UNCONTESTED

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

STAFF SUMMARY REPORT (Tong Yin)
MEETING DATE: October 14, 2009

ITEMS: **5B and 6B**

SUBJECT: Las Gallinas Valley Sanitary District Sewage Treatment Plant and collection system, San Rafael, Marin County - Reissuance of NPDES Permit and Issuance of Cease and Desist Order

CHRONOLOGY: December 2003 – Permit reissued

DISCUSSION: The Revised Tentative Order (Appendix A) would reissue the NPDES permit for the Las Gallinas Valley Sanitary District Sewage Treatment Plant and its collection system. The District owns and operates the plant, which provides secondary treatment of domestic, commercial, and industrial wastewater for a population of about 32,000 in northern San Rafael and a portion of unincorporated Marin County. The plant has a dry weather design capacity of 2.92 million gallons per day (MGD). Its peak wet weather secondary treatment capacity is 8 MGD. It can process up to 25 MGD peak wet weather flow. The plant discharges to Miller Creek, which flows to San Pablo Bay. The District maintains a reclamation program, which includes a 20-acre freshwater marsh and a 200-acre irrigation pasture. The Marin Municipal Water District further treats a portion of the plant effluent for recycled water use.

Because the District cannot comply with new more stringent copper effluent limits in the Revised Tentative Order, a Cease and Desist Order (Appendix B) is necessary. The Cease and Desist Order includes requirements and a time schedule for the District to explore measures, including more aggressive pollution prevention or plant upgrades, to achieve compliance with the new copper effluent limits. These requirements are above and beyond copper action plan requirements that would also be imposed by the Revised Tentative Order. These copper action plan requirements are identical to requirements in permits the Board has adopted this year, and are part of the Board's site specific objectives for copper that were approved by USEPA.

The District and the Bay Area Clean Water Agencies (BACWA) submitted comments (Appendix C). Our responses (Appendix D) describe changes we made to resolve many of the District's and BACWA's concerns. The Revised Tentative Order reflects all the changes made. We did not make changes related to one significant remaining concern on dioxins limits, which were similar to those the Board has considered at many recent hearings. Likewise, we did not change the 2-hour notification requirement for spills from wastewater treatment plants in the

updated Regional Standard Provisions that the Board has included with recent permits. Despite these unresolved concerns, we expect this item to remain uncontested.

RECOMMEN-DATION: Adopt the Revised Tentative Order and Tentative Cease and Desist Order

CIWQS PLACE ID: 236598

APPENDICES:
A. Revised Tentative Order – Item 5B
B. Tentative Cease and Desist Order – Item 6B
C. Comment Letters
D. Response to Comments

APPENDIX A

REVISED TENTATIVE ORDER

California Regional Water Quality Control Board
San Francisco Bay Region

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REVISED TENTATIVE ORDER
NPDES NO. CA0037851

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

Table 1. Discharger Information

Discharger	Las Gallinas Valley Sanitary District
Name of Facility	Las Gallinas Valley Sanitary District Sewage Treatment Plant and its sewage collection system
Facility Address	300 Smith Ranch Road
	San Rafael, CA 94903
	Marin County
The U.S. Environmental Protection Agency and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

Discharges by the Las Gallinas Valley Sanitary District from the discharge points identified below are subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary-treated municipal wastewater	38º 01' 31" N	122º 31' 01" W	Miller Creek
002	Secondary-treated municipal wastewater	38º 01' 37" N	122º 30' 48" W	Miller Creek

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	October 14, 2009
This Order shall become effective on:	December 1, 2009
This Order shall expire on:	November 30, 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 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 October 14, 2009.

_____
Bruce H. Wolfe, Executive Officer

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I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	Las Gallinas Valley Sanitary District
Name of Facility	Las Gallinas Valley Sanitary District Sewage Treatment Plant and its sewage collection system
Facility Address	300 Smith Ranch Road
	San Rafael, CA 94903
	Marin County
Facility Contact, Title, and Phone	Mark Williams, General Manager, (415) 472-1734
Mailing Address	300 Smith Ranch Road, San Rafael CA 94903
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	2.92 million gallons per day (MGD) (average dry weather capacity) 8.0 MGD (peak wet weather secondary treatment capacity) 25 MGD (maximum hydraulic capacity)
Service Areas	City of San Rafael (northern area) and portions of Marin county
Population Served	32,000
Reclamation (Yes)	Regional Water Board Order Nos. 89-127 and 92-064

II. FINDINGS

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

A. Background. The Las Gallinas Valley Sanitary District (hereinafter the Discharger) is currently discharging pursuant to Order No. R2-2003-0108 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA 0037851. The Discharger submitted a Report of Waste Discharge, dated June 3, 2008, and applied for an NPDES permit reissuance to discharge treated wastewater from its wastewater treatment plant to waters of the State and the United States. The Discharger's discharge is also currently covered under Order No. R2-2007-0077 (NPDES Permit CA0038849) that superseded all requirements on mercury from wastewater discharges in the region. The mercury permit is unaffected by this Order.

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

B. Facility Description and Discharge Locations

1. **Facility Description.** The Discharger owns and operates the Las Gallinas Valley Sanitary District Sewage Treatment Plant (Plant) and its sewage collection system. The Plant provides secondary level treatment for wastewater collected from the northern area of the City of San Rafael.

