Toxics Controls.** Where numeric objectives have not been established or updated in the Basin Plan, NPDES regulations at 40 CFR 122.44(d) require that WQBELs be established based on USEPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQOs to fully protect designated beneficial uses.

   To determine the need for and establish WQBELs, when necessary, the Regional Water Board staff has followed the requirements of applicable NPDES regulations, including 40 CFR 122 and 131, as well as guidance and requirements established by the Basin Plan; USEPA's Technical Support *Document for Water Quality-Based Toxics Control* (the TSD, EPA/505/2-90-001, 1991); and the SIP.

e. **Basin Plan Receiving Water Salinity Policy.** The Basin Plan and CTR state that the salinity characteristics (i.e., freshwater versus saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than 1 ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities in between these two categories, or tidally influenced fresh waters that support estuarine beneficial uses, the WQOs shall be the lower of the salt- or freshwater criteria (the freshwater criteria for some metals are calculated based on ambient hardness) for each substance.

   The receiving water for the majority of this discharge is an unnamed channel that ultimately flows into South San Francisco Bay. Salinity data are not available for this channel; however, salinity as determined in the previous Order using data from February 1997 through March 2002 collected at monitoring station SB10 (Coyote Creek Station, the closest RMP station to the outfall) indicates a marine environment (>95 percent of the salinity data fell between 1 and 10 ppt). The remaining discharge is to to Matadero Creek.

Matadero Creek is tidally influenced and, because of inflows both from South San Francisco Bay and Matadero Creek, is therefore considered an estuarine receiving water. Therefore, the lower of the marine and freshwater WQOs from the Basin Plan, NTR, and CTR apply to this discharge.

f. **Receiving Water Hardness.** Hardness monitoring has not been conducted for Matadero Creek. A hardness value of 100 mg/L as $CaCO_3$ was used for the previous Order reasonable potential analysis as a conservative hardness value. In determining the WQOs for this Order, Regional Water Board staff again used this hardness value. This Order requires the Discharger to collect hardness data at the Matadero Creek station. A representative hardness value will be established for next permit reissuance.

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

Site-specific translators for copper and nickel were developed for South San Francisco Bay and are in the Basin Plan. The site-specific translators for copper and nickel are presented in Table F-9.

For this permit reissuance, Regional Water Board staff developed site-specific translators for chromium (VI), zinc, and lead for the South San Francisco Bay using data from the Dumbarton Bridge RMP station (BA30), and following USEPA's recommended guidelines for translator development. These translators were applied in determining reasonable potential and/or effluent limitations for these constituents. These translators were updated using additional RMP data collected since the previous Order issuance. The newly calculated translators for Zn, Cr(VI), and Pb are also presented in Table F-9, below. In determining the need for and calculating WQBELs for all other metals, where appropriate, Regional Water Board staff used default conversion factors from Table 2 of the CTR.

Table F-9. Site-Specific Translators for Cu, Ni, Zn, Cr(VI), and Pb for South San Francisco Bay

Pollutant	AMEL Translator	MDEL Translator
Copper	0.53	0.53
Nickel	0.44	0.44
Zinc	0.24	0.56
Chromium (VI)	0.037	0.089
Lead	0.060	0.15

3. Determining the Need for WQBELs

Assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required. Using the methods prescribed in section 1.3 of the SIP, Regional Water Board staff analyzed the effluent data to determine if the discharge demonstrates Reasonable Potential. The Reasonable Potential Analysis (RPA) compares the effluent data with numeric and narrative WQOs in the Basin Plan, the NTR, and the CTR.

a. **Reasonable Potential Methodology.** The RPA identifies the observed MEC in the effluent for each pollutant based on effluent concentration data. There are three triggers in determining Reasonable Potential according to Section 1.3 of the SIP.

(1) The first trigger (Trigger 1) is activated if the MEC is greater than or equal to the lowest applicable WQC (MEC ≥ WQC), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted WQC, 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 WQC (B > WQC), 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 WQC.

b. **Effluent Data.** The Regional Water Board's August 6, 2001, letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (hereinafter referred to as the August 6, 2001, Letter, Attachment G), formally required the Discharger to initiate or continue monitoring for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. Regional Water Board staff analyzed these effluent data and the nature of the discharge to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Discharger from January 2005 through December 2007 for inorganic pollutants, and from November 2003 through January 2008 for organic pollutants.

c. **Ambient Background Data.** Ambient background values are typically used to determine reasonable potential and to calculate effluent limitations, when necessary. For the RPA, ambient background concentrations are the observed maximum detected water column concentrations. The SIP states that, for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for criteria intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations.

The background data used in the RPA were generated at the Dumbarton Bridge RMP station, except for ammonia, for which the maximum ambient concentration at the South Bay RMP station was used.

Not all the constituents listed in the CTR have been analyzed by the RMP. These data gaps are addressed by the Regional Water Board's August 6, 2001, Letter, which formally required dischargers to conduct ambient background monitoring and effluent monitoring for those constituents not currently monitored by the RMP and to provide this technical information to the Regional Water Board.

On May 15, 2003, a group of several San Francisco Bay Region Dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the San Francisco Bay Ambient Water Monitoring Interim Report (2003). This study includes monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not monitored by the RMP. The study included the Dumbarton Bridge monitoring station. Additional data were provided from the BACWA Ambient Water Monitoring: Final CTR Sampling Update Report, dated June 15, 2004.

The RPA was conducted and the WQBELs were calculated using RMP data from 1993 through 2006 at the Dumbarton Bridge RMP station, and additional data from the BACWA receiving water study.

d. **RPA Determination.** The MECs, most stringent applicable WQC, and background concentrations used in the RPA are presented in Table F-10, along with the RPA results (yes or no) for each pollutant. Reasonable Potential was not determined for all pollutants because there are not applicable WQC for all pollutants, or monitoring data were not available for others. The RPA determines that cyanide, dioxin-TEQ, chlorodibromomethane, and total ammonia exhibit Reasonable Potential by Trigger 1. Mercury exhibits reasonable potential by Trigger 2. Copper and nickel have reasonable potential by Trigger 3 as explained below.

Table F-10. Summary of RPA Results

CTR #	Priority Pollutants	MEC or Minimum DL (1)(2) (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL (1)(2) (µg/L)	RPA Results(3)
1	Antimony	< 60	4300	1.3	No
2	Arsenic	1.1	36	5.1	No
3	Beryllium	< 0.05	No Criteria	0.11	Ud
4	Cadmium	0.26	2.5	0.17	No
5a	Chromium (III)	0.8	207	15	No
5b	Chromium (VI)	0.8	200	15	No
6	**Copper**	**11.2**	**13**	**8.6**	**Yes**
7	Lead	0.5	36	4.2	No
8	**Mercury (303 d listed)**	**0.0059**	**0.051**	**0.068**	**Yes**
9	**Nickel**	**4.5**	**27**	**16**	**Yes**
10	Selenium (303 d listed)	1.6	5	0.63	No
11	Silver	< 0.2	2.2	0.12	No
12	Thallium	Not Available	6.3	0.16	Ud
13	Zinc	59	170	21	No
14	**Cyanide**	**5.8**	**2.9**	**< 0.4**	**Yes**
15	Asbestos	Not Available	No Criteria	Not Available	Ud
16	2,3,7,8-TCDD	< 1.8E-07	1.4E-08	2.4E-08	No
	Dioxin TEQ (303 d listed)	**4.1E-08**	**1.4E-08**	**2.6E-07**	**Yes**
17	Acrolein	< 0.50	780	< 0.5	No
18	Acrylonitrile	< 0.33	0.66	< 0.02	No
19	Benzene	< 0.03	71	< 0.05	No
20	Bromoform	68	360	< 0.5	No
21	Carbon Tetrachloride	0.9	4.4	0.07	No
22	Chlorobenzene	< 0.03	21000	< 0.5	No
23	**Chlorodibromomethane**	**56**	**34**	**0.057**	**Yes**

CTR #	Priority Pollutants	MEC or Minimum DL (1)(2) (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL (1)(2) (µg/L)	RPA Results(3)
24	Chloroethane	< 0.03	No Criteria	< 0.5	Ud
25	2-Chloroethylvinyl Ether	< 0.1	No Criteria	< 0.5	Ud
26	Chloroform	4	No Criteria	< 0.5	Ud
27	Dichlorobromomethane	18	46	< 0.05	No
28	1,1-Dichloroethane	< 0.04	No Criteria	< 0.05	Ud
29	1,2-Dichloroethane	< 0.04	99	0.04	No
30	1,1-Dichloroethylene	< 0.05	3.2	< 0.5	No
31	1,2-Dichloropropane	< 0.03	39	< 0.05	No
32	1,3-Dichloropropylene	0.07	1700	Not Available	No
33	Ethylbenzene	< 0.04	29000	< 0.5	No
34	Methyl Bromide	0.24	4000	< 0.5	No
35	Methyl Chloride	< 0.04	No Criteria	< 0.5	Ud
36	Methylene Chloride	1.4	1600	< 0.5	No
37	1,1,2,2-Tetrachloroethane	< 0.04	11	< 0.05	No
38	Tetrachloroethylene	< 0.04	8.9	< 0.05	No
39	Toluene	1.2	200000	< 0.3	No
40	1,2-Trans-Dichloroethylene	< 0.05	140000	< 0.5	No
41	1,1,1-Trichloroethane	< 0.03	No Criteria	< 0.5	Ud
42	1,1,2-Trichloroethane	< 0.05	42	< 0.05	No
43	Trichloroethylene	0.08	81	< 0.5	No
44	Vinyl Chloride	< 0.05	525	< 0.5	No
45	Chlorophenol	< 0.7	400	< 1.2	No
46	2,4-Dichlorophenol	< 0.7	790	< 1.5	No
47	2,4-Dimethylphenol	< 0.5	2300	< 1.3	No
48	2-Methyl-4,6-Dinitrophenol	< 0.6	765	< 1.2	No
49	2,4-Dinitrophenol	< 0.5	14000	< 0.7	No
50	2-Nitrophenol	< 0.6	No Criteria	< 1.3	Ud
51	4-Nitrophenol	< 0.6	No Criteria	< 1.6	Ud
52	3-Methyl-4-Chlorophenol	< 0.6	No Criteria	< 1.1	Ud
53	Pentachlorophenol	< 0.6	7.9	< 1	No
54	Phenol	5.7	4600000	< 1.3	No
55	2,4,6-Trichlorophenol	< 0.6	6.5	< 1.3	No
56	Acenaphthene	< 0.03	2700	0.0026	No
57	Acenephthylene	< 0.02	No Criteria	0.0026	Ud
58	Anthracene	< 0.0095	110000	0.0023	No
59	Benzidine	< 1	0.00054	< 0.0015	No
60	Benzo(a)Anthracene	< 0.02	0.049	0.011	No
61	Benzo(a)Pyrene	< 0.0095	0.049	0.045	No
62	Benzo(b)Fluoranthene	< 0.0095	0.049	0.057	No
63	Benzo(ghi)Perylene	< 0.02	No Criteria	0.015	Ud
64	Benzo(k)Fluoranthene	< 0.0095	0.049	0.021	No
65	Bis(2-Chloroethoxy)Methane	< 0.5	No Criteria	< 0.3	Ud
66	Bis(2-Chloroethyl)Ether	< 0.6	1.4	< 0.32	No
67	Bis(2-Chloroisopropyl)Ether	< 0.5	170000	Not Available	No
68	Bis(2-Ethylhexyl)Phthalate	0.6	5.9	0.93	No
69	4-Bromophenyl Phenyl Ether	< 0.4	No Criteria	< 0.23	Ud
70	Butylbenzyl Phthalate	< 0.5	5200	0.0055	No
71	2-Chloronaphthalene	< 0.5	4300	< 0.3	No
72	4-Chlorophenyl Phenyl Ether	< 0.5	No Criteria	< 0.31	Ud
73	Chrysene	< 0.0095	0.049	0.022	No
74	Dibenzo(a,h)Anthracene	< 0.02	0.049	0.0088	No
75	1,2-Dichlorobenzene	< 0.03	17000	< 0.3	No
76	1,3-Dichlorobenzene	< 0.03	2600	< 0.3	No
77	1,4-Dichlorobenzene	0.1	2600	< 0.3	No
78	3,3-Dichlorobenzidine	< 0.6	0.077	< 0.001	No
79	Diethyl Phthalate	1.8	120000	0.3	No
80	Dimethyl Phthalate	< 0.4	2900000	< 0.21	No
81	Di-n-Butyl Phthalate	< 0.5	12000	2.2	No
82	2,4-Dinitrotoluene	< 0.4	9.1	< 0.27	No
83	2,6-Dinitrotoluene	< 0.5	No Criteria	< 0.29	Ud
84	Di-n-Octyl Phthalate	< 0.7	No Criteria	< 0.38	Ud
85	1,2-Diphenylhydrazine	< 0.6	0.54	0.0053	No
86	Fluoranthene	< 0.02	370	0.039	No
87	Fluorene	< 0.02	14000	0.0055	No
88	Hexachlorobenzene	< 0.5	0.00077	0.00048	No

CTR #	Priority Pollutants	MEC or Minimum DL (1)(2) (µg/L)	Governing WQO/WQC (µg/L)	Maximum Background or Minimum DL (1)(2) (µg/L)	RPA Results(3)
89	Hexachlorobutadiene	< 0.5	50	< 0.3	No
90	Hexachlorocyclopentadiene	< 0.5	17000	< 0.3	No
91	Hexachloroethane	< 0.4	8.9	< 0.2	No
92	Indeno(1,2,3-cd) Pyrene	< 0.0095	0.049	0.078	No
93	Isophorone	< 0.5	600	< 0.3	No
94	Naphthalene	< 0.02	No Criteria	0.011	Ud
95	Nitrobenzene	< 0.5	1900	< 0.25	No
96	N-Nitrosodimethylamine	< 0.4	8.1	< 0.3	No
97	N-Nitrosodi-n-Propylamine	< 0.6	1.4	< 0.001	No
98	N-Nitrosodiphenylamine	< 0.4	16	< 0.2	No
99	Phenanthrene	< 0.0095	No Criteria	0.014	Ud
100	Pyrene	< 0.0095	11000	0.056	No
101	1,2,4-Trichlorobenzene	< 0.05	No Criteria	< 0.3	Ud
102	Aldrin	< 0.002	0.00014	1.37E-6	No
103	alpha-BHC	< 0.002	0.013	0.00066	No
104	beta-BHC	< 0.003	0.046	0.00061	No
105	gamma-BHC	< 0.002	0.063	0.0017	No
106	delta-BHC	0.089	No Criteria	0.00013	Ud
107	Chlordane (303 d listed)	< 0.02	0.00059	0.00057	No
108	4,4-DDT (303 d listed)	< 0.002	0.00059	0.00020	No
109	4,4-DDE	< 0.003	0.00059	0.00068	No
110	4,4-DDD	< 0.002	0.00084	0.00077	No
111	Dieldrin (303d)	< 0.002	0.00014	0.00029	No
112	alpha-Endosulfan	< 0.002	0.0087	0.000027	No
113	beta-Endosulfan	< 0.002	0.0087	0.000046	No
114	Endosulfan Sulfate	< 0.002	240	0.00016	No
115	Endrin	< 0.002	0.0023	0.00012	No
116	Endrin Aldehyde	< 0.003	0.81	Not Available	No
117	Heptachlor	< 0.003	0.00021	0.000022	No
118	Heptachlor Epoxide	< 0.002	0.00011	0.00017	No
119-125	PCBs sum (303 d listed)	< 0.017	0.00017	0.0040	No
126	Toxaphene	< 0.14	0.0002	Not Available	No
	Tributyltin	Not Available	0.0074	0.003	Ud
	Total PAHs	< 0.0095	15	0.38	No
	Total Ammonia (as N in mg/L)	**4.4**	**1.21**	**0.28**	**Yes**

Footnote for Table F-10:

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

e. **Constituents with limited data.** In some cases, Reasonable Potential cannot be determined because effluent data or ambient background concentrations are not available. 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 to add numeric effluent limitations to this Order or to continue monitoring.

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 are required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.

The previous Order included effluent limits for 4,4-DDE, dieldrin, heptachlor epoxide, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene; however, effluent limitations for these pollutants are not retained by this Order because these pollutants do not have Reasonable Potential. This elimination of these effluent limits is consistent with anti-backsliding requirements in accordance with State Water Board Order WQ 2001-16.

4. WQBEL Calculations.

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

b. **Shallow Water Discharge.** Due to limited upstream freshwater flows, discharges from the Plant to the unnamed channel and to Matadero Creek via Renzel Marsh Pond are classified by the Regional Water Board as a shallow water discharge.

c. Dilution Credit. The shallow receiving waters support biologically sensitive and critical habitats. Therefore, no dilution credit (D=0) was used to calculate WQBELs for most pollutants, with the exception of cyanide and ammonia, which are a non-persistent pollutants that readily degrade to a non-toxic state. See findings under "Development of WQBELs for Specific Pollutants" for a more detailed discussion on the dilution credit for ammonia.