Treatment processes at the Plant include two mechanically cleaned fine screens, two aerated grit chambers, one circular primary clarifier, two intermediate clarifiers that can be operated as additional primary clarifiers before secondary treatment, chemical addition to primary clarifiers during high flow conditions, two trickling filters, a secondary clarifier, a fixed film reactor for nitrification, eight coarse media (anthracite) filter cells, two underground chlorine contact basins, disinfection using sodium hypochlorite for disinfection, and dechlorination using sodium bisulfite.

The Discharger's sewage collection system includes 107 miles of gravity-flow sanitary sewer lines and 35 miles of pressure sewers, ranging in diameter from 6 to 30 inches, and 28 lift stations.

2. **Discharge Description.** The Plant has a dry weather flow design capacity of 2.92 MGD and can treat up to 8.0 MGD with full secondary treatment. During 2008, the average dry weather effluent flow was 2.15 MGD (July-September), and the average wet weather effluent flow during 2008-2009 (November-April) was 2.94 MGD. The maximum daily average effluent flow occurred in January 2008; it was 13.5 MGD.

3. **Discharge Locations.** There are two discharge points (001 and 002), as indicated in Table 2 on the cover page, regulated under this Order.

   From November 1 through May 31 (discharge season), treated wastewater from the Plant is discharged to Miller Creek, approximately 1 mile upstream from San Pablo Bay. Under normal flow conditions, Plant effluent is split between Discharge Points 001 and 002, with the majority discharged at Discharge Point 002. Under high flow conditions, the majority of treated effluent is discharged at Discharge Point 001, and the remaining flow is discharged via Discharge Point 002, which is located approximately 1200 feet downstream of Discharge Point 001.

   During the dry season (June 1 through October 31), when discharge to Miller Creek is prohibited, chlorinated effluent is discharged to two unlined storage ponds, with a combined area of 40 acres. The storage ponds store effluent until needed for the Discharger's reclamation project, which is further described in Finding 4 below. Discharges from the Plant effluent line to the storage ponds and from the storage ponds to the reclamation project can also occur during other months of the year, outside of the dry season. Effluent remaining in the storage ponds at the end of the dry season may be discharged to Miller Creek via Discharge Point 002 at the beginning of the discharge season (November).

4. **Reclamation Activities.** The Discharger's reclamation system includes two storage ponds, a 20-acre freshwater marsh/wildlife pond, and irrigated pasture. Effluent from the storage ponds is used for irrigation of a 200-acre pasture or is used to maintain the freshwater marsh/wildlife pond. Effluent from the Plant may also be directly sent to the freshwater marsh/wildlife pond. The freshwater marsh/wildlife pond is maintained at a

water level of less than 1.5 feet and has an overflow zone that is only inundated during winter rains. Regional Water Board Order No. 92-064 establishes limitations and conditions regarding reclamation uses of treated wastewater in the freshwater marsh/wildlife pond and in the irrigation system.

In addition, discharge from the storage ponds may be used for further treatment and recycling at the Marin Municipal Water District, which operates a Title 22-compliant recycled water facility located adjacent to the Plant. Marin Municipal Water District further treats the Discharger's secondary effluent to produce disinfected tertiary recycled water, and is regulated under Regional Water Board Order No. 89-127. Annually Marin Municipal Water District treats approximately 0.84 MGD of the Plant effluent.

5. **Biosolids Management.** Grit, screenings, and a portion of the skimmed material are placed in the Redwood Sanitary Landfill in northern Marin County. Other solids generated in the treatment process are treated by gravity thickening and anaerobic digestion (a primary digester and a secondary digester), and then pumped to three sludge storage lagoons. Solids from the Marin Municipal Water District's water reclamation facility are either pumped through the Plant or pumped directly to the sludge storage lagoons. The sludge storage lagoons are double-lined, with a total capacity of approximately 3.2 million gallons (MG). Biosolids are ultimately disposed of on-site through subsurface injection at the Discharger's 9-acre land disposal site.

6. **Storm Water Discharge.** The Discharger is not required to be covered under the State Water Board's statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit No. CAS000001) because all storm water flows from the Plant and sludge disposal area are captured and directed to the Plant's headworks.

Treatment process schematic diagrams are included as Attachment A of this Order. Attachment B provides a map of the area around 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 chapter 5.5, division 7 of the California Water Code (CWC), commencing with section 13370. It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to CWC article 4, chapter 4, division 7 (commencing with section 13260).

D. **Background and Rationale for Requirements**. 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 this Order's requirements, is hereby

incorporated into this Order and constitutes part of the findings for this Order. **Attachments A** through **G** 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. Further discussion of the development of technology-based effluent limitations is included in the Fact Sheet (**Attachment F**).

G. Water Quality-Based Effluent Limitations (WQBELs). CWA sections 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 Plan. 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 and groundwater. It also includes programs of implementation programs to achieve WQOs. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Water Board), USEPA, and Office of Administrative Law (OAL). Requirements of this Order implement the Basin Plan. The Basin Plan specifically identifies the receiving water for this discharge, Miller Creek, which is tributary to San Pablo Bay.

The Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the tidal and marine influence on Miller Creek, the maximum total dissolved solid concentrations observed in Miller Creek were above 18,000 mg/L, thereby meeting an exception to Resolution No.88-63. The MUN designation is therefore not applicable to Miller Creek.

The Basin Plan beneficial uses for Miller Creek are listed in the table below.

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Miller Creek	Cold Water Habitat (COLD) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2) Fish Spawning (SPWN) Warm Water Habitat (WARM) Wildlife Habitat (WILD)

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

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. About forty criteria in the NTR 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 through the NTR and to the priority pollutant objectives established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria USEPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. Compliance Schedules and Interim Requirements. SIP section 2.1 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 SIP section 5.3, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010). Where a compliance schedule for a final effluent limitation exceeds one 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. USEPA and Office of Administrative Law (OAL) approved this policy, and it became effective on August 27, 2008, superseding the Basin Plan's compliance schedule policy. This Order includes a compliance schedule for dioxin-TEQ consistent with the State Water Board's new policy. A detailed discussion of the basis for the compliance schedule and interim effluent limitation 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 water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on biochemical oxygen demand (BOD), total suspended solids (TSS), and oil and grease. 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 for dry weather discharge more stringent than the minimum federal technology-based requirements as 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.

O. Anti-Backsliding Requirements. CWA sections 402(o)(2) and 303(d)(4) and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed.

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 laws 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. CWC 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 Discharger must also comply with the Regional Standard Provisions provided in Attachment G. The Regional Water Board has also included in this Order special provisions applicable to the 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.

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.

IT IS HEREBY ORDERED that this Order supersedes Order No. R2-2003-0108, except for enforcement purposes, and, in order to meet the provisions contained in CWC Division 7 (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. The 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.

Blended wastewater is biologically treated wastewater blended with wastewater that has been diverted around biological treatment units or advanced treatment units. Such discharges are approved under the bypass conditions stated in 40 CFR 122.41(m)(4) when (1) the Discharger's peak wet weather influent flow volumes exceed the capacity of the secondary treatment unit(s) of 8.0 MGD; (2) the discharge complies with the effluent and receiving water limitations contained in this Order; and (3) the Discharger is in compliance with Provision

VI.C.4.e. Furthermore, the Discharger shall operate its facility as designed and in accordance with the Operation and Maintenance Manual for the facility. This means that it shall optimize storage and use of equalization units, and shall fully utilize the biological treatment units, if applicable. The Discharger shall report incidents of blended effluent discharges in routine monitoring reports and shall conduct monitoring of this discharge as specified in the attached MRP (Attachment E).

C. Discharge to Miller Creek at Discharge Points 001 and 002 is prohibited during the dry season each year, from June 1 through October 31, unless the Discharger submits a request for discharge and that request is approved by the Executive Officer. In the event of high wastewater flows resulting from an early or late season storm, the Discharger, after considering the feasibility of reclamation and use of the storage ponds, shall notify the Regional Water Board case manager by phone or email of the need to discharge to Miller Creek immediately upon making the determination that such a discharge is necessary, and provide basic information justifying the request. If circumstances prevent the case manager's consideration and response to the request within the time frame necessary, the Discharger may at its discretion discharge some or all of the effluent to Miller Creek for the duration of the elevated flow event. The Discharger then shall submit a report within five business days from the date of the discharge. In the report, the Discharger shall fully explain the need to discharge to Miller Creek during the dry season and shall provide information regarding the total volume of flow discharged, duration of discharge, and estimates of dilution (effluent flow in receiving water flow) that occurred during this period. In accordance with the attached MRP, discharge quality shall be reported in the monthly self-monitoring report for that period.

D. The average dry weather effluent flow as measured at monitoring station EFF-001 as described in the attached MRP (**Attachment E**) shall not exceed 2.92 MGD. Actual average dry weather flow shall be determined for compliance with this prohibition over three consecutive dry weather months each year.

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

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations for Conventional and Non-Conventional Pollutants

1. Effluent Limitations for Conventional and Non-Conventional Pollutants – Discharge Points 001 and 002 – November through April, While Discharging to Miller Creek

During November 1 through April 30, the discharge to Miller Creek via Discharge Points 001 and 002 shall comply with the following effluent limitations in Table 6. Compliance shall be determined at Monitoring Location EFF-001 as described in the attached MRP (Attachment E).

Table 6. Effluent Limitations for Conventional and Non-Conventional Pollutants (November – April)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD 5-day@ 20°C (BOD_5)[1]	mg/L	30	45	--	--	--
Carbonaceous BOD ($CBOD_5$)[1]	mg/L	25	40	--	--	--
TSS	mg/L	30	45	--	--	--
BOD_5 (or $CBOD_5$) and TSS percent removal	%	85 (minimum)	--	--	--	--
pH[2]	s.u.	--	--	--	6.5	8.5
Oil and Grease	mg/L	10	--	20	--	--
Ammonia	mg/L as Nitrogen	10	--	18	--	--

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

Footnotes for Table 6:
[1] The Discharger may comply with the $CBOD_5$ effluent limits in lieu of the BOD_5 effluent limits.

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

2. Effluent Limitations for Conventional and Non-Conventional Pollutants - Discharge Points 001 and 002 – for the Month of May, While Discharging to Miller Creek

The discharge to Miller Creek via Discharge Points 001 and 002 during the month of May shall comply with the following effluent limitations in Table 7. Compliance shall be determined at Monitoring Location EFF-001 as described in the attached MRP (**Attachment E**).

Table 7. Effluent Limitations for Conventional and Non-Conventional Pollutants (Month of May)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD 5-day@ 20°C (BOD_5)[1]	mg/L	20	25	30	--	--
$CBOD_5$	mg/L	15	18	20	--	--
TSS	mg/L	15	18	20	--	--
BOD_5 (or $CBOD_5$) and TSS percent removal	%	85 (minimum)	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH[2]	s.u.	--	--	---	6.5	8.5
Oil and Grease	mg/L	5	--	15	--	--
Ammonia	mg/L as Nitrogen	6	--	--	--	--

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

Footnotes for Table 7:
[1] The Discharger may comply with the $CBOD_5$ effluent limits in lieu of the BOD_5 effluent limits.
[2] 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.