Cyanide attenuates in receiving waters due to both degradation and dilution. The Basin Plan establishes dilution credits for cyanide for shallow water discharges. The dilution credit accounts for attenuation of cyanide in the receiving water. A dilution ratio of 3.25:1 (D = 2.25) has been applied in calculating effluent limitations for cyanide.

d. Development of WQBELs for Specific Pollutants

(1) Copper

i. *Copper WQC*. The most stringent copper chronic and acute marine WQC of 6.9 and 10.8 µg/L are the Basin Plan SSOs for South San Francisco Bay, expressed as dissolved metal. Regional Water Board staff converted these WQC to total recoverable metal using the Basin Plan site-specific translator of 0.53. The resulting chronic WQC of 13 µg/L and acute WQC of 20 µg/L were used in the RPA.

ii. *RPA Results*. Copper historically has been a pollutant of concern in South San Francisco Bay. To ensure that ambient levels of copper in South San Francisco Bay do not increase as a result of POTW discharges, the Basin Plan requires

NPDES permits to include copper effluent limits for South San Francisco Bay dischargers.

iii. *Copper WQBELs*. WQBELs for copper, calculated according to SIP procedures, with an effluent data coefficient of variation (CV) of 0.17, are an AMEL of 12 µg/L and an MDEL of 16 µg/L.

iv. *Immediate Compliance Feasible*. Statistical analysis of effluent data for copper, collected over the period of January 2005 through December 2007, shows that the 95th percentile (11 µg/L) is less than the AMEL (12 µg/L); the 99th percentile (12 µg/L) is less than the MDEL (16 µg/L); and the mean (8.5 µg/L) is less than the LTA (11 µg/L) of the effluent data set after accounting for effluent variability. The Regional Water Board concludes, therefore, that immediate compliance with these WQBELs is feasible[1].

v. *Antibacksliding*. The copper WQBELs are at least as stringent as those in the previous Order; therefore, antibacksliding requirements are met.

(2) Nickel

i. *Nickel WQC.* The most stringent chronic and acute marine WQC of 11.9 µg/L and 62.4 µg/L are the Basin Plan SSOs for South San Francisco Bay, expressed as dissolved metal. Regional Water Board staff converted these WQC to total recoverable metal using the Basin Plan site-specific translator of 0.44. The resulting chronic WQC of 27 µg/L and acute WQC of 142 µg/L were used in the RPA.

ii. *RPA Results.* Nickel has historically been a pollutant of concern in South San Francisco Bay. To ensure that ambient levels of nickel in South San Francisco Bay do not increase as a result of POTW discharges, the Basin Plan requires NPDES permits to include nickel effluent limits for South San Francisco Bay dischargers.

iii. *Nickel WQBELs.* WQBELs for nickel, calculated according to SIP procedures, with an effluent CV of 0.13, are an AMEL of 26 µg/L and an MDEL of 31 µg/L.

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[1] The statistical feasibility analysis consisted of the following steps:

- Use statistical software (MiniTab) to fit a statistical distribution to the effluent data.
- Calculate the mean, 95th and 99th percentiles of the effluent data for each constituent considered (using the fitted distribution for percentiles calculation).
- Compare the mean, 95th and 99th percentile values with the long-term average (LTA), AMEL, and MDEL calculated using the SIP procedure, respectively.
- If any of the LTA, AMEL, and MDEL exceeds the mean, 95th percentile, and 99th percentile, it may be infeasible for the Discharger to immediately comply with WQBELs.
- Where the 95th and 99th percentile values cannot be estimated due to too few data or too many data being non-detect, the determination was based on staff judgment after examination of the raw data, such as direct comparison of MEC with AMEL. If MEC>AMEL, it may be infeasible for the Discharger to immediately comply with WQBELs.

iv. *Immediate Compliance Feasible.* Statistical analysis of the effluent data for nickel over the period of January 2005 – December 2007 shows that the 95th percentile (4.1 µg/L) is less than the AMEL (26 µg/L); the 99th percentile (4.5 µg/L) is less than the MDEL (31 µg/L); and the mean (3.4 µg/L) is less than the LTA (23 µg/L). The Regional Water Board concludes that immediate compliance with these WQBELs is feasible.

v. *Antibacksliding.* Antibacksliding requirements are satisfied as limitations for nickel established by this Order are at least as stringent as the limitations established by the previous Order, which were an AMEL of 26 µg/L and an MDEL of 32 µg/L.

(3) Cyanide

i. *Cyanide WQC*. The most stringent applicable WQC for cyanide are the Basin Plan SSOs for marine waters, which are 2.9 µg/L as a four-day average (chronic objective), and 9.4 µg/L as a one-hour average (acute objective).

ii. *RPA Results*. This Order finds reasonable potential and thus establishes effluent limitations for cyanide because the MEC of 5.8 µg/L exceeds the governing WQC of 2.9 µg/L, demonstrating Reasonable Potential by Trigger 1.

iii. *Cyanide WQBELs*. Final WQBELs for cyanide, calculated according to SIP procedures with an effluent CV of 0.6 and a dilution credit of 2.25, are an AMEL of 7.1 µg/L and an MDEL of 14 µg/L.

iv. *Immediate Compliance Feasible.* Statistical analysis of the effluent data for cyanide over the period of January 2005 – December 2007 shows that the 95th percentile (4.4 µg/L) is less than the AMEL (7.1 µg/L); the 99th percentile (5.8 µg/L) is less than the MDEL (14 µg/L); and the mean (2.3 µg/L) is less than the LTA (4.6 µg/L). The Regional Water Board concludes that immediate compliance with these WQBELs is feasible.

v. *Antibacksliding*. Antibacksliding requirements are satisfied because the previous Order did not include final effluent limitations for cyanide. The new WQBELs are also more stringent than the interim effluent limit in the previous Order (32 µg/L).

(4) Dioxin-TEQ

i. *Dioxin-TEQ WQC*. The Basin Plan narrative WQO for bioaccumulative substances states "[M]any pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

Because it is the consensus of the scientific community that dioxins and furans associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms, the Basin Plan's narrative bioaccumulation WQO is applicable to these pollutants. Elevated levels of dioxins and furans in fish tissue in San Francisco Bay demonstrate that the narrative bioaccumulation WQO is not being met. USEPA has therefore included the South

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

The CTR establishes a numeric WQO for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 1.4×10^{-8} µg/L for the protection of human health, when aquatic organisms are consumed. When the CTR was promulgated, USEPA stated its support of the regulation of other dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs) in NPDES permits. For California waters, USEPA stated specifically, "if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBELs for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme." [65 Fed. Reg. 31682, 31695 (2000)] This procedure, developed by the World Health Organization (WHO) in 1998, uses a set of toxicity equivalency factors (TEFs) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-TCDD. The CTR criterion is used as a criterion for dioxin-TEQ 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 from the discharge has reasonable potential to cause or contribute to a violation of the Basin Plan's narrative bioaccumulation WQO, Regional Water Board staff used TEFs to express the measured concentrations of 16 dioxin congeners in effluent and background samples as 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 version of the TEF procedure. The CTR has established a specific WQS for dioxin-like PCBs, and they are included in the analysis of total PCBs.

ii. *RPA Results*. This Order establishes WQBELs for dioxin-TEQ because the MEC (4.1×10^{-8} µg/L) exceeds the applicable WQC (1.4×10^{-8} µg/L), demonstrating Reasonable Potential by Trigger 1.

iii. *Dioxin-TEQ WQBELs*. WQBELs for dioxin-TEQ, calculated using SIP procedures as guidance, with a SIP default CV of 0.6 (for a data set with fewer than 10 data points), are an AMEL of 1.4×10^{-8} µg/L and an MDEL of 2.8×10^{-8} µg/L.

iv. *Immediate Compliance Infeasible*. The Discharger's Infeasibility Study dated July 2, 2008, asserts that the facility cannot immediately comply with WQBELs for dioxin-TEQ. With insufficient effluent data to determine the distribution of the effluent data set or to calculate a mean and standard deviation, feasibility to comply with final effluent limitations is determined by comparing the MEC (4.1×10^{-8} µg/L) to the AMEL (1.4×10^{-8} µg/L) and the MDEL (2.8×10^{-8} µg/L). The Regional Water Board concurs with the Discharger's assertion of infeasibility to comply because the MEC exceeds the AMEL.

v. *Need for a Compliance Schedule.* This Order contains a compliance schedule based on the Basin Plan and State Water Board Resolution No. 2008-0025 (Compliance Schedule Policy) to allow time for the Discharger to comply with these effluent limits, which are based on a new interpretation of a narrative objective. The Compliance Schedule Policy applies to pollutants that are not addressed by the SIP and requires that compliance schedules include interim limits. The final WQBELs will become effective on June 1, 2019. The Regional Water Board may amend these limits based on new information or a TMDL for dioxin-TEQ.

vi. *Interim Effluent Limit.* Since it is infeasible for the Discharger to comply with the final WQBELs for dioxin-TEQ, and there are not enough data to calculate a performance-based interim limit statistically, this Order establishes an interim limit based on the MLs of all congeners and their TEFs. The sum of the each congener's ML times its TEF is $6.3x10^{-5}$ µg/L. This interim limit is established as a monthly average limit, and it will remain in effect until May 31, 2019.

vii. *Antibacksliding*. Antibacksliding requirements are satisfied because the previous Order did not include an effluent limitation for dioxin-TEQ.

(5) Chlorodibromomethane

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

ii. *RPA Results.* This Order finds reasonable potential and thus establishes effluent limitations for chlorodibromomethane because the MEC (56 µg/L) exceeds the most stringent applicable criterion (34 µg/L), demonstrating reasonable potential by Trigger 1.

iii. *Chlorodibromomethane WQBELs.* WQBELs for chlorodibromomethane, calculated according to SIP procedures, with a CV of 0.49, are an AMEL of 34 µg/L and an MDEL of 62 µg/L.

iv. *Immediate Compliance Feasible.* The Discharger believes that it can comply with these WQBELs for chlorodibromomethane. The Discharger has replaced chlorine disinfection with choramination disinfection during the term of the previous Order, which reduces the formation of halomethanes during disinfection, and the Discharger has since reported lower chlorodibromomethane effluent concentrations.

v. *Antibacksliding.* Antibacksliding requirements are satisfied because the previous Order did not include an effluent limit for chlorodibromomethane.

(6) Total Ammonia

i. *Ammonia WQC.* The Basin Plan contains WQOs for un-ionized ammonia of 0.025 milligrams per liter (mg/L) as an annual median and 0.4 mg/L as a maximum for South San Francisco Bay. Regional Water Board staff translated these WQOs 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 objective, Regional Water Board staff used pH, salinity, and temperature data from 1994 through 2002 from the nearest RMP station to the outfall, the South Bay RMP station (BA20). Regional Water Board staff used the following equations to determine the fraction of total ammonia that would exist in the toxic un-ionized form in the estuarine receiving water. [*Ambient Water Quality Criteria for Ammonia* (saltwater) – 1989, EPA Publication 440/5-88-004, USEPA, 1989]:

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

Where:

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

To convert the Basin Plan's chronic un-ionized ammonia WQO to an equivalent total ammonia concentration, the median un-ionized ammonia fraction at the South Bay monitoring station was used. To convert the Basin Plan's acute un-ionized ammonia WQO to an equivalent total ammonia concentration, the 90th percentile un-ionized ammonia fraction at the South Bay RMP station was used. Using the 90th percentile and median to express the acute and chronic un-ionized ammonia WQOs as equivalent total ammonia concentrations is consistent with USEPA guidance, as expressed by USEPA in *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion* (EPA Publication Number 823-B-96-007, 1996). The equivalent total ammonia acute and chronic WQOs are 10.2 mg/L and 1.21 mg/L, respectively.

ii. *RPA Results*. This Order finds reasonable potential and thus establishes effluent limitations for ammonia because the MEC (4.4 mg/L) exceeds the most stringent applicable criterion (1.21 mg/L), demonstrating reasonable potential by Trigger 1.

iii. *Dilution Credit.* In calculating the ammonia WQBELs, Regional Water Board staff used a dilution credit of D=1 or 2:1. The granting of this dilution credit is based on the following considerations: (1) applying the dilution credit is conservative in that it reflects the physical and chemical processes within the receiving water; and (2) the dilution credit is consistent with Basin Plan section 4.6.1.2 and SIP section 1.4.2.

(a) Most Conservative Dilution Based on Competing Chemical and Physical Processes. The dilution credit and revised effluent limits are based on Regional Water Board staff's assessment of where the highest unionized or toxic ammonia concentration could exist in the receiving water. This point is

somewhere between the point of discharge and far away from the point of discharge. This is because the unionized ammonia concentration reflects two competing processes in the receiving water: dilution, which lowers ammonia, and pH rise, which increases the toxic form of ammonia. As effluent leaves the Plant's outfall, its total ammonia concentration becomes more dilute as ambient water mixes with the effluent the further away it is from the outfall. At the same time, the pH of the effluent increases as the effluent moves farther from the outfall and mixes with receiving water because the effluent pH is lower than that of the receiving water. As the pH rises, the fraction of ammonia in the acutely toxic form, the unionized form, increases. This increase continues until the pH in the receiving water levels off to ambient. The effects of dilution continue, however.

At first, the pH rise has a greater effect on the unionized or toxic ammonia concentration than dilution. In other words, as the effluent moves away from the outfall and the pH rises, the concentration of unionized ammonia increases more than the effects from dilution. At some point, however, when the pH levels off, dilution then has a greater effect. From this point, as the effluent continues to travel away from the outfall, the unionized ammonia concentration declines with dilution. Based on the Discharger's memo dated January 15, 2009, the worst-case unionized ammonia concentration most likely occurs where D=1. Limits based on a dilution credit of D=1 would ensure that the receiving water meets the Basin Plan objectives at the point where D=1. Moreover, because this point represents the highest unionized ammonia concentration, the receiving water will also meet the objectives at all other locations.

The Discharger based its analysis on limited laboratory tests and theory. It is conservative in that it does not consider the breakdown of ammonia in the receiving water. Nevertheless, the permit at Provision VI.C.2.d would require a field study to confirm the Discharger's analysis. During the next permit term, the ammonia effluent limits may be reconsidered based on new information that may be available at that time.

(b) Basin Plan Section 4.6.1.2. Basin Plan section 4.6.1.2 (dilution ratios for shallow water discharges) allows a dilution credit in effluent limit calculations. Using D=1 is consistent with Basin Plan section 4.6.1.2 for the following reasons:

- The Basin Plan requires "that an aggressive pretreatment and source control program is in place." The City will continue to implement its program in accordance with the tentative order's proposed pollutant minimization program requirements, and will optimize ammonia use in its chloramination system in accordance with requirements for proper operation and maintenance. A source control program specifically targeting ammonia is impracticable, however, because, unlike many other pollutants found in wastewater, ammonia is primarily a byproduct of human waste (i.e., urine) and its capture and disposal is a fundamental purpose of the wastewater treatment enterprise.

- The Basin Plan requires that proposed limits result in compliance with WQOs be based on worst-case conditions. As discussed above, the effluent limits based on D=1 reflect worst-case condition and ensure that WQOs are met at all locations within the receiving water.

- The Basin Plan requires an evaluation of the effects of mass loading. Since ammonia degrades relatively quickly and does not persist in receiving water, there is no enduring effect of mass ammonia loading.

- Effluent limits based on dilution credits are not to impair the basis upon which the Regional Water Board grants an exception to Basin Plan Prohibition 1. The basis for granting this discharge an exception is explained in Fact Sheet section VI.B. Because the ammonia limits ensure that ammonia WQOs are met at all locations in the receiving water, they do not undermine this basis for the exception.

(c) State Implementation Policy (SIP) Section 1.4.2. Consistent with SIP section 1.4.2.2, the dilution credit used to calculate the ammonia WQBELs reflects the size of the mixing zone. This mixing zone is as small as practicable. It stretches from the outfall to just beyond the unnamed channel in South San Francisco Bay, an area of roughly 3.4 acres. This mixing zone is based on the Discharger's dilution study titled *Dilution Analysis and Water Quality Impacts of the Palo Alto Regional Water Quality Control Plant on South San Francisco Bay (December 1997)* and an analysis titled *Palo Alto Regional Water Quality Control Plant Total Ammonia Effluent Limits: Analysis and Recommendations,* dated January 15, 2009. It also meets the conditions of SIP section 1.4.2.2:

(1) The mixing zone does not compromise the integrity of the receiving water. The unnamed channel is a narrow inlet of South San Francisco Bay. Since the mixing zone is mostly confined to this channel, it does not compromise the integrity of greater South San Francisco Bay.

(2) The mixing zone does not cause acutely toxic conditions to aquatic life passing through the mixing zone. The mixing zone was selected such that its edge is estimated to be the location with the highest unionized ammonia concentrations. The WQBELs will not allow acutely toxic conditions at this location, and no other location will experience greater acute toxicity. Moreover, the calculation of ammonia WQBELs is strongly influenced by the Basin Plan's chronic ammonia objective. WQBELs based solely on the acute objective would be far less stringent.

(3) Because the mixing zone is mostly within the unnamed channel, it does not restrict the passage of aquatic life throughout South San Francisco Bay. Moreover, the unnamed channel is a "dead end" channel, so the mixing zone does not restrict passage through the channel.

(4) The mixing zone does not adversely impact biologically sensitive or critical habitats because the unnamed channel is not an area of special biological significance as identified by Basin Plan Figure 2-1. In addition, because the edge of the mixing zone is the point with the highest unionized ammonia concentrations, basing the WQBELs calculations on this point protects all biologically sensitive and critical habitats.

(5) The ammonia within the mixing zone does not produce undesirable or nuisance aquatic life. All areas within the mixing zone will meet the ammonia water quality objectives.

(6) The ammonia within the mixing zone does not result in floating debris, oil, or scum.

(7) The ammonia within the mixing zone does not produce objectionable color, odor, taste, or turbidity (moreover, the receiving water is not used for drinking water supplies).

(8) The ammonia within the mixing zone does not cause objectionable bottom deposits.

(9) The ammonia within the mixing zone does not cause a nuisance. All areas within the mixing zone will meet the ammonia water quality objectives.

(10) The mixing zone does not dominate South San Francisco Bay or overlap a mixing zone from a different outfall. The Regional Water Board has not established any other mixing zones for nearby shallow water dischargers.

(11) The mixing zone is not located at or near a drinking water intake.

iv. *WQBELs*. The Basin Plan (section 4.5.5.2) indicates that WQBELs for toxic pollutants shall be calculated according to the SIP. The Basin Plan (section 3.3.20) refers to ammonia as a toxic pollutant; therefore, it is consistent with the Basin Plan to use SIP methodology to determine and establish effluent limitations for ammonia. The total ammonia WQBELs, calculated according to SIP procedures (with an effluent CV of 0.94) are an AMEL of 2.7 mg/L and an MDEL of 9.5 mg/L. A dilution credit D=1 is included in the effluent limit calculation. These limits are considered more stringent than the previous effluent limits (monthly average limit of 3 mg/L and daily maximum of 8 mg/L) because the monthly average limit would limit the discharge to a lower monthly average level.

To calculate total ammonia effluent limits, some statistical adjustments were made because the Basin Plan's chronic WQO for un-ionized ammonia is based on an annual median, while chronic criteria are usually based on a 4-day average; also, the SIP assumes a monthly sampling frequency of 4 days per month to

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

These effluent limits are based on the conditions in the South San Francisco Bay; however, the Regional Water Board believes that the same effluent limits will be protective of Matadero Creek. The discharge first goes to the Renzel Marsh Pond. The wastewater stays in the pond for an extended period; ammonia attenuates after this extended stay in the pond. In addition, this discharge is mainly for enhancing the salt marsh harvest mouse habitat in that area. The permit includes a special study to characterize Matadero Creek (Provision VI.C.2.d). The Regional Water Board will be able to determine the receiving water conditions using the data collected under this study. If necessary, the permit may be reopened to include additional ammonia effluent limits to protect Matadero Creek.

The receiving waters are not impacted by high pH water ebbed from wetlands at low tides, a phenomenon that is observed for highland marsh areas. Since effluent pH values are usually much lower than those of bay water, the highest pH values after mixing would be no greater than those of the bay water. In addition, when developing total ammonia effluent limits, conditions at RMP South Bay station were used, where in terms of pH, it reflects the bay water pH. Therefore, conservative background conditions are used in the development of total ammonia objectives and effluent limits.

iv. *Immediate Compliance Feasible*. Based on a lognormal distribution, the 95th percentile is 2.6 mg/L and the 99th percentile is 5.1 mg/L. Both values are below the AMEL or MDEL. Therefore, it is expected that the Discharger can comply with the ammonia WQBELs.

v. *Antibacksliding.* Antibacksliding requirements are satisfied as the final effluent limitations for ammonia in this Order are more stringent than the effluent limitations in the previous Order.

e. **Effluent Limit Calculations.** The following table shows the derivation of WQBELs for copper, nickel, cyanide, dioxin-TEQ, chlorodibromomethane, and total ammonia.

Table F-11. Effluent Limit Calculations

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Dioxin-TEQ	Chlorodibro-momethane	Total Ammonia (acute)	Total Ammonia (chronic)
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L as Nitrogen	µg/L as N

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Dioxin-TEQ	Chlorodibro-momethane	Total Ammonia (acute)	Total Ammonia (chronic)
Basis and Criteria type	BP SSO	BP SSO	BP SSOs	CTR HH	CTR HH	BP Aquatic Life	Basin Plan Aquatic Life
Criteria -Acute	10.8	62.4	9.4	-----	-----	-----	-----
Criteria -Chronic	6.9	11.9	2.9	-----	-----	-----	-----
Water Effects Ratio (WER)	1	1	1	1	1	1	1
Lowest WQO			2.9	1.4E-08	34	10200	1210
Site Specific Translator - MDEL	0.53	0.44	-----	-----	-----	-----	-----
Site Specific Translator - AMEL	0.53	0.44	-----	-----	-----	-----	-----
Dilution Factor (D) (if applicable)	0	0	2.25	0	0	1	1
No. of samples per month	4	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	N	N	Y	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y	Y	N	N
Applicable Acute WQO	20	142	9.4			10200	
Applicable Chronic WQO	13	27	2.9				1210
HH criteria		4,600	220000	1.4E-08	34		
Background (Maximum Conc for Aquatic Life calc)	8.6	16	0.4	2.6E-07	0.057	280	140
Background (Average Conc for Human Health calc)		5.8	0.4	1.1E-07	0.057		
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	N	N	Y	N	N	N
ECA acute	20	142	30			20120	No Acute WQO
ECA chronic	13	27	9			No Chronic WQO	2280
ECA HH		4600	714999	1.4E-08	34		
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	Y	N	N	N
Avg of effluent data points	8.5	3.4	2.3		34	803	803
Std Dev of effluent data points	1.4	0.44	1.3		16	756	756
CV calculated	0.2	0.1	0.6	N/A	0.49	0.94	0.94
CV (Selected) - Final	0.2	0.1	0.6	0.60	0.49	0.94	0.94
ECA acute mult99	0.69	0.74	0.34			0.215	
ECA chronic mult99	0.83	0.86	0.54				0.893
LTA acute	14.1	105.5	10.0			4327	
LTA chronic	10.8	23.3	4.6				2035
minimum of LTAs	10.8	23.3	4.6			2035	2035
AMEL mult95	1.1	1.1	1.5	1.6	1.4	1.89	1.31
MDEL mult99	1.4	1.3	3.0	3.1	2.6	4.65	4.65
AMEL (aq life)	12.3	25.9	7.1			3846	2657
MDEL (aq life)	15.6	31.3	13.8			9464	9464
MDEL/AMEL Multiplier	1.27	1.21	1.95	2.01	1.83	2.5	3.56

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Dioxin-TEQ	Chlorodibro-momethane	Total Ammonia (acute)	Total Ammonia (chronic)
AMEL (human hlth)		4600	714999	1.4E-08	34.0		0
MDEL (human hlth)		5563	1396112	2.81E-08	62.2		0
minimum of AMEL for Aq. life vs HH	12.3	25.9	7.1	1.4E-08	34.0	3846	2657
minimum of MDEL for Aq. Life vs HH	15.6	31.3	14	2.81E-08	62.2	9464	9464
Current limit in permit (30-day average)	12	26	-----	-----	-----	3000	3000
Current limit in permit (daily Max.)	17	32	32 (Interim)	-----	86 (Interim)	8000	8000
Final limit - AMEL	12	26	7.1	1.4E-08	34	-----	2700
Final limit - MDEL	16	31	14	2.8E-08	62	-----	9500
Max Effl Conc (MEC)	11	4.5	5.8	4.1E-08	56	4400	4400

5. Whole Effluent Acute Toxicity

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

b. **Compliance History.** The Discharger's acute toxicity monitoring data show that all bioassay results from November 2003 – January 2008 were reported as 100% survival. There have been no acute toxicity effluent limit violations.

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

6. Whole Effluent Chronic Toxicity

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

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

c. **Monitoring History.** The Discharger's chronic toxicity monitoring data from November 2003 – January 2008 show that there were 3 exceedances of the 3-sample median trigger, with a maximum 3-sample median result of 2.3 TUC reported. Monitoring data also show there were 4 exceedances of the single sample trigger, with a maximum reported single sample result of 16 TUc. The Discharge has not initiated any TIE study.

d. **Screening Phase Study.** The screening phase study conducted during the term of the previous Order indicated the water flea, *Ceriodaphnia dubia*, as the most sensitive test species. The Discharger is required to conduct a chronic toxicity screening phase study, as described in Appendix E-1 of the MRP (Attachment E), prior to the next permit issuance.

7. Antibacksliding/Antidegradation

Effluent limits in this Order that are less stringent than those in the previous Order or are not retained from the previous Order comply with antibacksliding and antidegradation requirements for the reasons explained below:

- The single sample maximum effluent limit for enterococcus is not retained, as stated under Section C.2.f above. The removal of this limit complied with antibacksliding requirement and is not expected to cause degradation of water quality because the Discharge will maintain its treatment at current levels and the 5-day geometric mean limit will hold the discharge at its current performance.

- Effluent limitations for settleable matter are not retained. The Plant provides advanced secondary treatment, and the settleable matter effluent limits of the previous Order were technology-based effluent limitations for primary treatment. Compliance with the requirements of 40 CFR 133 and Basin Plan Table 4-2 will ensure removal of settleable solids to acceptably low levels - below 0.1 ml/L/hr (30 day average) and 0.2 ml/L/hr (daily maximum). The Basin Plan was amended on January 21, 2004, in part, because it mistakenly applied these limits to secondary and advanced treatment plants, and therefore, not retaining limits for settleable solids is consistent with the exception to the backsliding prohibition expressed at CWA section 402(o)(2)(B)(ii), when technical mistakes or mistaken interpretations of law were made in establishing the limitation in the previous permit. The removal of these limits is not expected to cause degradation of the receiving water because the Discharger will maintain its existing treatment performance. Limits for total suspended solids will also hold the Discharger at it current performance.

- The effluent limits for 4,4-DDE, dieldrin, heptachlor epoxide, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene are not retained in this Order because monitoring data during the past five years do not exhibit reasonable potential for these pollutants. The removal of these effluent limits is consistent with anti-backsliding requirements in accordance with State Water Board Order WQ 2001-16, and degradation is not expected because the Discharger will maintain its current performance.

E. Interim Effluent Limitations

1. Feasibility Evaluation and Interim Effluent Limits

The Discharger submitted an Infeasibility Analysis dated July 9, 2008, demonstrating that it cannot immediately comply with final WQBELs for dioxin-TEQ. As stated in the previous findings in Section IV.D.4.(d)(4), the Regional Water Board staff concurred with the Discharger's infeasibility assertion

This Order establishes a compliance schedule and an interim limit for dioxin-TEQ that will remain in effect for ten years following the effective date of this Order. Since there are not enough data to calculate a performance-based interim limit for dioxin-TEQ statistically, this Order establishes an interim limit based on the MLs of all congeners and their TEFs. The sum of the each congener's ML times its TEF is $6.3x10^{-5}$ µg/L and is established as a monthly average limit.

2. Compliance Schedule Requirements

The SIP and the Basin Plan authorize compliance schedules in a permit if an existing discharger cannot immediately comply with new and more stringent objectives. On April 15, 2008, the State Water Board adopted Resolution No. 2008-0025 (Compliance Schedule Policy), which includes compliance schedule policies for pollutants that are not addressed by the SIP. This Policy was approved by the USEPA on August 27, 2008. This Policy therefore supersedes the Basin Plan's compliance schedule policy. The compliance schedule for dioxin-TEQ is consistent with the Policy. The compliance schedule policy requires the following documentation to be submitted to the Regional Water Board to justify a compliance schedule:

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

The Discharger's Infeasibility Analysis shows that it has fulfilled these requirements.

3. Compliance Schedules for Dioxin-TEQ

The compliance schedule for dioxin-TEQ, and the requirements to submit reports on further measures to reduce concentrations to ensure compliance with final limits are based on the above compliance schedule policies. As previously described, the Discharger submitted an Infeasibility Report, and the Regional Water Board staff confirmed its assertions. Based on this, a compliance schedule is appropriate for dioxin-TEQ because the Discharger has made reasonable efforts towards characterizing the sources. However, time to allow additional efforts are necessary to achieve compliance.

Maximum allowable compliance schedules are granted to the Discharger for this pollutant because of the considerable uncertainty in determining effective measures (e.g., pollution prevention, treatment upgrades) that should be implemented to ensure compliance with final limits. It is appropriate to allow the Discharger sufficient time to first explore source control measures before requiring it to propose further actions, such as treatment plant upgrades, that are likely to be much more costly. This approach is supported by the Basin Plan section 4.13, which states; "In general, it is often more economical to reduce overall pollutant loadings into the treatment systems than to install complex and expensive technology at the Plant."

Dioxin-TEQ WQBELs are based on the Basin Plan narrative objective for bioaccumulation; therefore, the discharge qualifies for a 10-year compliance schedule from the date this Order becomes effective. Because of the ubiquitous nature of the sources of dioxin-TEQ, this provision allows the Discharger to address compliance with calculated WQBELs through other strategies such as mass offsets.

F. Land Discharge Specifications

Not Applicable.

G. Reclamation Specifications

Water reclamation requirements are regulated under Regional Water Board Order No. 93-160.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. Receiving Water Limitations V.A.1 and V.A.2 are based on the narrative and numeric objectives contained in Chapter 3 of the Basin Plan. The receiving water limits for total ammonia are no longer required because there are effluent limits to ensure compliance with the receiving water limits.

2. Receiving Water Limitations V.A.3 is in the previous Order, requires compliance with Federal and state law, and is self-explanatory.

B. Groundwater

Not applicable.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires 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 MRP, Attachment E, establishes monitoring and reporting requirements to implement federal and state requirements.

The principal purposes of a MRP are to:

- Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,

- Facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from waste discharge,

- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and to

- Prepare water and wastewater quality inventories.

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

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

A. Influent Monitoring

Influent monitoring requirements for flow, $CBOD_5$ and TSS are not changed from the previous Order and allow determination of compliance with this Order's 85 percent removal requirement. Influent monitoring for cyanide is required under the Basin Plan cyanide SSOs. However, the requirement is not new because the Discharger has been sampling cyanide according to its pretreatment requirements**.**

B. Effluent Monitoring

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

Monitoring for settleable matter is no longer required, as this Order does not retain the effluent limitation for this parameter.

Routine effluent monitoring is required for copper, nickel, cyanide, dioxin-TEQ, chlorodibromomethane, and ammonia because this Order establishes effluent limitations for these pollutants. Monitoring for all other priority toxic pollutants must be conducted in accordance with methods described in the Regional Water Board's August 6, 2001, Letter for major dischargers.

Semiannual monitoring for benzo(b)flouranthene, indeno(1,2,3-cd)pyrene, 4,4'-DDE, heptachlor epoxide, and dieldrin is no longer required because these pollutants no longer demonstrate reasonable potential.

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 monthly in order to demonstrate compliance with the Basin Plan's narrative toxicity objective. The Discharger conducted an effluent toxicity screening study prior to the expiration of the previous Order, which indicated *Ceriodaphnia dubia* is the most sensitive species for chronic toxicity testing. The Discharger shall re-screen during the anticipated term of this Order.

D. Receiving Water Monitoring

1. On April 15, 1992, the Regional Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the RMP for the San Francisco Bay. Subsequent to a public hearing and various meetings, Regional Water Board staff requested major permit holders in this Region, under authority of section 13267 of CWC, to report on the water quality of the estuary. These permit holders responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Bay RMP for Trace Substances. This Order specifies that the Discharger shall continue to participate in the RMP, which involves collection of data on pollutants and toxicity in water, sediment, and biota of the estuary.

2. Monitoring requirements for Renzel Marsh Pond are retained from the previous Order. The marsh is part of a habitat enhancement project, and continued monitoring is required to evaluate and maintain the health of the wetlands, as well as the health of the downstream receiving water – Matadero Creek.

E. Pretreatment and Biosolids Monitoring Requirements

Pretreatment monitoring requirements for the influent, effluent, and biosolids are retained from the previous Order, and are required to assess compliance with the Discharger's USEPA approved pretreatment program. Biosolids monitoring is required pursuant to 40 CFR Part 503.

This Order specifies the sampling type for pretreatment monitoring. Specifically, this Order requires multiple grabs for VOCs, BNA, cyanide, and hexavalent chromium to make the requirement consistent both with the Federal pretreatment requirements in 40 CFR 403.12, which require 24-hour composites, and with the Regional Water Board's August 6, 2001, Letter. Composites made up of discrete grabs for these parameters are necessary because of potential loss of the constituents during automatic compositing. VOCs are volatile; hexavalent chromium is chemically unstable; hexavalent chromium, cyanide, and BNAs are also somewhat volatile.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions (Provision VI.A)

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

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

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

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

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

C. Special Provisions (Provision VI.C)

1. Reopener Provisions

These provisions are based on 40 CFR 123 and allow modification of this Order and its effluent limitations, as necessary, to respond to updated information.

2. Special Studies and Additional Monitoring Requirements

a. **Effluent Characterization Study.** This Order does not include effluent limitations for priority pollutants that do not demonstrate Reasonable Potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the August 6, 2001, Letter and as specified in the MRP. If concentrations of these constituents increase significantly, the Discharger will be required to investigate the source of the increases and establish remedial measures, if the increases result in reasonable potential to cause or contribute to an excursion above the applicable WQC. This provision is based on the SIP and is retained from the previous Order.