3. Total Chlorine Residual – Discharge Points 001 and 002 – While Discharging to Miller Creek

a. The discharge to Miller Creek via Discharge Points 001 and 002 shall meet the following limitation for total chlorine residual:

Instantaneous maximum of 0.0 mg/L

This requirement is defined as below the limit of detection in standard test methods, as defined in the latest edition of Standard Methods for the Examination of Water and Wastewater. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine, and sulfur dioxide dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff will conclude that these false positive chlorine residual exceedances are not violations of the effluent limitation.

b. Compliance for discharges to Miller Creek from the Plant effluent line shall be determined at Monitoring Location EFF-001. Compliance for discharges to Miller Creek from the storage ponds shall be determined at Monitoring Location EFF-002.

4. Enterococcus Bacteria – Discharge Points 001 and 002 – November through May, While Discharging to Miller Creek

The discharge to Miller Creek via Discharge Points 001 and 002 shall meet the following limitations of bacteriological quality, with compliance measured at Monitoring Station EFF-001:

The 30-day geometric mean shall not exceed 35 enterococcus colonies per 100 mL.

B. Effluent Limitations for Toxics Substances

1. Toxic Pollutants – November Through May, While Discharging to Miller Creek

The discharge to Miller Creek via Discharge Points 001 and 002 shall meet the following limitations for toxic pollutants, with compliance determined at Monitoring Location EFF-001.

Table 8. Effluent Limitations for Toxic Pollutants (November 1 – May 31)

Constituent	Units[4]	Final Effluent Limitations[1],[2]	
		Average Monthly (AMEL)	Maximum Daily (MDEL)
Copper	µg/L	8.6	11
Lead	µg/L	4.1	7.1
Nickel	µg/L	11	18
Selenium	µg/L	3.6	9.2
Cyanide	µg/L	6.9	14
Dioxin-TEQ[3]	µg/L	1.4×10^{-8}	2.8×10^{-8}

Footnotes for Table 8:

(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 associated with the minimum level (ML). The required MLs for pollutants with effluent limitations are given in the Regional Standard Provisions (Attachment G) and in the MRP (Attachment E).

(3) Final effluent limitations for dioxin-TEQ shall become effective starting December 1, 2019.

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

2. Whole Effluent Acute Toxicity – November Through May, While Discharging to Miller Creek

a. The discharge to Miller Creek via Discharge Points 001 and 002 shall comply with the following limits for acute toxicity. Compliance shall be measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E). Compliance with these effluent limits shall be achieved in accordance with MRP Section V.A (Attachment E).

(1) The survival of bioassay test organisms in 96-hour flow-through bioassays shall be:

i. An eleven (11)-sample median value of not less than 90 percent survival; and

ii. An eleven (11)-sample 90th percentile value of not less than 70 percent survival.

(2) These acute toxicity limits are further defined as follows:

i. 11-sample median limit:

Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.

ii. 90th percentile limit:

Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit if one or more of the past ten or fewer bioassay tests also show less than 70 percent survival.

b. 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.

3. Whole Effluent Chronic Toxicity – November through May, While Discharging to Miller Creek

a. There shall be no chronic toxicity in the discharge. Chronic toxicity is a detrimental biological effect of growth rate, reproduction, fertilization success, larval development, or any other relevant measure of the health of an organism population or community. Compliance with this limit shall be determined by analyses of indicator organisms and toxicity tests. Compliance shall be measured at Monitoring Location EFF-001 as described in the MRP (Attachment E).

b. The Discharger shall comply with the following tiered requirements based on results from representative samples of the effluent at Discharge Points 001 and 002 when discharging to Miller Creek, with compliance measured at Monitoring Location EFF-001 as described in

the attached MRP (Attachment E), meeting test acceptability criteria in MRP Section V.B.

(1) Conduct routine monitoring;

(2) Accelerate monitoring to monthly after exceeding a three sample median value of 1 chronic toxicity unit (TUc[1]) or a single sample maximum of 2 TUc or greater. Accelerated monitoring shall consist of monthly monitoring;

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

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

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

c. The Discharger shall monitor chronic toxicity using the test species and protocols specified in MRP Section V.B (Attachment E). The Discharger shall also perform chronic toxicity screening phase monitoring as described in Appendix E-1 of the MRP (Attachment E). Chronic toxicity 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. In 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 Marine and Estuarine Organisms," currently second Edition (EPA/600/4 91/003), with exceptions granted by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger's request and justification.

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[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).

4. Interim Effluent Limits – November Through May While Discharging to Miller Creek

The Discharger shall comply with the following interim effluent limit for dioxin-TEQ at Discharge Points 001 and 002. Compliance shall be measured at Monitoring Location EFF-001 as described in the MRP (Attachment E). The interim limit for dioxin-TEQ shall remain in effect until November 30, 2019. Starting December 1, 2019, the final effluent limit in Table 8 for dioxin-TEQ shall become effective.

Table 9. Interim Effluent Limitation for Dioxin-TEQ

Pollutant	Monthly Average Effluent limit (μg/L)
Dioxin-TEQ	6.3×10^{-5}

C. Effluent Limitations for Discharge to Storage Ponds/Wildlife Pond and Dry Weather Emergency Discharge

1. **Wet Season Discharge to the Storage Ponds.** The discharge to the storage ponds during November 1 through April 30 shall meet the effluent limits specified in IV.A.1, A.4, and B.1 through B.4 above, the discharge to the storage ponds during the month of May shall meet the effluent limits specified in IV.A.2, A.4, and B.1 through B.4 above. Compliance shall be determined at EFF-001 for dechlorinated effluent or EFF-001D for non-dechlorinated effluent to the storage ponds.