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

c. **Chronic Toxicity Reduction Evaluation (TRE) Requirements.** This provision requires toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge and it establishes guidelines for these evaluations. This requirement is unchanged from the previous Order.

d. **Receiving Water Ammonia Characterization Study.** This study requires a study to characterize ammonia levels in both the Matadero Creek and South Bay. It will generate

new information for the Regional Water Board to evaluate the ammonia/unionized ammonia changes after mixing with receiving water, to develop an appropriate dilution credit for ammonia effluent limit calculation for the next permit reissuance. The Regional Water Board can also use the data to examine whether the receiving waters meet Basin Plan objectives for unionized ammonia.

e. **Optional Mass Offset Plan.** This option is provided to encourage the Discharger to further implement aggressive reduction of mass loadings of pollutants to South San Francisco Bay. If the Discharger wishes to pursue a mass offset program, it must submit a mass offset plan for reducing 303(d) listed pollutants to the same receiving water body for Regional Water Board approval. The Regional Water Board will consider any proposed mass offset plan and amend this Order accordingly.

f. **Optional Near-Field Site Specific Translator Study.** This provision is newly established by this Order. Site-specific translators were calculated for this Order for zinc, lead, and chromium (VI), using data collected from the Dumbarton Bridge RMP station. USEPA guidance for developing site-specific translators requires that site-specific translators be developed using data collected at near-field stations. The Discharger has the option to conduct a receiving water study to develop a data set for dissolved and total zinc, chromium (VI), and lead concentrations in the receiving water in the vicinity of the discharge for site-specific translator development in future permit reissuances.

3. Best Management Practices and Pollution Minimization Program

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

4. Construction, Operation, and Maintenance Specifications

a. **Wastewater Facilities, Review and Evaluation, and Status Reports.** This provision is based on the Basin Plan and is retained from the previous Order.

b. **Operations and Maintenance Manual, Review and Status Reports.** This provision is based on the Basin Plan, the requirements of 40 CFR 122 and is retained from the previous Order.

c. **Reliability Report.** This provision is retained from the previous Order and is required as part of reviewing requests for exceptions to the Basin Plan discharge prohibitions.

d. **Contingency Plan, Review and Status Reports.** This provision is based Regional Water Board Resolution 74-10 and is retained from the previous Order.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Program**. This provision is based on 40 CFR Part 403 (General Pretreatment Regulations for Existing and New Sources of Pollution) and is retained from the previous Order.

b. **Sludge Management Practices Requirements.** This provision is based on the Basin Plan (Chapter 4) 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 systems, 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 (SSMPs) 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 systems are part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions, section VI.C.5. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006.

The State Water Board amended the General Order on February 20, 2008 in Order No. WQ 2008-0002-EXEC, to strengthen the notification and reporting requirements for sanitary sewer overflows. The Regional Water Board issued a 13267 letter on May 1, 2008, requiring dischargers to comply with the new notification requirements for sanitary sewer overflows, and to comply with similar notification and reporting requirements for spills from wastewater treatment facilities. The Discharger has fulfilled this requirement by August 1, 2008.

6. Other Special Provisions

a. **Action Plan for Cyanide.** This provision is based on the Basin Plan, which contains SSOs for cyanide for San Francisco Bay (Regional Water Board Resolution R2-2006-0086). The Basin Plan requires an action plan for source control to ensure compliance with State and federal antidegradation policies. Additionally, because a dilution credit has been granted in establishing effluent limitations for cyanide, source control efforts are necessary for the continued exception to the Basin Plan prohibition regarding shallow water dischargers. The Discharger will need to comply with this provision upon the effective date of the permit.

b. **Action Plan for Copper.** This provision is based on the proposed Basin Plan Amendment that will adopt the SSOs for copper for San Francisco Bay (Resolution No. R2-2007-0042). South San Francisco Bay was listed in 1998 on the 303(d) impaired water body list as impaired by copper. Subsequent studies concluded that impairment of beneficial uses of the South Bay due to ambient copper concentrations was unlikely. The Regional Water Board previously adopted a Basin Plan amendment that included copper

SSOs and a Water Quality Attainment Strategy (WQAS) for copper in South San Francisco Bay. Its purpose was to prevent water quality degradation and ensure ongoing maintenance of the SSOs. The four elements of the WQAS were: (1) measures to minimize copper and nickel releases to South San Francisco Bay (baseline actions); (2) a receiving water monitoring program with statistically based water quality triggers for additional control measures if the triggers are exceeded; (3) a proactive framework for addressing increases to future copper and nickel concentrations in South Bay, if they should occur; (4) and metal translators for calculating copper and nickel effluent limitations for the South Bay municipal wastewater treatment plant dischargers. The previous Order required the Discharger to implement a Watershed Management Initiatives to comply with these Basin Plan requirements. Recently, the Regional Water Board and State Water Board approved another Basin Plan amendment (Resolution No. R2-2007-0042) that updated these requirements for South San Francisco Bay dischargers, which includes a copper action plan that applies to all San Francisco Bay dischargers and which is the basis of this provision. The Discharger will need to comply with this provision upon the effective date of this Order.

c. **Reclamation Programs.** This provision is retained from the previous Order. It requires the Discharger to maintain its reclamation programs as one of the conditions to get an exception of the Basin Plan discharge prohibition.

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d. **Compliance Schedule for Dioxin-TEQ.** The compliance schedule for dioxin-TEQ and the requirement to submit reports on further measures to reduce concentrations to ensure compliance with final limits are based on the Basin Plan section 4.7.6 and the State Water Board's Compliance Schedule Policy. Maximum compliance schedules are allowed because of the considerable uncertainty in determining effective measures (e.g., pollution prevention, treatment upgrades) that should be implemented to ensure compliance with final limits. It is appropriate to allow the Discharger sufficient time to first explore source control measures before requiring it to propose further actions, such as treatment plant upgrades, that are likely to be much more costly. This approach is supported by the Basin Plan (section 4.13), which states, "In general, it is often more economical to reduce overall pollutant loading into treatment systems than to install complex and expensive technology at the Plant.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, the San Francisco Bay Regional Water Board, is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for City of Palo Alto Regional Water Quality Control Plant. As a step in the WDRs adoption process, Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notifications were provided through Palo Alto Weekly on January 9 and March 6, 2009.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order, Attention: Tong Yin.

To receive full consideration and a response from Regional Water Board staff, written comments should be received at the Regional Water Board offices by 5:00 p.m. on February 13, 2009.

C. Public Hearing

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

Date: April 8, 2009

Time: 9 a.m.

Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: Tong Yin, (510) 622-2418, email tyin@waterboards.ca.gov

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

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/sanfranciscobay where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., except from noon to 1:00 p.m.,

Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 510-622-2300.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding 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 Tong Yin at 510-622-2418 (e-mail at TYin@waterboards.ca.gov).

ATTACHMENT H

Pretreatment Program Provisions

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

2. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Clean Water Act. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

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

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

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

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

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

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

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

5. The Discharger shall submit semiannual pretreatment reports to USEPA Region 9, the State 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, the information specified in Appendix B entitled, "Requirements for Semiannual Pretreatment Reports," which is made part of this Order. The semiannual reports are due July 31st (for the period January through June) and January 31st (for the

period July through December) of each year. The Executive Officer may exempt a Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and USEPA's comment and approval.

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

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

APPENDIX H-A

REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

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

1) Cover Sheet

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

2) Introduction

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

3) Definitions

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

4) Discussion of Upset, Interference and Pass Through

This section shall include a discussion of Upset, Interference or Pass Through incidents, if any, at the POTW(s) that the Discharger knows of or suspects were caused by industrial discharges. Each incident shall be described, at a minimum, consisting of the following information:

a) a description of what occurred;
b) a description of what was done to identify the source;
c) the name and address of the IU responsible
d) the reason(s) why the incident occurred;
e) a description of the corrective actions taken; and

f) an examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

5) **Influent, Effluent and Sludge Monitoring Results**

This section shall provide a summary of the analytical results from the "Influent, Effluent and Sludge Monitoring" as specified in Appendix C. The results should be reported in a summary matrix that lists monthly influent and effluent metal results for the reporting year.

A graphical representation of the influent and effluent metal monitoring data for the past five years shall also be provided with a discussion of any trends.

6) **Inspection and Sampling Program**

This section shall contain at a minimum, but is not limited to, the following information:

a) Inspections: the number of inspections performed for each type of IU; the criteria for determining the frequency of inspections; the inspection format procedures;
b) Sampling Events: the number of sampling events performed for each type of IU; the criteria for determining the frequency of sampling; the chain of custody procedures.

7) **Enforcement Procedures**

This section shall provide information as to when the approved Enforcement Response Plan (ERP) had been formally adopted or last revised. In addition, the date the finalized ERP was submitted to the Regional Water Board shall also be given.

8) **Federal Categories**

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

9) **Local Standards**

This section shall include a table presenting the local limits.

10) **Updated List of Regulated SIUs**

This section shall contain a complete and updated list of the Discharger's Significant Industrial Users (SIUs), including their names, addresses, and a brief description of the individual SIU's type of

business. The list shall include all deletions and additions keyed to the list as submitted in the previous annual report. All deletions shall be briefly explained.

11) **Compliance Activities**

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

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

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

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

(a) in consistent compliance;
(b) in inconsistent compliance;
(c) in significant noncompliance;
(d) on a compliance schedule to achieve compliance, (include the date final compliance is required);
(e) not in compliance and not on a compliance schedule;
(f) compliance status unknown, and why not.

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

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

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

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

(4) Criminal actions regarding the SIUs' apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local

limits and/or requirements. For each notice, indicate whether it was for an infraction of a federal or local standard/limit or requirement.

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

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

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

12) **Baseline Monitoring Report Update**

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

13) **Pretreatment Program Changes**

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

14) **Pretreatment Program Budget**

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

15) **Public Participation Summary**

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

16) **Sludge Storage and Disposal Practice**

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

17) **PCS Data Entry Form**

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

18) **Other Subjects (Not applicable)**

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

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

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

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

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

APPENDIX H-B

REQUIREMENTS FOR SEMIANNUAL PRETREATMENT REPORTS

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

1) **Influent, Effluent and Sludge Monitoring**

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

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

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

2) **Industrial User Compliance Status**

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

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

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

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

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

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

3) **POTW's Compliance with Pretreatment Program Requirements**

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

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

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

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

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

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

APPENDIX H-C

REQUIREMENTS FOR INFLUENT, EFFLUENT AND SLUDGE MONITORING

The Discharger shall conduct sampling of its treatment plant's influent, effluent and sludge at the frequency as shown in Table 3 on Page **xxxxx** of the Self-Monitoring Program (SMP).

The monitoring and reporting requirements of the POTW's Pretreatment Program are in addition to those specified in Table 1 of the SMP. Any subsequent modifications of the requirements specified in Table 1 shall be adhered to and shall not affect the requirements described in this Appendix unless written notice from the Regional Water Board is received. When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both Table 1 and the Pretreatment Program. The Pretreatment Program monitoring reports shall be sent to the Pretreatment Program Coordinator.

1. **Influent and Effluent Monitoring**

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

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

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

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

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

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

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

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

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

2. **Sludge Monitoring**

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

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

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

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

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

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

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

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

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

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

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

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

ATTACHMENT I – ACTIONS TO MEET THE REQUIREMENTS OF STATE WATER BOARD ORDER NO. WQ 90-5

In response to the State Water Board's Water Quality Control Policy for the Enclosed Bays and Estuaries of California (the Bays and Estuaries Policy, adopted in May 1974), which includes a general prohibition against the discharge of municipal and industrial wastewaters to enclosed bays and estuaries, the Regional Water Board has included the following discharge prohibitions in Table 4-1 of the Basin Plan.

> It shall be prohibited to discharge any wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimal initial dilution of at least 10:1, or into any non-tidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof.
>
> It shall be prohibited to discharge any wastewater which has particular characteristics of concern to San Francisco Bay south of the Dumbarton Bridge.
>
> Due to locations south of the Dumbarton Bridge and discharges to receiving waters where 10:1 minimum initial dilution is not achieved, these prohibitions essentially preclude discharges of treated wastewater from the wastewater treatment plants of San Jose/Santa Clara, Palo Alto, and Sunnyvale. In 1973, these dischargers formed the South Bay Dischargers Authority to address the possibility of relocating their outfalls to a location north of the Dumbarton Bridge, and gave attention to an exception to the discharge prohibitions allowed by the Basin Plan, and consistent with the *Bays and Estuaries Policy*, when a net environmental benefit is realized as a result of the discharge. Based on results of studies conducted between1981 through 1986 showing net environmental benefit, in 1987, with applications for reissuance of their discharge permits, the three South Bay dischargers petitioned the Regional Water Board for exceptions to the discharge prohibitions.
>
> In the same time period that the South Bay dischargers were addressing the discharge prohibitions, the Regional Water Board was establishing water quality objectives for many toxic pollutants in San Francisco Bay. An amendment of the Basin Plan in 1986 established several such water quality objectives, which corresponded to then current EPA recommended water quality criteria. Due to the unique hydrodynamic environment of South San Francisco Bay and implications of non-point pollution sources, however, the 1986 Basin Plan amendment exempted South San Francisco Bay from the newly adopted water quality objectives and required development of site-specific water quality objectives.
>
> In reissuing permits to Sunnyvale (Order No. 88-176) and Palo Alto (Order No. 88-175) in 1988, the Regional Water Board found that discharges from these wastewater treatment facilities would provide a net environmental benefit and water quality enhancement. Exceptions to the Basin Plan discharge prohibitions were therefore granted provided that the dischargers conduct several studies, addressing salt marsh conversion, development of site-specific water quality objectives and effluent limitations for metals, ammonia removal, and avian botulism control. The Regional Water Board found that discharges from the San Jose/Santa Clara WPCF did not provide a net environmental benefit and water quality enhancement, and in particular cited the conversion, caused by the discharge, of extensive salt marsh habitat to brackish and freshwater marsh. The Regional Water Board concluded, however, that a finding of "net environmental benefit" could be made if the Discharger provided mitigation for the loss of salt marsh habitat; and if such mitigation was accomplished, then an exception, like that granted to Sunnyvale and Palo Alto, would be appropriate. On January 18, 1989, a Cease and Desist Order (Order No. 89-013), establishing a time schedule for either compliance with the Basin Plan prohibitions or

mitigation for the loss of salt marsh habitat, was adopted concurrently with the reissued discharge permit (Order No. 89-012) for the San Jose/Santa Clara facility.

In addition to addressing the exceptions to the Basin Plan's discharge prohibitions, the three reissued permits established a process to develop site-specific water quality objectives and effluent limitations for metals. Interim limitations, based on objectives in the 1982 Basin Plan, were established and were to be replaced by performance based interim limitations after one year. Ultimately, final effluent limitations would be established based on objectives from the 1986 Basin Plan or based on site-specific studies, which were mandated by the permits.

Responding to objections from environmental groups regarding the reissued permits for the three South Bay dischargers, on October 4, 1990, the State Water Board adopted Order No. WQ 90-5 to address three issues: (a) the conditional exceptions granted to Sunnyvale and Palo Alto and denied to San Jose/Santa Clara regarding the Basin Plan discharge prohibitions, (b) regulation of toxic pollutants, and (c) mitigation for the loss of salt marsh habitat.

As described by Order No. WQ 90-5, the State Water Board concluded that all three South Bay dischargers had failed to demonstrate that exceptions to the Basin Plan discharge prohibitions should be granted on the basis of net environmental benefit. The State Water Board explained that impacts of nutrient loading in South San Francisco Bay remained unresolved, that avian botulism was negatively impacting wildlife and estuarine habitat, and that discharges of metals were contributing or threatening to contribute to impairment of San Francisco Bay. In addition, discharges from the San Jose/Santa Clara facility, specifically, had a substantial adverse impact on rare and endangered species resulting from the loss of salt marsh habitat.

Through Order No. WQ 90-5, the State Water Board did acknowledge that relocation of the discharges to a location north of the Dumbarton Bridge was not an economically or environmentally sound solution to the issues associated with the South Bay discharges; although if the discharges were, in fact, located north of the Dumbarton Bridge, they would need to comply with water quality objectives for toxic pollutants, which were incorporated into the Basin Plan in 1986. The State Water Board "strongly encouraged" the Regional Water Board and the South Bay Dischargers Authority to pursue wastewater reclamation projections as a means to reduce discharges to San Francisco Bay, and it also concluded that exceptions to the Basin Plan discharge prohibitions could be granted on the basis of "equivalent protection" (i.e., protection equivalent to relocating the discharges to a location north of the Dumbarton Bridge), provided that certain conditions were met. In Order No. WQ 90-5, the State Water Board stated that exceptions to the Basin Plan discharge prohibitions could be granted in the South Bay permits, on the basis of "equivalent protection," (a) if the discharge permits include numeric, water quality based limitations for toxic pollutants; (b) if the dischargers continue efforts to control avian botulism; and (c) if the dischargers properly protect rare and endangered species by limiting flows discharged to San Francisco Bay to not more than 120 MGD (average dry weather flow) or to flows which would not further adversely impact rare or endangered species, and by providing for the creation or restoration of 380 acres of wetlands.

The following text briefly describes, chronologically, actions taken by the State and Regional Water Boards and the City of Palo Alto shortly before and after adoption of State Water Board Order No. WQ 90-05. This summary also clarifies the origin of some provisions that appear in this Order.

Regional Water Board Order No. 90-034 (February 21, 1990) amended Order No. 88-175.

- Established interim performance based limits, at the 95 percent confidence level, for As, Cd, Cr^{+6}, Cu, Pb, Hg, Ni, Ag, Zn, CN, phenolic compounds, PAHs, and Se. Interim limits were to remain effective while SSOs were being developed, and site-specific limits had to be in place by December 31, 1991. [The Basin Plan had not established WQ objectives for metals in South San Francisco Bay, and the Discharger was obligated to assist in gathering data for development of SSOs and effluent limitations.]