2. **Wet Season Discharge to the Wildlife Pond.** The discharge to the wildlife pond directly from the Plant effluent line during November 1 through April 30 shall meet the effluent limits specified in IV.A.1, A.3, A.4, and B.1 through B.4 above. The discharge to the wildlife pond directly from the Plant effluent line during the month of May shall meet the effluent limits specified in IV.A.2, A.3, A.4, and B.1 through B.4 above. Compliance shall be determined at EFF-001.

3. **End of Dry Season Discharge to Storage Ponds.** If the Discharger needs to discharge surplus wastewater remaining in the reclamation storage ponds to Miller Creek via Discharge Point 002 at the beginning of the discharge season (i.e., November) in compliance with Provision VI.C.2.e, the discharge to the storage ponds during the month preceding the onset of such discharge (i.e., October) shall comply with the effluent limits specified in A.1, A.4, B.1, B.2, and B.4 above, with compliance determined at EFF-001 for dechlorinated effluent and EFF-001D for non-dechlorinated effluent.

4. **Dry Season Discharge to Storage Ponds for Storage (Other than Reclamation).** If treated wastewater is discharged to the wildlife pond or storage ponds during June through September mainly for storage, for eventual discharge to Miller Creek, then this wastewater shall comply with effluent limits specified in A.2, A.4, B.1, and B.4. Compliance shall be

determined at Monitoring location EFF-001 for dechlorinated effluent or EFF-001D for non-dechlorinated effluent in accordance with the sampling requirements specified in the MRP (Attachment E). The Discharger may also sample at EFF-002 to determine compliance at the time of discharge.

5. **Dry Season Emergency Discharge.** If the Discharger needs to discharge to Miller Creek during the non-discharge season (during June 1 through October 31) in compliance with Discharge Prohibition III.C, (1) the discharge from Plant effluent line at the time of discharge or (2) the discharge from the storage ponds during the month preceding the onset of such discharge and during the month of such discharge, shall comply with all effluent limits specified in A.2, A.3, A.4, and B.1 through B.4 with compliance determined at EFF-001 for dechlorinated effluent or at EFF-001D (except chlorine residual) for non-dechlorniated effluent. Compliance for chlorine residual from pond discharge shall be determined at EFF-002.

For 1 and 2 above, if discharge to Miller Creek occurs concurrently with discharge to the ponds, compliance monitoring at EFF-001 for Miller Creek discharge via Discharge Points 001 and 002 can be used to satisfy the above monitoring requirements at EFF-001 for pond discharge.

D. Land Discharge Specifications

Not Applicable.

E. Reclamation Specifications

The Discharger shall comply with specifications for reclamation uses of treated wastewater established by Regional Water Board Order Nos. 92-064 and 89-127.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitation

Receiving water limitations are based on WQOs contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in receiving water:

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

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

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

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

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

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

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any place within 1 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, then 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.
e.	Temperature:	No surface water temperature rise greater than 4°F above the natural temperature of Miller Creek.

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 Standard Provisions.** The Discharger shall comply with all applicable items of the Regional Standard Provisions and Monitoring and Reporting Requirements included in (Attachment G) of this Order.

B. MRP Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E. The Discharger shall also comply with applicable sampling and reporting requirements in the two Standard Provisions listed in VI.A above.

C. Special Provisions

1. Reopener Provisions

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

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

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

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

d. If receiving water does not meet promulgated ammonia objectives.

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

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

g. Or as otherwise authorized by law.

The Discharger may request permit modification based on any of the circumstances described above. In any such request, the Discharger shall include an antidegradation and antibacksliding analysis.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Effluent Monitoring

The Discharger shall continue to monitor and evaluate the discharge from Discharge Points 001 and 002 (measured at EFF-001) for the constituents listed in the Regional Standard Provisions (Attachment G) according to the sampling frequency specified in the attached MRP (Attachment E).

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 Monitoring

The Discharger shall continue to 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)

(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, the Discharger 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 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:

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

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

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

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

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

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

(5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity (complying with requirements of Section IV.B.3 of the 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 comply with the following tasks and schedule to evaluate the concentrations of total ammonia and un-ionized ammonia in the effluent and receiving waters, the variability in the discharge, any mixing and dilution in the receiving waters, and any more-stringent ammonia criteria that may become effective in the foreseeable future.

Table 10. Receiving Water Ammonia Characterization Study Tasks and Schedule

Tasks	Compliance Date
(1) Submit a study plan that includes the following elements: (a) effluent and receiving water sampling locations; (b) sampling and analysis protocols (including means to evaluate diurnal variations, such as continuous monitoring); (c) sampling parameters (including, at a minimum, pH, salinity,	February 1, 2010