- Interim mass based limits were established for the same pollutants to maintain ambient conditions in South San Francisco Bay until SSOs and site-specific limits were in place by December 31, 1991. [Interim limits were needed for metals because of the lack of assimilative capacity in San Francisco Bay, although loadings of metals to San Francisco Bay had diminished since 1975.]

Regional Water Board Order No. 90-069 (May 16, 1990) amended Order No. 88-175.

- By August 1, 1991, required implementation of additional source control measures, including pretreatment program improvements, to reduce toxic pollutants in influent wastewater

- By December 1, 1990 required submittal of an interim report regarding progress of implementing additional source control measures.

State Water Board Order No. WQ 90-05 was adopted on October 4, 1990.

Regional Water Board Order No. 91-068 (April 17, 1991) amended Order No. 88-175 to comply with State Water Board Order No. 90-5.

- Previous work did not support a finding of "net environmental benefit" and "water quality enhancement." Exceptions to the Basin Plan prohibitions could be granted, however, based on "equivalent protection," if certain conditions can be satisfied: (1) WQBELs for toxic pollutants must be included in the facility's discharge permit, (2) the discharge permit must include mass limits for toxic pollutants, and (3) a chronic toxicity limitation is included in the permit.

- The permit was amended to state that "water quality objectives for South San Francisco Bay exist, and are appropriate to use when developing water quality based effluent limitations. The Discharger is currently conducting studies which may lead to development of new site-specific objectives for copper, lead, mercury, and nickel. The Regional Board is also developing Bay-wide objectives for copper and nickel. New proposed objectives for the South Bay, and any subsequent changes in effluent limitations, will be considered at the next permit reissuance." Order No. 91-068 states that "[o]n April 11, 1991, the State Board adopted water quality objectives for the State in its Bays and Estuaries Plan. Those objectives are applicable to San Francisco Bay below Dumbarton Bridge." [Note that the State Water Board's Bays and Estuaries Plan, as well as an Inland Surface Waters Plan, which was also adopted in 1991, were rescinded in 1994.] The Order also contained a requirement to conduct a TRE/TIE for chronic toxicity prior to permit expiration, and that a chronic toxicity limitation would be adopted at the next permit issuance.

- Order No. 91-068 established new, interim, concentration based limits for As, Cd, Cr^{+6}, Cu, Pb, Hg, Ni, Ag, Zn, and Se; and new, interim, mass-based limitations for As, Cd, Cr^{+6}, Cu, Pb, Hg, Ni, Ag, Zn, Se, CN, phenols, and PAHs.

Regional Water Board Order No. 93-085 (July 21, 1993) reissued NPDES/Waste Discharge Requirements for the City of Palo Alto.

- Consistent with the requirements of State Water Board Order No. 90-5, this Order contained water quality based effluent limits for toxics, and mass loadings limits for metals, and therefore granted exceptions to the Basin Plan discharge prohibitions.

- Chronic toxicity was addressed by incorporating all permit amendments contained in the Blanket Chronic Toxicity Order (Regional Water Board Order No. 92-104).

Regional Water Board Cease and Desist Order No. 93-083 (July 21, 1993).

- The Cease and Desist Order addressed significant violations of effluent limitations established by Order No. 91-068 for copper and nickel between May 1991 and August 1992, and included compliance schedules to come into full compliance with the requirements of Order No. 93-085 for copper and nickel.

Regional Water Board Order No. 98-054 (June 17, 1998) reissued NPDES/Waste Discharge Requirements for the City of Palo Alto.

- Effluent limitations for copper and nickel were based on (then) current performance of the treatment plant to ensure that ambient conditions in South San Francisco Bay would be maintained. These limitations reflected the 99.7th percentile of Plant performance from 1995 through 1997. For all other toxic pollutants with limitations established by the Order, limitations were based on the 1995 Basin Plan or USEPA criteria (i.e., mercury, nickel, selenium, and tributyltin).

- Continued exceptions to the Basin Plan discharge prohibitions were granted, as effluent limitations which are substantially equivalent to the effluent limitations in the 1993 NPDES permit, and requirements to conduct studies to develop water quality based mass loading limits for metals, measures to maximize reclamation and minimize effluent discharge and the continued operation of the Plant at a high degree of reliability are required by the permit.

- The Regional Water Board expected SSOs for copper and nickel to be developed during the anticipated term of Order No. 98-054; and it established requirements in the Order for the Discharger to participate in TMDL development.

- Order No. 98-054 established compliance with the Basin Plan narrative objective for chronic toxicity to be demonstrated through monitoring, and required accelerated monitoring upon exceedance of chronic toxicity "triggers."

Regional Water Board Order No. R2-2002-0061 (May 22, 2002) adopted a Basin Plan amendment establishing SSOs for copper and nickel in the San Francisco Bay south of Dumbarton Bridge.

State Water Board Resolution No. 2002-0151 (October 17, 2002) granted State Water Board approval of SSOs for copper and nickel for the South San Francisco Bay, which were subsequently approved by USEPA on January 21, 2003.

Regional Water Board Order No. R2-2003-0078 (August 20, 2003) reissued NPDES/Waste Discharge Requirements for the City of Palo Alto.

- The Order contained requirements for the Discharger to comply with the Copper and Nickel Action Plans.

- The Order did not automatically carry over mass-based limitations for metals from the previous permit, as water quality-based effluent limitations of the Order were established based on guidance of the California Toxics Rule and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (the CTR and the SIP, which both became effective on May 18, 2000).

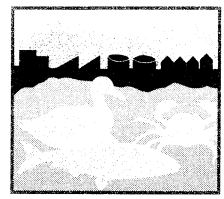
- Based on its findings regarding the establishment of water quality-based effluent limitations, and continuing a marsh reclamation program (which is unrelated to State Water Order 90-5), the permit continued exceptions to the Basin Plan discharge prohibitions.

Appendix B

COMMENT LETTERS

Regional Water Quality Control Plant

Operated by the City of Palo Alto
for the East Palo Alto Sanitary District,
Los Altos, Los Altos Hills, Mountain View,
Palo Alto, and Stanford



February 12, 2009

Bill Johnson
Senior Environmental Scientist
NPDES Division
San Francisco Bay Regional Water Board
1515 Clay Street, Suite 1400
Oakland CA 94612

Subject: Transmittal of Comments on Palo Alto Tentative order

Dear Mr. Johnson,

Enclosed please find Palo Alto's comments on the Tentative Order that was issued for the City on December 24, 2008. We greatly appreciate your willingness to extend the original due date for comments, and the time that you and other Regional Water Board staff devoted to meeting with us to discuss the City's concerns with aspects of the Tentative Order.

Thank you for your consideration of these comments. Please call me at (650) 329-2104 if you have any questions or need additional information.

Sincerely,

Brad Eggleston
Manager, Environmental Control Programs

Enclosure

2501 Embarcadero Way Palo Alto Ca 94303 Tel.: (650) 329-2598 Fax: (650) 494-3531

City of Palo Alto
2009 NPDES Permit Renewal

Comments Regarding NPDES Permit Tentative Order

February 12, 2009

The City of Palo Alto (City) appreciates the opportunity to submit the following comments on the Tentative Order (TO) reissuing the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of treated wastewater to San Francisco Bay. The City would also like to commend your staff for their diligence and care in preparing these documents.

1. **The existing effluent limits for total ammonia in the current permit should be retained, or the effluent limits should be calculated using a dilution credit to obtain ammonia limits with which the City can comply.**

The permit proposes effluent limits for ammonia that were calculated without dilution credits using the pH and unionized ammonia fraction data from the nearest RMP monitoring station. As described in detail in the Ammonia Limits Analysis and Recommendations memorandum submitted by the City on January 15, 2009, the pH of the City's undiluted effluent has a significantly lower pH than the receiving water. Effluent limits calculated using the pH of the receiving water and applied to the City's undiluted effluent are much more stringent than necessary to assure compliance with Basin Plan objectives for unionized ammonia.

The City is unable to comply with the ammonia limits of AMEL = 1.4 and MDEL = 5.0 proposed in the permit. Table F-3 in the Tentative Order states that the City's highest monthly average ammonia concentration from January 2003 through January 2008 was 1.94 mg/L. Page F-31 of the Tentative Order states that the 95^{th} and 99^{th} percentiles of the lognormally distributed ammonia effluent data set are 2.6 mg/L and 5.1 mg/L, respectively. These values are higher than the proposed limits. The principal reason that the City can not comply with the proposed ammonia limits is that the City has experienced periodic episodes of incomplete nitrification. During these episodes, ammonia is not completely oxidized to nitrate, so that higher than usual concentrations of ammonia are present in the effluent. Although these data were not evaluated during the permit renewal process, a serious episode of nitrification inhibition occurred in February 2002. The maximum daily sample concentration during February 2002 was 8.6 mg/L and the monthly average concentration of the ten samples collected in February 2002 was 2.72 mg/L. The City has spent considerable staff and monetary resources over several years working with Stanford University researchers in an attempt to characterize nitrifying bacterial populations in its activated sludge process and to understand the factors that can cause population shifts and incomplete nitrification. These efforts have not resulted in tools that enable the City to diagnose and prevent nitrification inhibition. While very serious inhibition episodes have not occurred recently, the City has no reason to believe that they will not occur in the future.

An additional reason that the City is unable to comply with the proposed ammonia limits is that the City must add approximately 1 mg/L of ammonia to its secondary effluent to ensure that

disinfection is effected with chloramines and not with free chlorine. This addition is necessary to prevent the formation of disinfection byproducts, and of chlorodibromomethane in particular. Prior to the ammonia addition program, the City's effluent regularly contained concentrations of chlorodibromomethane exceeding the CTR water quality objective of 34 µg/L. The possibility of equipment or operator error in adding this relatively small concentration of ammonia is of great concern because the 1.4 mg/L proposed effluent limit is so close to the 1 mg/L addition.

The City requests that ammonia limits be calculated using either the City's effluent data set or the City's 1:1 mixing analysis, both of which are presented in the January 15, 2009 memorandum. Limits derived from either of these methods, according to the current Regional Water Board procedures for determining ammonia effluent limits, would ultimately result in the retention of the existing ammonia limits of AMEL = 3 mg/L and MDEL = 8 mg/L. Alternatively, the City is comfortable with Regional Water Board staff's suggestion that limits be calculated using the unionized ammonia fraction of the receiving water and a D=1 dilution credit. Regional Water Board staff have stated that this approach would also yield limits that are consistent with existing limits.

With regard to the City's second discharge point through Renzel Marsh Pond into Matadero Creek, the City believes that retaining the existing ammonia limits will continue to be protective of Matadero Creek. The hydraulic retention time of the effluent in Renzel Marsh Pond is long enough that ammonia present in the effluent would attenuate through oxidation and nutrient uptake before being discharged to Matadero Creek. However, data are currently not available to definitively confirm that this is the case. Therefore, the City proposes that a Special Study be added to Provision C.2 of the permit that would require the City to demonstrate that unionized ammonia objectives are not exceeded in Matadero Creek. A provision for inclusion in the permit is suggested below.

f. Matadero Creek Unionized Ammonia Study

The Discharger shall conduct a one-year study to verify that the discharge from Renzel Marsh Pond does not cause exceedances of the Basin Plan unionized ammonia water quality objectives in Matadero Creek. The Discharger shall follow the tasks and schedule below.

Table 11: Matadero Creek Unionized Ammonia Study Tasks and Schedules

Task	Schedule
(1) Submit a one-year study plan acceptable to the Executive Officer.	Within 60 days of Order effective date.
(2) Commence data collection.	Within 45 days after submitting the study plan if the Executive Officer does not comment on the study plan.
(3) Submit a final study report documenting any unionized ammonia impacts of the discharge from Renzel Marsh Pond to Matadero Creek.	Within 60 days after completing one-year data collection.

2. a. Provision VI.C.6.c should be revised to be consistent with previous permits and to address the City's reclamation program as a whole.

Previous permits have identified the recycled water program and the discharge to Renzel Marsh Pond as reclamation activities in the permit findings, and then required continuation of the reclamation program as a permit provision. Provision VI.C.6.c of the Tentative Order requires that the Renzel Marsh Pond reclamation program be continued, but does not reference the recycled water component of the City's reclamation program. Fact Sheet section VII.C.c states that Provision VI.C.6.c is retained from the previous Order. The requirement that the Renzel Marsh Pond reclamation program be continued is different from the previous Order in that it is specific to this one portion of the City's reclamation program, instead of requiring that the City continue the overall reclamation program. The City needs to have the flexibility to increase and decrease the various components of its reclamation program as needed.

2. b. The maximum single day flow rate identified in Finding II.B.2 should be corrected.

Finding II.B.2 of the Tentative Order identifies 80 MGD as the "maximum single day effluent flow rate from 2003-2008". 80 MGD is the maximum instantaneous effluent flow rate. The single day maximum effluent flow rate occurred on January 2, 2006, with an effluent flow rate of 46.4 MGD.

To address these two comments, which are technically unrelated but are contained in the same paragraphs in the permit, the City requests that the following changes to the permit and fact sheet be made to retain the requirements of the previous permit.

Tentative Order Section II.B.2

Discharge Description. The Plant has an average dry weather flow design capacity of 39 MGD with full tertiary treatment, and a peak wet weather flow capacity of 80 MGD with full secondary treatment. The average dry weather flow, based on flows from June through October, was 23.4 MGD during 2004-2007; the average daily effluent flow rate was 24.8 MGD, based on flow data from 2003-008; and the maximum single day effluent flow rate from 2003-2008 was ~~80~~ 46.4 MGD. Approximately 95% of the treated wastewater is discharged to an unnamed manmade channel, tributary to South San Francisco Bay through outfall 001 (Latitude 37° 27' 30" and Longitude 122° 06' 37"). Approximately 5% of the treated wastewater is discharged to the Renzel Marsh Pond through outfall 002 (Latitude 37° 26' 30" and Longitude 122° 06' 45"), where the treated wastewater ~~overflows~~ flows via a controlled outfall to Mate~~a~~adero Creek. The discharge to the Renzel Marsh Pond is a reclamation project that supports a habitat restoration project initiated by the Discharger to enhance a habitat area cut off from freshwater and saltwater inflow by a series of levees and roads built in the early and mid 1900s. The project created a 15-acre freshwater pond with treated effluent ~~and~~. Because Renzel Marsh Pond is exclusively maintained by the Plant's discharge; does not receive water flows from other sources, such as storm water or inflow from Matadero Creek; and has a controlled outfall to Matadero Creek, it is not a water of the State or United States. Therefore the receiving water for outfall 002 is Matadero Creek. Both the unnamed channel and Mate~~a~~adero Creek are waters of the United States.

Tentative Order Section II.B.5

Reclamation Activities. Approximately 0.25 MGD of tertiary treated, chloraminated wastewater undergoes additional filtration and chlorination prior to use for irrigation and dust suppression purposes, as well as use in the City of Palo Alto duck pond. Reclaimed water production is expected to increase to approximately 3 MGD upon completion of the Mountain View pipeline project in early 2009. The Discharger's reclamation activities are regulated under Regional Water Board Order No. 92-160. The discharge to Renzel Marsh Pond described in Section II.B.2 of this Order is also a component of the Discharger's reclamation program.

Tentative Order Section VI.C.6.c

~~**Renzel Marsh Pond Reclamation Program**~~**Reclamation Programs**.
The Discharger shall continue to implement the reclamation programs described in Section II.B.5 of this Order. ~~program initiated in 1992 by supplying freshwater tertiary-treated effluent to Renzel Marsh Pond. The reclamation project enhances a habitat area that was previously cut off from freshwater and saltwater inflow by a series of levees and roads built in the early 1900s. The Discharger shall also continue to monitor the effects of the discharge on the receiving water as described in section VIII of the MRP (Attachment E).~~

Tentative Order Fact Sheet Section VII.C.c

~~**Renzel Marsh Pond**~~ **Reclamation Program**. This provision is retained from the previous Order. ~~The discharge provided by the Discharger maintains a freshwater pond in Renzel Marsh Pond, which creates habitat for shoreline and migratory birds.~~

3. Table E-7 for pretreatment monitoring is a new table for permits and should be removed because it is not consistent with other Region 2 monitoring requirements.

The pretreatment monitoring requirements in Table E-7 directly conflict with other monitoring requirements in the region. For example, multiple options for mercury analytical methods are "suggested," whereas the Mercury Watershed Permit made effective by the San Francisco Bay Regional Water Board on March 1, 2008 requires that (only) 1631 be used. Additionally, compositing requirements are different from other parts of the permit These differing requirements would result in additional expense to analyze multiple grab samples, as well as requiring the City to calculate flow-weighted averages of data that consist primarily of non-detect data points. Table E-7 also suggests that hazardous waste methods (8000 series) may be used to analyze wastewater samples. The City requests that Table E-7 be removed because the conflicting requirements cause confusion; the table is not needed because the analytical approaches are indicated in other places.

4. The monitoring requirements for Organic Priority Pollutants in Table E-5 for Renzel Marsh Pond effluent should be changed to be consistent with the previous permit.

Since the construction of Renzel Marsh Pond in 1992, the City's NPDES permits have contained a requirement to monitor for organic priority pollutants once every two years, which was abbreviated as "2Y" in the permits' sampling schedule tables. Organic priority pollutants were understood to refer to volatile and semivolatile organics, which can be analyzed using EPA Methods 624 and 625. The Tentative Order includes a monitoring frequency of "2/year" for organic priority pollutants at Renzel Marsh Pond effluent, and also defines these pollutants as "the organic pollutants identified by the California Toxics Rule at 40 CFR 131.38". Section VI.D.2 of the Tentative Order Fact Sheet states that the monitoring requirements for Renzel Marsh Pond are retained from the previous order.