Tasks	Compliance Date
temperature, hardness, and total ammonia); (d) data interpretation models and other methods to be used (representing conservative, reasonable worst case conditions); and (e) implementation schedule.	
(2) Begin implementation of the study plan developed for Task (1).	March 15, 2010
(3) Submit annual status reports for all the tasks required by this provision that contain, at minimum, monitoring data collected during the previous year and necessary updates to the study plans specified in this provision.	Annually, on February 1, with the annual self-monitoring reports (SMRs) required by the MPR (Attachment E)
(4) Submit a final study report that includes the following elements: (a) sampling results, data interpretation, and conclusions, such as receiving water characterization, seasonal/diurnal variability, etc.; (b) determination if there is reasonable potential for the discharge to cause receiving water to exceed applicable ammonia objectives using procedures outlined in the Technical Support Document for Toxics Control (also see Fact Sheet, Attachment F); (c) if there is reasonable potential, total ammonia effluent concentration goals that account for (1) applicable ammonia objectives and (2) WQC that may foreseeably become applicable standards or objectives within the term of this permit or the next permit term, such as USEPA's *1999 Update of Ambient Water Quality Criteria for Ammonia* (EPA-822-R-99-014); The Discharger may incorporate a dilution credit based on a demonstrated mixing zone (consistent with *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* § 1.4.2.2) for ammonia concentration goals calculation, if necessary. (d) Compliance attainability with the total ammonia concentration goals described above.	Within 90 days after final data collection
(5) If there is reasonable potential and there would be compliance difficulty with the total ammonia concentration goals in task (4), submit a study plan that includes the following elements: (a) investigate treatment options to achieve compliance with the ammonia concentration goals, including a description and summary of the treatment options with a discussion of the pros and cons of each, (b) plan for bench scale tests or pilot scale tests or both, and (c) implementation schedule.	Within 60 days after completion of Task (4)
(6) Begin implementation of the study plan developed for Task (5) for those tasks necessary to comply with the total ammonia effluent concentration goals based on the ammonia objectives in effect at that time.	Within 45 days after submitting the study plan for Task (5)
(7) Submit a report summarizing results of Task (6) and a study plan that includes measures the Discharger will take to comply with the ammonia concentration goals, and implementation schedule for the above measures.	Within one year after starting implementation of Task (6)
(8) Submit a report documenting results of Task (7).	Within 180 days prior to Order expiration date

e. Freshwater Marsh/Wildlife Pond and Reclamation Storage Ponds Operation

The Discharger has constructed and maintains a freshwater marsh or wildlife pond and two reclamation storage ponds. The Discharger shall manage the wildlife and storage ponds in accordance with the following:

(1) No discharge to the wildlife ponds shall be made when flows to the Plant exceed the secondary treatment capacity (currently 8 MGD).

(2) No discharge to the storage ponds shall be made when flows to the Plant exceed the secondary treatment capacity (currently 8 MGD), if the water will be later used for reclamation.

(3) Wastewater in the reclamation storage ponds may be discharged through the outfalls from November 1 through May 31 only upon satisfying either of the following conditions:

(a) The Discharger receives written approval from the Executive Officer after demonstrating to his/her satisfaction that such discharge is necessary for prudent operation and maintenance of the storage and irrigation facilities, will be made in a way that has the least adverse effect on the environment, and has received the treatment required in the reclamation requirements; or

(b) The discharge is surplus wastewater remaining in the reclamation storage ponds at the end of the reclamation season.

(4) The Discharger may operate the wildlife marsh pond such that pond water levels may be maintained at lower levels, effluent from the Plant will be used to maintain levels, and sampling will be conducted at the perimeter of the pond. The following conditions shall be satisfied:

(a) To guard against predation, water levels shall be kept sufficiently high such that land bridges to nesting areas are unable to form;

(b) The marsh shall be managed such that dissolved oxygen concentrations are not reduced as a result of the lowered marsh water levels; and

(c) Operation and maintenance of the marsh and storage ponds shall continue in accordance with the existing operation plan, except as expressly allowed in this provision.

(5) Rainwater accumulated in the storage ponds over the wet season may be discharged to Miller Creek during the discharge season prior to using the ponds for effluent storage.

f. Storage Pond Discharge Characterization Study

The Discharger shall generate data to examine whether effluent quality has substantially changed after effluent is stored in the storage ponds during dry seasons and to determine whether it is appropriate to move the compliance location for discharges from the storage ponds to Miller Creek at EFF-001 (or EFF-001D) to EFF-002. The Discharger shall comply with the following requirements.

Table 11. Storage Pond Discharge Characterization Study

Task	Deadline
(1) Prepare a study plan that proposes a sampling period, sampling frequency, sampling locations, and protocols for sample collection, analysis, and reporting. The study plan shall be designed to investigate how natural factors, such as vegetation and wildlife, may impact water quality discharged from the storage ponds at EFF-002.	June 1, 2011
(2) Commence work in accordance with the study plan.	July 15, 2011
(3) Submit a final study report, acceptable to the Executive Officer, documenting the results of the investigation described in Task (1), above. The report shall include recommended strategies for managing the storage ponds to minimize impact when discharging from the ponds to Miller Creek. The report shall also include a description of the construction of the storage ponds. The description shall include the land use prior to pond construction; when the ponds were constructed; the materials used in construction; hydrologic properties of the land and soil surrounding the ponds; and an approximate water balance for the ponds during the dry season that accounts for influent to the ponds, discharge out of the ponds, evaporation, and groundwater seepage.	December 1, 2013

During the study period, the data collected for this study will not be used to determine compliance with the effluent limitations applicable to discharges from the ponds.

Direct discharge from the storage pond to Miller Creek at the end of the reclamation season may not be needed if several possible reclamation projects planned by the North Bay Water Reuse Authority and the Marin Municipal Water District move forward. Therefore, in lieu of conducting this study, the Discharger may, at its option, submit an analysis acceptable to Executive Officer that demonstrates that future “end of reclamation season” discharges from the Storage Ponds can be eliminated through increased reclamation demand and/or returning surplus storage pond water through the treatment plan. The analysis shall be submitted by April 1, 2011.

g. Miller Creek Public Access

The Discharger shall inspect and maintain, as needed, the following measures to reduce the likelihood of public contact with Miller Creek:

(1) Signs posted at regular intervals along the levee pathway adjacent to Miller Creek. The signs shall inform the public of the presence of treated wastewater and advise against public contact.