In preparation for submittal of these comments, the City reviewed past volatile and semivolatile organics monitoring data for the Renzel Marsh Pond effluent in order to demonstrate that the routine monitoring done at EFF-001 and EFF-002 is adequate to characterize the Renzel effluent. In the course of this review, the City determined that this monitoring had not been completed since 2002. This lapse apparently resulted from a misunderstanding of the applicable monitoring requirements when the City's permit was last renewed in 2003. The City will report the missed sampling events in its next NPDES Monthly Report. While the status of the prior years' monitoring was still being examined, the City collected samples for 2009. Upon determining that monitoring had not occurred during the previous years, the laboratory was asked to expedite the 2009 sample analysis so that they could be submitted with these comments. The laboratory report is attached. Renzel Marsh Pond effluent results for 2000, 2001, 2002, and 2008 are provided for volatile and semivolatile organics in the following table.

Sample Date	Volatile Organics Results	Semivolatile Organics Results
2/22/2000	All non-detect	All non-detect
9/27/2001	Four trihalomethanes[1] detected at 0.88 – 2.2 µg/L	All non-detect
11/15/2002	Four trihalomethanes detected at 0.6 – 1.5 µg/L	All non-detect
2/3/2009	All non-detect	All non-detect

Organic pollutants detected in the Renzel Marsh Pond effluent have been limited to the trihalomethane disinfection byproducts that result from chlorination. Concentrations of these trihalomethanes in the City's effluent measured at EFF-001 and EFF-002 have decreased dramatically since the successful implementation of chloramination in early 2007. However, the City does not object to retaining the biannual monitoring for volatile and semivolatile organics that has historically occurred. Given the Fact Sheet language quoted above, the City believes that the sampling frequency was inadvertently changed from biannual to semiannual. The City requests that the "once every two years" sampling frequency of the current permit be retained, and

[1] Bromoform, Chloroform, Chlorodibromomethane, and Dichlorobromomethane

that the footnote requiring monitoring for all California Toxics Rule organics be removed.

5. The City requests that the dioxin-TEQ final limits be removed.

The City requests that the dioxin-TEQ numeric final effluent limits be removed because there is no approved numeric water quality objective for dioxin-TEQ. The congeners detected in the fish tissue samples which form the basis for the dioxin 303(d) listing and the congeners detected in publicly-owned treatment works are different. The City's effluent characteristics for dioxin-TEQ indicate that it is not feasible to meet these limits. There is no value in developing a numerical standard at this time since dioxin at these levels can not even be measured. The recognized source of dioxin is air emissions and combustion. The City does not have the authority to control or prevent these sources.

6. The compliance schedule action plan for dioxin-TEQ is neither realistic nor commensurate with actual water quality impacts.

The congeners detected in fish tissue samples which form the basis for the dioxin 303(d) listing are different than the congeners detected in publicly-owned treatment works. As a result, there is nothing a municipal wastewater treatment plant could do to its effluent to reduce the concentrations of dioxin congeners found in fish tissue, which is the basis for these requirements.

Although an optional offset provision (as described in Task 5) may provide an alternative to compliance with a final effluent limit for dioxin-TEQ, such a program does not currently exist. Until such a program that includes a feasible implementation strategy is developed, the City believes this is not a realistic alternative and it is misleading to expect that such a program would lead to compliance.

For these reasons, the City requests that the compliance schedule for dioxin-TEQ be removed, along with the final limit.

Thursday, February 12, 2009

Brian Jones
City of Palo Alto
2501 Embarcadero Way
Palo Alto, CA 94303

RE:	Lab Order:	J020209	Collected By:	Brian Jones
	Project ID:	FRESH MARSH EFFLUENT	PO/Contract #:	4609000030

Dear Brian Jones:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, February 04, 2009. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Enclosures

Project Manager: Sonya Babcock

Lab Director: Christine Horn

1885 North Kelly Road • Napa, California 94558
(707) 258-4000 • Fax (707) 226-1001 • e-mail: info@caltestlabs.com

SAMPLE SUMMARY

Lab Order: J020209

Project ID: FRESH MARSH EFFLUENT

Lab ID	Sample ID	Matrix	Date Collected	Date Received
J020209001	**FRESH MARSH EFFLUENT-1&2**	Water	2/3/2009 14:00	2/4/2009 16:35

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NARRATIVE

Lab Order: J020209

Project ID: FRESH MARSH EFFLUENT

General Qualifiers and Notes

Caltest authorizes this report to be reproduced only in its entirety. Results are specific to the sample(s) as submitted and only to the parameter(s) reported.

Caltest certifies that all test results for wastewater and hazardous waste analyses meet all applicable NELAC requirements; all microbiology and drinking water testing meet applicable ELAP requirements, unless stated otherwise.

All analyses performed by EPA Methods or Standard Methods (SM) 18th Ed. except where noted.

Caltest collects samples in compliance with 40 CFR, EPA Methods, Cal. Title 22, and Standard Methods.

Dilution Factors (DF) reported greater than '1' have been used to adjust the result, Reporting Limit (RL), and Method Detection Limit (MDL).

All Solid, sludge, and/or biosolids data is reported in Wet Weight, unless otherwise specified.

Laboratory filtration for dissolved metals (excluding mercury) and/or pH analysis was not performed within the 15 minute holding time as specified by 40CFR 136.3 table II.

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

ND - Non Detect - indicates analytical result has not been detected.

RL - Reporting Limit is the quantitation limit at which the laboratory is able to detect an analyte. An analyte not detected at or above the RL is reported as ND unless otherwise noted or qualified. For analyses pertaining to the State Implementation Plan of the California Toxics Rule, the Caltest Reporting Limit (RL) is equivalent to the Minimum Level (ML). A standard is always run at or below the ML. Where Reporting Limits are elevated due to dilution, the ML calibration criteria has been met.

J - reflects estimated analytical result value detected below the Reporting Limit (RL) and above the Method Detection Limit (MDL). The 'J' flag is equivalent to the DNQ Estimated Concentration flag.

E - indicates an estimated analytical result value.

B - indicates the analyte has been detected in the blank associated with the sample.

NC - means not able to be calculated for RPD or Spike Recoveries.

SS - compound is a Surrogate Spike used per laboratory quality assurance manual.

NOTE: This document represents a complete Analytical Report for the samples referenced herein and should be retained as a permanent record thereof.

Qualifiers and Compound Notes

1 Sample diluted due to a high concentration of non-target analyte(s), resulting in increased reporting limits.

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(707) 258-4000 • Fax (707) 226-1001 • e-mail: info@caltestlabs.com

ANALYTICAL RESULTS

Lab Order: J020209

Project ID FRESH MARSH EFFLUENT

Lab ID: **J020209001** Date Collected: 2/3/2009 14:00 Matrix: Water

Sample ID: **FRESH MARSH EFFLUENT-1&2** Date Received: 2/4/2009 16:35

Parameters	Result	Units	R. L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Semivolatile Organic Analysis	**Prep Method:**		EPA 625		**Prep by:** JC				
	Analytical Method:		EPA 625				**Analyzed by:** NTA		
Acenaphthene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Acenaphthylene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Anthracene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Benzidine	ND	ug/L	10	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Benzo(a)anthracene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Benzo(a)pyrene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Benzo(b)fluoranthene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Benzo(g,h,i)perylene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Benzo(k)fluoranthene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Benzyl butyl phthalate	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
4-Bromophenyl phenyl ether	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
bis(2-Chloroethoxy) methane	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
bis(2-Chloroethyl) ether	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
bis(2-Chloroisopropyl) ether	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
4-Chloro-3-methylphenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2-Chloronaphthalene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2-Chlorophenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
4-Chlorophenyl phenyl ether	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Chrysene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Dibenzo(a,h)anthracene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
1,2-Dichlorobenzene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
1,3-Dichlorobenzene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
1,4-Dichlorobenzene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
3,3'-Dichlorobenzidine	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2,4-Dichlorophenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Diethylphthalate	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2,4-Dimethylphenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Dimethylphthalate	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Di-n-butylphthalate	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2,4-Dinitrophenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2,4-Dinitrotoluene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2,6-Dinitrotoluene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Di-n-octylphthalate	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
1,2-Diphenylhydrazine/Azo	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
bis(2-Ethylhexyl)phthalate	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Fluoranthene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Fluorene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Hexachlorobenzene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	

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ANALYTICAL RESULTS

Lab Order: J020209

Project ID FRESH MARSH EFFLUENT

Lab ID: **J020209001** Date Collected: 2/3/2009 14:00 Matrix: Water

Sample ID: **FRESH MARSH EFFLUENT-1&2** Date Received: 2/4/2009 16:35

Parameters	Result	Units	R. L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Hexachlorobutadiene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Hexachlorocyclo pentadiene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Hexachloroethane	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Indeno(1,2,3-cd)pyrene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Isophorone	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2-Methyl-4,6-dinitrophenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Naphthalene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Nitrobenzene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2-Nitrophenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
4-Nitrophenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
N-Nitrosodimethylamine	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
N-Nitroso-di-n-propylamine	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
N-Nitrosodiphenylamine	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Pentachlorophenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Phenanthrene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Phenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Pyrene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2,4,6-Trichlorophenol	ND	ug/L	5.0	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2-Fluorophenol (SS)	27	%	5-61	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Phenol-d6 (SS)	20	%	6-65	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Nitrobenzene-d5 (SS)	42	%	10-101	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2-Fluorobiphenyl (SS)	22	%	8-90	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
2,4,6-Tribromophenol (SS)	85	%	2-146	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Terphenyl-d14 (SS)	75	%	5-124	1	02/05/09 00:00	SPR 3435	02/10/09 10:02	SMS 1682	
Volatile Organic Analysis	**Analytical Method:**	EPA 624					**Analyzed by:**	CWC	
Acrolein	ND	ug/L	20	5			02/06/09 01:37	VMS 2063	1
Acrylonitrile	ND	ug/L	10	5			02/06/09 01:37	VMS 2063	
Benzene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Bromodichloromethane	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Bromoform	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Bromomethane (Methyl Bromide)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Carbon tetrachloride	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Chlorobenzene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Chloroethane (Ethyl Chloride)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
2-Chloroethyl vinyl ether	ND	ug/L	5.0	5			02/06/09 01:37	VMS 2063	
Chloroform	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Chloromethane(Methyl Chloride)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Dibromochloromethane	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	

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ANALYTICAL RESULTS

Lab Order: J020209

Project ID FRESH MARSH EFFLUENT

Lab ID: **J020209001** Date Collected: 2/3/2009 14:00 Matrix: Water

Sample ID: **FRESH MARSH EFFLUENT-1&2** Date Received: 2/4/2009 16:35

Parameters	Result	Units	R. L.	DF	Prepared	Batch	Analyzed	Batch	Qual
1,2-Dichlorobenzene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
1,3-Dichlorobenzene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
1,4-Dichlorobenzene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Dichlorodifluoromethane (F-12)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
1,1-Dichloroethane	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
1,2-Dichloroethane (EDC)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
1,1-Dichloroethene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
cis-1,2-Dichloroethene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
trans-1,2-Dichloroethene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
1,2-Dichloropropane	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
cis-1,3-Dichloropropene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
trans-1,3-Dichloropropene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Dichlorotrifluoroethane (F123)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Ethylbenzene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Methylene chloride	ND	ug/L	3.0	5			02/06/09 01:37	VMS 2063	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Tetrachloroethene (PCE)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Toluene	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
1,1,2-Trichloroethane	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
1,1,1-Trichloroethane (TCA)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Trichloroethene (TCE)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Trichlorofluoromethane (F-11)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Trichlorotrifluorethane (F113)	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Vinyl chloride	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Xylenes, total	ND	ug/L	2.5	5			02/06/09 01:37	VMS 2063	
Dibromofluoromethane (SS)	104	%	72-110	5			02/06/09 01:37	VMS 2063	
1,2-Dichloroethane-d4 (SS)	105	%	43-112	5			02/06/09 01:37	VMS 2063	
Toluene-d8 (SS)	97	%	90-121	5			02/06/09 01:37	VMS 2063	
4-Bromofluorobenzene (SS)	112	%	50-114	5			02/06/09 01:37	VMS 2063	

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QUALITY CONTROL DATA

Lab Order: J020209

Project ID: FRESH MARSH EFFLUENT

Analysis Description:	Semivolatile Organic Analysis	**QC Batch:**	SPR/3435
Analysis Method:	EPA 625	**QC Batch Method:**	EPA 625

METHOD BLANK: 257137

Parameter	Blank Result	Reporting Limit	Units	Qualifiers
Acenaphthene	ND	5.0	ug/L	
Acenaphthylene	ND	5.0	ug/L	
Anthracene	ND	5.0	ug/L	
Benzidine	ND	10	ug/L	
Benzo(a)anthracene	ND	5.0	ug/L	
Benzo(a)pyrene	ND	5.0	ug/L	
Benzo(b)fluoranthene	ND	5.0	ug/L	
Benzo(g,h,i)perylene	ND	5.0	ug/L	
Benzo(k)fluoranthene	ND	5.0	ug/L	
Benzyl butyl phthalate	ND	5.0	ug/L	
4-Bromophenyl phenyl ether	ND	5.0	ug/L	
bis(2-Chloroethoxy) methane	ND	5.0	ug/L	
bis(2-Chloroethyl) ether	ND	5.0	ug/L	
bis(2-Chloroisopropyl) ether	ND	5.0	ug/L	
4-Chloro-3-methylphenol	ND	5.0	ug/L	
2-Chloronaphthalene	ND	5.0	ug/L	
2-Chlorophenol	ND	5.0	ug/L	
4-Chlorophenyl phenyl ether	ND	5.0	ug/L	
Chrysene	ND	5.0	ug/L	
Dibenzo(a,h)anthracene	ND	5.0	ug/L	
1,2-Dichlorobenzene	ND	5.0	ug/L	
1,3-Dichlorobenzene	ND	5.0	ug/L	
1,4-Dichlorobenzene	ND	5.0	ug/L	
3,3'-Dichlorobenzidine	ND	5.0	ug/L	
2,4-Dichlorophenol	ND	5.0	ug/L	
Diethylphthalate	ND	5.0	ug/L	
2,4-Dimethylphenol	ND	5.0	ug/L	
Dimethylphthalate	ND	5.0	ug/L	
Di-n-butylphthalate	ND	5.0	ug/L	
2,4-Dinitrophenol	ND	5.0	ug/L	
2,4-Dinitrotoluene	ND	5.0	ug/L	
2,6-Dinitrotoluene	ND	5.0	ug/L	
Di-n-octylphthalate	ND	5.0	ug/L	
1,2-Diphenylhydrazine/Azo	ND	5.0	ug/L	
bis(2-Ethylhexyl)phthalate	ND	5.0	ug/L	
Fluoranthene	ND	5.0	ug/L	
Fluorene	ND	5.0	ug/L	
Hexachlorobenzene	ND	5.0	ug/L	
Hexachlorobutadiene	ND	5.0	ug/L	
Hexachlorocyclo pentadiene	ND	5.0	ug/L	
Hexachloroethane	ND	5.0	ug/L	

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QUALITY CONTROL DATA

Lab Order: J020209

Project ID: FRESH MARSH EFFLUENT

Analysis Description:	Semivolatile Organic Analysis	**QC Batch:**	SPR/3435
Analysis Method:	EPA 625	**QC Batch Method:**	EPA 625

Parameter	Blank Result	Reporting Limit	Units	Qualifiers
Indeno(1,2,3-cd)pyrene	ND	5.0	ug/L	
Isophorone	ND	5.0	ug/L	
2-Methyl-4,6-dinitrophenol	ND	5.0	ug/L	
Naphthalene	ND	5.0	ug/L	
Nitrobenzene	ND	5.0	ug/L	
2-Nitrophenol	ND	5.0	ug/L	
4-Nitrophenol	ND	5.0	ug/L	
N-Nitrosodimethylamine	ND	5.0	ug/L	
N-Nitroso-di-n-propylamine	ND	5.0	ug/L	
N-Nitrosodiphenylamine	ND	5.0	ug/L	
Pentachlorophenol	ND	5.0	ug/L	
Phenanthrene	ND	5.0	ug/L	
Phenol	ND	5.0	ug/L	
Phenol-d6 (SS)	26	14-90	%	
Pyrene	ND	5.0	ug/L	
1,2,4-Trichlorobenzene	ND	5.0	ug/L	
2,4,6-Trichlorophenol	ND	5.0	ug/L	
2-Fluorobiphenyl (SS)	35	12-120	%	
2-Fluorophenol (SS)	36	17-110	%	
Nitrobenzene-d5 (SS)	56	25-110	%	
Terphenyl-d14 (SS)	79	47-115	%	
2,4,6-Tribromophenol (SS)	75	49-114	%	

LABORATORY CONTROL SAMPLE: 257138

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/L	50	31	63	20-91	
4-Chloro-3-methylphenol	ug/L	100	72	72	30-100	
2-Chlorophenol	ug/L	100	58	58	23-134	
1,4-Dichlorobenzene	ug/L	50	17	34	23-159	
2,4-Dinitrotoluene	ug/L	50	44	88	58-112	
4-Nitrophenol	ug/L	100	36	36	24-176	
N-Nitroso-di-n-propylamine	ug/L	50	30	60	23-91	
Pentachlorophenol	ug/L	100	82	82	42-104	
Phenol	ug/L	100	28	28	10-112	
Phenol-d6 (SS)	%			28	14-90	
Pyrene	ug/L	50	34	68	35-104	
1,2,4-Trichlorobenzene	ug/L	50	20	40	33-121	
2-Fluorobiphenyl (SS)	%			39	12-120	
2-Fluorophenol (SS)	%			37	17-110	

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QUALITY CONTROL DATA

Lab Order: J020209

Project ID: FRESH MARSH EFFLUENT

Analysis Description:	Semivolatile Organic Analysis	**QC Batch:**	SPR/3435
Analysis Method:	EPA 625	**QC Batch Method:**	EPA 625

LABORATORY CONTROL SAMPLE: 257138

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrobenzene-d5 (SS)	%			61	25-110	
Terphenyl-d14 (SS)	%			71	47-115	
2,4,6-Tribromophenol (SS)	%			84	49-114	

Analysis Description:	Volatile Organic Analysis	**QC Batch:**	VMS/2063
Analysis Method:	EPA 624	**QC Batch Method:**	EPA 624

METHOD BLANK: 257212

Parameter	Blank Result	Reporting Limit	Units	Qualifiers
Acrolein	ND	10	ug/L	
Acrylonitrile	ND	10	ug/L	
Benzene	ND	1.0	ug/L	
Bromodichloromethane	ND	1.0	ug/L	
Bromoform	ND	1.0	ug/L	
Bromomethane (Methyl Bromide)	ND	1.0	ug/L	
Carbon tetrachloride	ND	1.0	ug/L	
Chlorobenzene	ND	1.0	ug/L	
Chloroethane (Ethyl Chloride)	ND	1.0	ug/L	
2-Chloroethyl vinyl ether	ND	1.0	ug/L	
Chloroform	ND	1.0	ug/L	
Chloromethane(Methyl Chloride)	ND	1.0	ug/L	
Dibromochloromethane	ND	1.0	ug/L	
1,2-Dichlorobenzene	ND	1.0	ug/L	
1,3-Dichlorobenzene	ND	1.0	ug/L	
1,4-Dichlorobenzene	ND	1.0	ug/L	
Dichlorodifluoromethane (F-12)	ND	1.0	ug/L	
1,1-Dichloroethane	ND	1.0	ug/L	
1,2-Dichloroethane (EDC)	ND	1.0	ug/L	
1,1-Dichloroethene	ND	1.0	ug/L	
cis-1,2-Dichloroethene	ND	1.0	ug/L	
trans-1,2-Dichloroethene	ND	1.0	ug/L	
1,2-Dichloropropane	ND	1.0	ug/L	
cis-1,3-Dichloropropene	ND	0.5	ug/L	
trans-1,3-Dichloropropene	ND	0.5	ug/L	
Dichlorotrifluoroethane (F123)	ND	1.0	ug/L	
Ethylbenzene	ND	1.0	ug/L	

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QUALITY CONTROL DATA

Lab Order: J020209

Project ID: FRESH MARSH EFFLUENT

Analysis Description:	Volatile Organic Analysis	**QC Batch:**	VMS/2063
Analysis Method:	EPA 624	**QC Batch Method:**	EPA 624

Parameter	Blank Result	Reporting Limit	Units	Qualifiers
Methyl tert-butyl ether (MTBE)	ND	1.0	ug/L	
Methylene chloride	ND	3.0	ug/L	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	
Tetrachloroethene (PCE)	ND	1.0	ug/L	
Toluene	ND	1.0	ug/L	
1,1,2-Trichloroethane	ND	1.0	ug/L	
1,1,1-Trichloroethane (TCA)	ND	1.0	ug/L	
Trichloroethene (TCE)	ND	1.0	ug/L	
Trichlorofluoromethane (F-11)	ND	1.0	ug/L	
Trichlorotrifluorethane (F113)	ND	1.0	ug/L	
Vinyl chloride	ND	1.0	ug/L	
Xylenes, total	ND	1.0	ug/L	
4-Bromofluorobenzene (SS)	97	50-114	%	
Dibromofluoromethane (SS)	92	72-110	%	
1,2-Dichloroethane-d4 (SS)	93	43-112	%	
Toluene-d8 (SS)	90	90-121	%	2

LABORATORY CONTROL SAMPLE: 257213

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	21	105	37-151	
Bromodichloromethane	ug/L	20	19	96	35-155	
Chlorobenzene	ug/L	20	22	109	37-160	
Chloroform	ug/L	20	20	102	51-138	
1,1-Dichloroethene	ug/L	20	22	109	10-234	
Methyl tert-butyl ether (MTBE)	ug/L	20	16	79	73-123	
Toluene	ug/L	20	23	115	47-150	
Trichloroethene (TCE)	ug/L	20	22	108	71-157	
4-Bromofluorobenzene (SS)	%			110	50-114	
Dibromofluoromethane (SS)	%			99	72-110	
1,2-Dichloroethane-d4 (SS)	%			93	43-112	
Toluene-d8 (SS)	%			103	90-121	

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QUALITY CONTROL DATA QUALIFIERS

Lab Order: J020209

Project ID: FRESH MARSH EFFLUENT

QUALITY CONTROL PARAMETER QUALIFIERS

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

NS - means not spiked and will not have recoveries reported for Analyte Spike Amounts

NC - means not able to be calculated for RPD or Spike Recoveries.

QC Codes Keys: These descriptors are used to help identify the specific QC samples and clarify the report.

MB - Method Blank

Method Blanks are reported to the same Method Detection Limits (MDLs) or Reporting Limits (RLs) as the analytical samples in the corresponding QC batch.

LCS/LCSD - Laboratory Control Spike / Laboratory Control Spike Duplicate

DUP - Duplicate of Original Sample Matrix

MS/MSD - Matrix Spike / Matrix Spike Duplicate

RPD - Relative Percent Difference

%Recovery - Spike Recovery stated as a percentage

2	Caltest allows one surrogate outside of laboratory control limits per SOP.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab Order: J020209

Project ID: FRESH MARSH EFFLUENT

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
J020209001	**FRESH MARSH EFFLUENT-1&2**	EPA 625	SPR/3435	EPA 625	SMS/1682
J020209001	**FRESH MARSH EFFLUENT-1&2**	EPA 624	VMS/2063		

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Bay Area Clean Water Agencies

Leading the Way to Protect Our Bay

A Joint Powers Public Agency

P.O. Box 24055, MS 702

Oakland, California 94623

February 13, 2009

VIA EMAIL

Ms. Tong Yin, Water Resources Control Engineer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Comments on Tentative Order Reissuing the City of Palo Alto NPDES Permit (CA0037834)

Dear Ms. Yin:

The Bay Area Clean Water Agencies (BACWA) appreciate the opportunity to comment on the Tentative Order (TO) for the City of Palo Alto (Palo Alto), as well as make comments on policy issues related to the NPDES permit. We understand that the Executive Officer authorized an extension to the comment deadline to February 13, 2009. BACWA members own and operate publicly-owned treatment works (POTWs) that discharge to San Francisco Bay and its tributaries. Collectively, BACWA members serve over 6.5 million people in the nine-county Bay Area, treating domestic, commercial and a significant amount of industrial wastewater. BACWA was formed to develop a region-wide understanding of the watershed protection and enhancement needs through reliance on sound technical, scientific, environmental and economic information and to ensure that this understanding leads to long-term stewardship of the San Francisco Bay Estuary. BACWA member agencies are public agencies, governed by elected officials and managed by professionals who are dedicated to protecting our water environment and the public health.

BACWA hopes that the following comments will result in changes made to the tentative order prior to issuance of the final NPDES permit for Palo Alto. Further, in order to avoid repetition, but to preserve these arguments, BACWA supports and incorporates by reference the comments made by Palo Alto in its comment letter.

1. BACWA objects to including numeric final limits for dioxin-TEQ.

BACWA requests that the dioxin-TEQ numeric final effluent limits be removed because there is no approved numeric water quality objective for dioxin-TEQ, it is unclear if POTWs will be able to meet this limit, and there are no analytical methods that can accurately detect dioxins at these levels. BACWA believes that the Regional Water Board has the discretion to maintain the

narrative standard that exists in the San Francisco Bay Basin Plan because numeric effluent limitations are infeasible. *See* 40 C.F.R. §122.44(k)(3). There is no value in developing a numerical standard at this time since dioxin-TEQ at these levels cannot be measured. The dioxin sources are air emissions and combustion, neither of which BACWA member agencies can control or prevent. *See Communities for a Better Environment v. SWRCB,* 109 Cal. App. 4th 1089, 1099 (2003).

2. The compliance schedule action plan for dioxin-TEQ (Provision VI.C.6.d., Table 13) is neither realistic nor commensurate with actual water quality impacts, and overly burdensome.

It is highly unlikely that compliance schedule action plan activities will result in compliance with proposed final limits. Although an optional offset provision (as described in Task (9)) may provide an alternative to compliance with a final effluent limit for dioxin-TEQ, such an offset program does not currently exist. Even though the State Water Board directed Regional Water Board staff to develop such a program, there do not appear to be any plans in place. Until such a program is developed with a feasible implementation strategy, BACWA believes this is not a realistic alternative and it is misleading to expect that such a program would lead to compliance.

3. BACWA requests that Finding Q pertaining to the Endangered Species Act (ESA) be deleted.

The Endangered Species Act is not applicable to this NPDES permit. The treatment plant was approved and constructed under the California Environmental Quality Act (CEQA), which took the ESA into account, and CEQA (under which the ESA would be considered for this permit) does not apply to this permit.

4. Existing ammonia effluent limits should be retained unless there is compelling receiving water monitoring evidence that the discharge is causing a compliance problem with Basin Plan unionized ammonia water quality objectives.

Palo Alto has had a technology based total ammonia effluent limits in its NPDES permits since the late 1980's. Extensive receiving water monitoring since 1981 has shown these limits to be fully protective of unionized ammonia water quality objectives and dissolved oxygen water quality objectives. The Tentative Orders (TO) does not identify any receiving water quality problem that justifies imposition of the proposed, revised, more stringent ammonia effluent limits.

BACWA requests that the Water Board retain the existing, fully protective, and attainable ammonia effluent limits in the Sunnyvale and Palo Alto reissued NPDES permits. There are other BACWA members with nitrification facilities and performance based effluent ammonia limits that would be placed in similar compliance jeopardy is the Water Board imposed similarly calculated new limits. BACWA urges the Water Board to not impose new, more stringent effluent limits unless they are truly needed to remedy a demonstrated water quality problem.

Final proposed ammonia effluent limits were calculated without dilution credits using the pH and unionized ammonia fraction data from the nearest Regional Monitoring Program (RMP) station. However, the pH of Palo Alto's undiluted effluent has a significantly lower pH than the receiving water and using the lower pH would result in higher effluent limits. BACWQA urges the Regional Water Board to recognize that shallow water dischargers must be treated differently than deep water dischargers in the current method of calculating ammonia effluent limits because of these discrepancies.

The City of Palo cannot comply with the proposed ammonia effluent limits. The change proposed is not necessary for water quality and there is no water quality driver that requires this change. As proposed the ammonia limit is unattainable and will create a compliance concern for Palo Alto. BACWA strongly urges the Regional Water Board to consider Palo Alto's individual and specific effluent pH in the analysis or calculate the effluent limits using an appropriate dilution credit. BACWA understands that the City has proposed a method for computing ammonia effluent limits which takes the pH differences into account and BACWA supports this approach for setting the effluent limits.

5. Table E-7 for pretreatment monitoring is a new table for permits and should be removed because it is not consistent with other Region 2 monitoring requirements.

The pretreatment monitoring requirements in Table E-7 directly conflict with other monitoring requirements in the region. For example, multiple options for mercury analytical methods are "suggested," whereas the Mercury Watershed Permit made effective by the San Francisco Bay Regional Water Board on March 1, 2008 requires that (only) 1631 be used. Additionally, compositing requirements are different from other parts of the permit. BACWA requests that Table E-6 be removed because the conflicting requirements cause confusion and the table is not needed because the analytical approaches are indicated in other places.

BACWA appreciates the Regional Water Board's close attention to the comments made herein. I would be more than happy to meet with you to discuss our comments and concerns in more detail as you wish.

Respectfully submitted,

Michele Pla
BACWA Executive Director

cc: BACWA Executive Board
Robert Cole, BACWA Permits Committee Chair
Bruce Wolfe, Regional Water Board
Lila Tang, Regional Water Board
Bill Johnson, Regional Water Board

Appendix C

RESPONSE TO COMMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Response to Written Comments
on December 2008 Draft NPDES Permit for
Palo Alto Regional Water Quality Control Plant and Collection System
Palo Alto, Santa Clara County

The Regional Water Board received written comments on a tentative order distributed for public comment from the following parties:

1. City of Palo Alto, dated February 12, 2009
2. Bay Area Clean Water Agencies (BACWA), dated February 13, 2009

This Response to Comments summarizes each comment in *italics* (quoted where possible, or paraphrased for brevity) followed by the Regional Water Board staff's response. For the full context and content of each comment, please refer to the comment letters.

CITY OF PALO ALTO (CITY) COMMENTS

City Comment No. 1. *"The existing effluent limits for total ammonia in the current permit should be retained, or the effluent limits should be calculated using a dilution credit to obtain ammonia limits with which the City can comply." Effluent limits calculated using the pH of the receiving water and applied to the City's undiluted effluent are much more stringent than necessary to ensure compliance with Basin Plan objectives for unionized ammonia. The City is unable to comply with the proposed ammonia limits. The City must add ammonia to its secondary effluent to ensure disinfection with chloramines. This addition is necessary to prevent the formation of disinfection byproducts, and of chlorodibromomethane in particular. Prior to the ammonia addition practice, the City's effluent regularly contained concentrations of chlorodibromomethane exceeding the CTR water quality objective. The City requests that ammonia limits be calculated using either the City's effluent data set or the City's 1:1 mixing analysis, both of which are presented in a January 15, 2009 Analysis.*

Regarding the Renzel Marsh Pond discharge into Matadero Creek, the City believes that retaining the existing ammonia limits will continue to be protective of Matadero Creek. The hydraulic retention time of the effluent in Renzel Marsh Pond is long enough that ammonia in the effluent attenuates through oxidation and nutrient uptake before being discharged to Matadero Creek. The City proposes that a Special Study be added to Provision C.2 of the draft permit to require the City to demonstrate that the unionized ammonia objectives are not exceeded in Matadero Creek.

Response to City Comment No. 1. We revised the ammonia effluent limit calculation in the tentative order to incorporate a dilution credit of D=1 (one part ambient water to one part effluent). The new ammonia effluent limits are an average monthly effluent limit (AMEL) of 2.7 mg/L and a maximum daily effluent limit (MDEL) of 9.5 mg/L. Taken together, these new limits are more stringent than the previous permit limits (AMEL of 3 mg/L and MDEL of 8 mg/L) because the new AMEL would limit the discharge to a lower monthly average overall. Therefore, these limits comply with anti-backsliding and antidegradation requirements. As explained in more detail below, we made these changes because applying the dilution credit D=1, or a dilution ratio of 2:1, though

on the surface appearing to be less stringent than what was previously proposed (D=0). This is actually more conservative in that it reflects the physical and chemical processes within the receiving water. The revised dilution credit is also consistent with Basin Plan section 4.6.1.2 and SIP section 1.4.2. Finally, as pointed out by the City, the previously proposed limits may cause compliance challenges with no water quality benefit.

The Compliance Challenge. The City could find it difficult to comply with the previously proposed ammonia limits (AMEL=1.4 mg/L and MDEL=5.0 mg/L). The City has experienced periodic episodes of incomplete nitrification, when ammonia is not completely oxidized to nitrate, resulting in higher than usual effluent ammonia concentrations. For instance, an episode of nitrification inhibition occurred in February 2002. The maximum daily sample concentration at that time was 8.6 mg/L and the monthly average concentration was 2.72 mg/L. The City reports that despite reasonable efforts to determine the cause, it was not found. While serious inhibition episodes have not occurred recently, the City believes they could in the future, and data from this incident suggest that compliance with the previously proposed limits is uncertain.

Compliance with the previously proposed limits could also be difficult because the City adds approximately 1 mg/L of ammonia to its secondary effluent for chloramine disinfection. The City disinfects with chloramines instead of free chlorine to minimize the formation of disinfection byproducts, such as chlorodibromomethane. The City must minimize chlorodibromomethane production to comply with chlorodibromomethane effluent limits. Unfortunately, the control of chlorodibromomethane results in increased ammonia concentrations. Because the previously proposed 1.4 mg/L ammonia effluent limit was close to the 1 mg/L ammonia addition, the potential for error in adding this relatively small ammonia concentration was a serious concern. Allowing for a dilution credit of D=1 results in limits with which the City can comply. Moreover, as discussed above, the new limits are protective and are slightly more stringent than the old ones.

Most Conservative Dilution Based on Competing Chemical and Physical Processes. The dilution credit and revised effluent limits are based on our assessment of where the highest unionized or toxic ammonia concentration could exist in the receiving water. This point is somewhere between the point of discharge and far away from the point of discharge. This is because the unionized ammonia concentration reflects two competing processes in the receiving water: dilution, which lowers ammonia, and pH rise, which increases the toxic form of ammonia. As effluent leaves the Plant's outfall, its total ammonia concentration becomes more dilute as ambient water mixes with the effluent the further away it is from the outfall. At the same time, the pH of the effluent increases as the effluent moves farther from the outfall and mixes with receiving water because the effluent pH is lower than that of the receiving water. As the pH rises, the fraction of ammonia in the acutely toxic form, the unionized form, increases. This increase continues until the pH in the receiving water levels off to ambient. The effects of dilution continue, however.