(2) Erect fencing or other suitable barriers at locations where pedestrian access from the pathway to Miller Creek is readily available to discourage public contact.

h. Reduction of Non-discharge Season and Reclamation Plan (Optional)

In the event that reclaimed water opportunities diminish beyond the Discharger's control, or other mitigation factors are demonstrated (i.e., plant upgrade, increased restoration), upon request by the Discharger, the Executive Officer will approve shorting the non-discharge season, e.g., from 5 months to 3 months. The Discharger's request shall comply with the following tasks and schedules:

Table 12. Reduction of Non-Discharger Season Requirement

Tasks	Deadline
(1) Submit a request acceptable to the Executive Officer to justify the need to reduce the non-discharge season.	No later than 2 months prior to the commencement of the non-discharge season.
(2) Develop and submit a reclamation study to identify and pursue all reasonable opportunities to maximize reclamation and reuse of treated wastewater. The plan shall specifically address: (a) A description of flows for all ongoing reclamation activities conducted within the past year; (b) Additional opportunities for reclamation, including expected feasibility, cost, and benefits (i.e., discharge flow reductions); and, (c) Planned projects for the next year and following years, including scheduled completion dates.	If request (1) above is approved, the Study Plan is due within 90 days and shall be updated and submitted annually.

i. Special Study to Examine Relationship Between TSS/BOD and Other Toxic Pollutants for Reduced Sampling During Blending (Optional)

The Regional Standard Provisions (Attachment G) requires dischargers to sample for all pollutants with effluent limits during blending. If the Discharger wishes to analyze BOD and TSS only (in addition to bacteria) during blending and use them as surrogates for other pollutants with effluent limits, the Discharger shall conduct a study to demonstrate to the satisfaction of the Executive Officer that

BOD and TSS correlate well with other toxic pollutants, especially those with effluent limits (except dioxins and furans), and if BOD and TSS are below the trigger concentration, 45 mg/L, that other pollutants will not exceed their effluent limits. If the Discharger chooses to proceed with the study, it shall comply with the following tasks and schedule.

Table 13. Special Study to Examine Relationship between BOD/TSS and Toxic Pollutants

Tasks	Deadline
(1) Prepare a study plan, including a schedule to implement the plan.	At the Discharger's discretion.
(2) Implement the study plan.	Within 30 days after Executive Officer approves the study plan or within 45 days after submitting the study plan if the Executive Officer does not comment on it.
(3) Submit a final report documenting findings and results.	Within 60 days after completing data collection and analysis.

Upon the Executive Officer's approval of the final study report, the Discharger may analyze for BOD and TSS only (in addition to bacteria) during blending. The Discharger, however, shall collect adequate samples for additional analysis, if necessary. If the concentrations of either of these two parameters exceed the trigger value of 45 mg/L, then the Discharger shall analyze all other pollutants with effluent limits (except dioxins and furans).

j. Miller Creek Temperature Study

The Discharger shall collect effluent and receiving water monitoring data for temperature to evaluate temperature impacts from the discharge near the Miller Creek outfall.

Table 14. Special Study to Examine Discharge Impacts on Receiving Water Temperature

Tasks	Deadline
(1) Prepare a study plan, including a schedule to implement the plan, that includes the following elements: • sampling locations (at least one upstream station un-impacted by the discharge and several downstream stations that represent temperature differences between upstream and downstream points in the receiving water—the study plan shall be sufficient to determine the temperature impacts of the discharge on Miller Creek), • sampling and analysis protocols, and • an implementation schedule.	March 1, 2010

Tasks	Deadline
(2) Implement the study plan.	Within 30 days after Executive Officer approves the study plan or within 45 days after submitting the study plan if the Executive Officer does not comment on it.
(3) Submit a final report documenting findings and results.	Within 90 days after data collection but no later than 180 days prior to Order expiration.

k. 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.

3. Best Management Practices and Pollution Prevention (P2)

a. Pollutant Minimization Program (PMP)

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

b. Annual P2 Report

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

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

(2) *A discussion of the current pollutants of concern.* Periodically, the Discharger shall determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall address the reasons 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 the 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 also address specific criteria used to measure the effectiveness of each of the tasks 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 detail how it intends to continue or change its tasks in order to more effectively reduce the amount of pollutants to the treatment plant, and 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. Actions and Reports

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 Executive Officer:

(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. Wastewater Treatment Reliability and Adequacy Specifications

a. Reliability Status Report

As part of reviewing requests for exceptions to the Basin Plan discharge Prohibition 1, the Regional Water Board staff will 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 updated as necessary.

(1) The Discharger shall continue to maintain a Reliability Status Report (previously, the Wastewater Treatment Facility Improvements 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 practicable.