At first, the pH rise has a greater effect on the unionized or toxic ammonia concentration than dilution. In other words, as the effluent moves away from the outfall and the pH rises, the concentration of unionized ammonia increases more than the effects from dilution. At some point, however, when the pH levels off, dilution then has a greater effect. From this point, as the effluent continues to travel away from the outfall, the unionized ammonia concentration declines with dilution. Based on the City's analysis titled *Palo Alto Regional Water Quality Control Plant Total Ammonia Effluent Limits: Analysis and Recommendations,* dated January 15, 2009 ("Ammonia Analysis"), the worst-case unionized ammonia concentration most likely occurs where D=1. Limits

based on a dilution credit of D=1 would ensure that the receiving water meets the Basin Plan objectives at the point where D=1. Moreover, because this point represents the highest unionized ammonia concentration, the receiving water will also meet the objectives at all other locations.

The City based its analysis on limited laboratory tests and theory. It is conservative in that it does not consider the breakdown of ammonia in the receiving water. Nevertheless, the revised tentative order at Provision VI.C.2.d would require a field study to confirm the City's analysis. During the next permit term, the ammonia effluent limits may be reconsidered based on new information that may be available at that time.

Basin Plan Section 4.6.1.2. Basin Plan section 4.6.1.2 (dilution ratios for shallow water discharges) allows a dilution credit in effluent limit calculations. Using D=1 is consistent with Basin Plan section 4.6.1.2 for the following reasons:

- The Basin Plan requires "that an aggressive pretreatment and source control program is in place." The City will continue to implement its program in accordance with the tentative order's proposed pollutant minimization program requirements, and will optimize ammonia use in its chloramination system in accordance with requirements for proper operation and maintenance. A source control program specifically targeting ammonia is impracticable, however, because, unlike many other pollutants found in wastewater, ammonia is primarily a byproduct of human waste (i.e., urine) and its capture and disposal is a fundamental purpose of the wastewater treatment enterprise.

- The Basin Plan requires that proposed limits result in compliance with water quality objectives based on worst-case conditions. As discussed above, the revised limits based on D=1 reflect the worst-case condition and ensure that water quality objectives are met at all locations within the receiving water.

- The Basin Plan requires an evaluation of the effects of mass loading. Since ammonia degrades relatively quickly and does not persist in receiving waters, there are no enduring effects of mass ammonia loading.

- Effluent limits based on dilution credits are not to impair the basis upon which the Regional Water Board grants an exception to Basin Plan Prohibition 1. The basis for granting this discharge an exception is explained in Fact Sheet section IV.B. Because the ammonia limits ensure that ammonia water quality objectives are met at all locations in the receiving water, they do not undermine this basis for the exception.

State Implementation Policy (SIP) Section 1.4.2. Consistent with SIP section 1.4.2.2, the dilution credit used to calculate the ammonia WQBELs reflects the size of the mixing zone. This mixing zone is as small as practicable. It stretches from the outfall to just beyond the unnamed channel in South San Francisco Bay, an area of roughly 3.4 acres. This mixing zone is based on the City's dilution study titled *Dilution Analysis and Water Quality Impacts of the Palo Alto Regional Water Quality Control Plant on South San Francisco Bay (December 1997)* and the January 15, 2009, Ammonia Analysis. It also meets the conditions of SIP section 1.4.2.2:

(1) The mixing zone does not compromise the integrity of the receiving water. The unnamed channel is a narrow inlet of South San Francisco Bay. Since the mixing zone is mostly

confined to this channel, it does not compromise the integrity of greater South San Francisco Bay.

(2) The mixing zone does not cause acutely toxic conditions to aquatic life passing through the mixing zone. The mixing zone was selected such that its edge is estimated to be the location with the highest unionized ammonia concentrations. The WQBELs will not allow acutely toxic conditions at this location, and no other location will experience greater acute toxicity. Moreover, the calculation of ammonia WQBELs is strongly influenced by the Basin Plan's chronic ammonia objective. WQBELs based solely on the acute objective would be far less stringent.

(3) Because the mixing zone is mostly within the unnamed channel, it does not restrict the passage of aquatic life throughout South San Francisco Bay. Moreover, the unnamed channel is a "dead end" channel, so the mixing zone does not restrict passage through the channel.

(4) The mixing zone does not adversely impact biologically sensitive or critical habitats because the unnamed channel is not an area of special biological significance as identified by Basin Plan Figure 2-1. In addition, because the edge of the mixing zone is the point with the highest unionized ammonia concentrations, basing the WQBELs calculations on this point protects all biologically sensitive and critical habitats.

(5) The ammonia within the mixing zone does not produce undesirable or nuisance aquatic life. All areas within the mixing zone will meet the ammonia water quality objectives.

(6) The ammonia within the mixing zone does not result in floating debris, oil, or scum.

(7) The ammonia within the mixing zone does not produce objectionable color, odor, taste, or turbidity (moreover, the receiving water is not used for drinking water supplies).

(8) The ammonia within the mixing zone does not cause objectionable bottom deposits.

(9) The ammonia within the mixing zone does not cause a nuisance. All areas within the mixing zone will meet the ammonia water quality objectives.

(10) The mixing zone does not dominate South San Francisco Bay or overlap a mixing zone from a different outfall. The Regional Water Board has not established any other mixing zones for nearby shallow water dischargers.

(11) The mixing zone is not located at or near a drinking water intake.

We agree with the City regarding the Matadero Creek discharge. Although the proposed effluent limits are based on conditions in the South Bay, we believe the same effluent limits will also protect Matadero Creek. The quality of the discharge is the same when it leaves the plant, but the Renzel Marsh Pond discharge then travels through Renzel Marsh Pond for an extended period, allowing degradation of ammonia and biological uptake of ammonia nitrogen. In addition, the revised tentative order includes a special study to characterize Matadero Creek (Provision VI.C.2.d) to verify Matadero Creek's conditions for the next permit reissuance.

City Comment No. 2a. "*Provision VI.C.6.c should be revised to be consistent with previous permits and to address the City's reclamation program as a whole." The requirement that the Renzel Marsh Pond reclamation program be continued is different from the previous permit in that it is specific to this one part of the City's reclamation program instead of requiring the City to continue its overall reclamation program. The City needs the flexibility to increase and decrease the various components of its reclamation program as needed.*

Response to City Comment No. 2a. We agree and have revised the tentative order as requested.

City Comment No. 2b. "*The maximum single day flow rate identified in Finding II.B.2 should be corrected." The 80 MGD in the draft permit reflects the maximum instantaneous flow rate instead of the average daily maximum flow rate, which was 46.4 MGD for the past three years.*

Response to City Comment No. 2b. We agree and have revised the tentative order as requested.

City Comment No. 3. *"Table E-7 for pretreatment monitoring is a new table for permits and should be removed because it is not consistent with other Region 2 monitoring requirements." The pretreatment monitoring requirements in Table E-7 directly conflict with other monitoring requirements in the region. For example, multiple options for mercury analytical methods are suggested, whereas the mercury Watershed Permit requires that 1631 be used. Additionally, compositing requirements are different from other parts of the permit.*

Response to City Comment No. 3. We removed Table E-7 from the tentative order, but plan to retain the sample type requirements in Table E-6. In addition, we have revised the tentative order to allow individual grab samples to be volumetrically flow-weighted and combined prior to analysis, which we believe is consistent with what the City has been doing. To avoid confusion, the revised table does not specify analytical methods.

City Comment No. 4. "*The monitoring requirements for Organic Priority Pollutants in Table E-5 for Renzel Marsh Pond effluent should be changed to be consistent with the previous permit." Specifically, the organic pollutants in the previous permit only included volatile and semivolatile pollutants, and the sampling frequency was once every two years.*

Response to City Comment No. 4. We agree and have revised the tentative order as requested. The previous permit did not specify that the organic pollutant monitoring for the Renzel Marsh Pond effluent is limited to volatile and semivolatile pollutants only; however, based on the City's past practices (sampling has been done for volatile and semivolatile organic pollutants since 1992 under this requirement) and lack of water quality concerns for other organic pollutants (i.e., concentrations of organic pollutants in general would not be higher than those measured in samples for plant discharge that goes into the pond), we revised the tentative order to indicate that the City may sample only for volatile and semivolatile organic pollutants for pond effluent.

City Comment No. 5. *"The City requests that the dioxin-TEQ final limits be removed." The City requests that the dioxin-TEQ numeric final effluent limits be removed because there is no approved numeric water quality objective for dioxin-TEQ. The congeners detected in the fish tissue samples that form the basis for the dioxin 303(d) listing and the congeners detected in publicly-owned treatment works are different. The City cannot meet these limits, and dioxin at these levels cannot*

be measured. The source of dioxin is air emissions and combustion, and the City cannot control or prevent these sources.

Response to City Comment No. 5. We have not removed the dioxin limits because they are reasonable and appropriate. We derived them in accordance with 40 CFR 122.44(d)(1)(vi), which states that, regarding establishment of effluent limits for pollutants with reasonable potential to cause or contribute to an excursion above a narrative criterion, a calculated numeric water quality criterion may be used. It further states, "Such a criterion may be derived using a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion…." The dioxin-TEQ limits in this draft permit are based on the California Toxics Rule (CTR) objective for 2,3,7,8-TCDD and other relevant information.

The tentative order includes dioxin-TEQ effluent limits because State and federal laws and regulations require them. By adopting the dioxin-TEQ limits, the Regional Water Board is complying with regulations implementing the Clean Water Act at 40 CFR 122.44(d), which require that permits include effluent limits for all pollutants that may be discharged at levels with a reasonable potential to cause or contribute to exceedances of water quality standards, including narrative objectives, such as the Basin Plan's bioaccumulation objective. The Basin Plan states, "Water quality-based effluent limitations will consist of narrative requirements and, where appropriate, numerical limits for the protection of the most sensitive beneficial uses of the receiving water."

Dioxin and similar compounds have bioaccumulated in San Francisco Bay fish in violation of the Basin Plan's narrative bioaccumulation water quality objective. Therefore, a numeric effluent limit is appropriate to protect San Francisco Bay's beneficial uses, which the bioaccumulation objective is intended to preserve. We used Toxic Equivalency Factors (TEFs) published by USEPA and the World Health Organization, together with the CTR water quality objective for 2,3,7,8-TCDD (the most toxic of the dioxins) to translate the Basin Plan's narrative bioaccumulation objective into numeric water quality-based effluent limits.

We do not intend to enforce compliance with the dioxin limits in situations where we cannot determine whether these limits are exceeded. However, neither 40 CFR 122.44(d) nor the Basin Plan allows consideration of whether analytical methods can actually measure dioxin-TEQ at concentrations as low as the limits. The Basin Plan states, "…when pollutant concentrations in waters are relatively low, the limits of quantification will be taken into account in determining compliance with, rather than the calculation of, effluent limits." Following this policy and the State Implementation Policy's Minimum Level (ML) concept, we developed effluent limits consistent with the water quality objective. We will use analysis-based MLs for compliance determination and enforcement.

We recognize that the ultimate sources of most dioxins in San Francisco Bay are mostly combustion-related air emissions, and that these sources are outside the Discharger's direct control. In the context of the Basin Plan's narrative bioaccumulation objective, however, we disagree that dioxins cannot be controlled. The Basin Plan states, "Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State and that may be reasonably controlled." USEPA concluded that dioxins are controllable when it placed San Francisco Bay on the 303(d) list of impaired waters due to dioxin concentrations in fish and other aquatic organisms. Air emissions, which are created through

combustion, are a source of dioxins, but wastewater treatment plants are also sources of dioxins discharged to San Francisco Bay. Dioxins in wastewater are primarily a result of human activity and their discharge to waters can be controlled by removing solids from wastewater (dioxins are hydrophobic and bind to particles). Additional dioxin removal could result from plant upgrades. This may be burdensome and may not be cost effective at this time; however, such actions could be necessary to control dioxin discharges in the future.

City Comment No. 6. *"The compliance schedule action plan for dioxin-TEQ is neither realistic nor commensurate with actual water quality impacts." There is nothing a municipal wastewater treatment plant can do to reduce the concentrations of dioxin congeners found in fish tissue. Although the optional offset provision may provide an alternative to compliance with a final effluent limit for dioxin-TEQ, such a program does not currently exist.*

Response to City Comment No. 6. We disagree. The compliance schedule requirements are based on the State Implementation Policy and the State Water Board's new Compliance Schedule Policy. Both policies require dischargers to provide justifications for a compliance schedule, such as past diligent efforts in quantifying the pollutant in the influent and effluent; existing and accomplished source control measures; pollutant minimization program activities; and a proposed schedule for future additional source control actions, pollutant minimization program activities, etc. Therefore, some activities specified in this provision should be in place already. We believe some limited source control and pollutant minimization program actions can be implemented to reduce the amount of dioxin entering the wastewater treatment plant and being discharged to receiving waters. The City has been a leader in identifying such opportunities. We acknowledge that a formal mass offset program does not currently exist. The tentative order refers to such a program simply as one possible means to overcome any technical infeasibility in meeting the dioxin-TEQ limits.

BACWA COMMENTS

BACWA Comment No. 1. "*BACWA objects to including numeric final limits for dioxin-TEQ." BACWA requests that the dioxin-TEQ numeric final effluent limits be removed because there is no approved numeric water quality objective for dioxin-TEQ, it is unclear if POTWs will be able to meet this limit, and there are no analytical methods that can accurately detect dioxins at these levels. Dioxin at these levels cannot be measured or controlled.*

Response to BACWA Comment No. 1. See our response to City Comment No. 5.

BACWA Comment No. 2. *"The compliance schedule action plan for dioxin-TEQ (Provision IV.C.6.d, Table 13) is neither realistic nor commensurate with actual water quality impacts, and is overly burdensome*." *It is highly unlikely that compliance schedule action plan activities will result in compliance with proposed final limits. Although an optional offset may provide an alternative to compliance with a final effluent limit, such a program does not currently exist.*

Response to BACWA Comment No. 2. See our response to City Comment No. 6.

BACWA Comment No. 3. *"BACWA requests that Finding Q pertaining to the Endangered Species Act (ESA) be deleted." The Endangered Species Act does not apply to this NPDES permit.*

The treatment plant was approved and constructed under the California Environmental Quality Act , which took the Endangered Species Act into account.

Response to BACWA Comment No. 3. We have not removed Finding Q. It is a simple statement of fact that appears in almost every NPDES permit. It clarifies that nothing in the tentative order should be construed as authorizing any taking of a threatened or endangered species under the California Endangered Species Act or the Federal Endangered Species Act. Finding Q is a reminder that the tentative order, with its prohibitions and limitations, is intended to protect beneficial uses, including the preservation of rare and endangered species. Nevertheless, as stated in the finding, the City is responsible for meeting all Endangered Species Act requirements.

We believe the tentative order is consistent with the "Memorandum of Agreement (MOA) between the Environmental Protection Agency, Fish and Wildlife Service and National Marine Fisheries Service Regarding Enhanced Coordination Under the Clean Water Act and Endangered Species Act," Notice, February 22, 2001. (See http://www.epa.gov/fedrgstr/EPA-WATER/2001/February/Day-22/w2170.htm.) This MOA describes coordination regarding the protection of endangered and threatened species under the Endangered Species Act and the Clean Water Act's NPDES programs. It provides guidance to regional and field offices regarding consultations on U.S. EPA's approval of new or revised water quality standards, and addresses the procedures that U.S. EPA and the Services will follow in overseeing the operation of State NPDES permits to protect listed species and habitats.

BACWA Comment No. 4. *"Existing ammonia effluent limits should be retained unless there is compelling receiving water monitoring evidence that the discharge is causing a compliance problem with Basin Plan unionized water quality objectives." The City of Palo Alto cannot comply with the proposed ammonia effluent limits. The change proposed is not necessary for water quality, and there is no water quality driver that requires this change.*

Response to BACWA Comment No. 4. See our response to City Comment No. 1.

BACWA Comment No. 5. *"Table E-7 for pretreatment monitoring is a new table for permits and should be removed because it is not consistent with other Region 2 monitoring requirements." The pretreatment monitoring requirements in Table E-7 conflict with other monitoring requirements. For example, multiple options for mercury analytical methods are suggested, whereas the mercury Watershed Permit requires that 1631 be used. Additionally, compositing requirements are different from other parts of the permit.*

Response to BACWA Comment No. 5. See our response to City Comment No. 3.

Staff-Initiated Revisions

In addition to the changes we made in response to the comments received, staff also made the following changes to the tentative order:

(1) Added a discussion under the rationale for granting an exception to the Basin Plan shallow water discharge prohibition (Fact Sheet, IV.B). The discussion more specifically illustrates that

the City has complied with the Basin Plan and State Board Order 90-5 requirements to get an exception to the Basin Plan discharge prohibition.

(2) Added a discussion in the Fact Sheet, under "Development of WQBELs for Specific Pollutants" (IV.4.d.(6)(iv)), to justify why the same set of ammonia effluent limits are protective of Matadero Creek, and that the receiving water diurnal variability issues have been considered in the tentative order.

(3) Added a discussion on the tentative order's compliance with antidegradation requirements (Fact Sheet, IV.D.7). This discussion is required in all NPDES permits, but was inadvertently left out of the tentative order.