(3) The Discharger shall provide the Executive Officer, upon request, a summary 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 submit, by February 1 each year, a description or summary of review and evaluation procedures and applicable changes to its Reliability Status Report.

b. Corrective Measures to Minimize Blending

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

Table 15. Corrective Measures to Minimize Blending

Task	Deadline
(1) **Wet Weather Improvements.** Submit a technical report that evaluates alternatives for potential wet weather conveyance and treatment plant improvements. Comparisons of various alternatives shall be based on costs, effectiveness, and implementability. The report shall propose preferred alternative(s) based on the results of the analysis. At a minimum, the report shall include the alternatives identified in the Discharger's *No Feasible Alternatives Analysis* dated June 2, 2008: • Continue rehabilitation of sewer collection system components that are in poor condition. • Continue to implement short-term operational modifications to increase flow that receives secondary treatment to 8 MGD; identify and implement long-term facility modifications, which may include a 1 MG flow equalization basin, to maximize flow that receives secondary treatment to 17.2 MGD; reduce the storm water flow directed to the headworks of the Plant. • Implement the Capacity, Management, Operations, and Maintenance (C-MOM) Program as described in the District's Sanitary Sewer Management Plan (SSMP).	May 1, 2010
(2) **Workplan.** Prepare a workplan to implement the preferred alternatives from the technical report in Task (1). The workplan shall include an anticipated schedule for achieving the identified milestones.	August 1, 2010
(3) **Implementation.** Begin implementing the measures identified in the workplan.	September 15, 2010
(4) **Annual Reports.** Provide annual updates on the progress in completing measures specified in the workplan.	Annually with the Annual SMRs due each February 1 as required by the MRP (Attachment E)
(5) **Final Report**. Submit a final reporting documenting findings and results of the study described in the workplan.	Within 60 days after completing all tasks but no later than 180 days before Order expires.
(6) **No Feasible Alternatives Analysis.** Complete a utility analysis (if the Discharger seeks to continue to bypass peak wet weather flows around its secondary treatment units). The utility analysis shall satisfy 40 CFR 122.41(m)(4)(i)(A)-(C) and any applicable policy or guidance such as the process set forth in Part 1 of USEPA's Peak Wet Weather Policy's No Feasible Alternatives Analysis Process (available at http://cfpub.epa.gov/npdes/wetweather.cfm) once it is finished.	180 days prior to the Order expiration date

c. Dry Weather Flow Capacity Analysis

If the Discharger plans to increase the Plant dry weather flow design treatment capacity, the Discharger shall submit an engineering report, no later than six months prior to a planned increase, which shall include, but not be limited to, the following information, for Executive Officer approval.

(1) An engineering report describing planned changes in operation and/or equipment that will enable the proposed increase in treatment capacity. The report shall provide sufficient detail regarding existing and proposed operation and/or equipment to allow the Regional Water Board to independently assess whether such planned changes will accommodate the increased flows proposed.

(2) An Antidegradation Analysis that is consistent with the requirements of State Water Board Resolution No. 68-16 and USEPA rules regarding antidegradation expressed at 40 CFR 131.12, where receiving water quality currently exceeds the level necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.

(3) An analysis of reclamation use(s) as an alternative to the discharge of treated wastewater at a rate greater than the current dry weather treatment capacity.

(4) If applicable, the Discharger shall demonstrate that proposed operational and/or equipment modifications, which will result in an increased treatment capacity, will be consistent with the requirements of the California Environmental Quality Act.

5. Special Provisions for POTWs

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

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

(8) This Order does not authorize permanent on-site biosolids storage or disposal activities. The Discharger shall file a Report of Waste Discharger and bring the site into compliance with all applicable regulations prior to commencement of any such activity.

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

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

b. Sanitary Sewer Overflows and Sewer System Management Plan

The Discharger's collection system is part of the facility that is subject to this Order. As such, the Discharger shall properly operate and maintain its collection system (Attachment D, Standard Provisions - Permit Compliance, subsection I.D). The Discharger shall report any noncompliance (Attachment D, Standard Provisions - Reporting, subsections V.E.1 and V.E.2) and mitigate any discharge from the Discharger's collection system in violation of this Order (Attachment D, Standard Provisions - Permit Compliance, subsection I.C). The General Waste Discharge Requirements for Collection System Agencies (General Collection System WDRs, Order No. 2006-0003

DWQ) has requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must comply with both the General Collection System WDRs 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 WDRs requirements for proper operation and maintenance and mitigation of spills will satisfy the corresponding federal NPDES requirements specified in this Order. Following notification and reporting requirements in the General Collection System WDRs will satisfy NPDES reporting requirements for sewage spills from the Discharger's collection system.

c. Collection System Improvements

The Discharger shall continue to submit annual reports, by February 28, to the Regional Water Board that specifically address:

(1) Ongoing collection system projects and improvement projects completed within the past year, and progress toward reducing infiltration and inflow;

(2) Additional opportunities for collection system improvements, including expected feasibility, cost, and benefits; and

(3) Planned projects for the next year, and following years, including scheduled completion dates.

6. Other Special Provisions

a. Action Plan for Copper

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

Table 16. Copper Action Plan

Task	Compliance Date
(1) Review Potential Copper Sources The Discharger shall submit an inventory of potential copper sources to the treatment plant.	Within 30 days of the 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	February 28, 2010, with the 2009 annual P2 report

Task	Compliance Date
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 discharge.	
(3) Implement Additional Measures If the three-year rolling mean copper concentration of San Pablo Bay exceeds 3.0 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

b. Action Plan for Cyanide

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

Table 17. Cyanide Action Plan

Task	Compliance Date
(1) Review Potential Cyanide Contributors The Discharger shall submit an inventory of potential contributors of cyanide to the Plant (e.g., metal plating operations, hazardous waste recycling). If no contributors of cyanide are identified, Tasks (1) and (2) 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 the 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.	June 1, 2010

Task	Compliance Date
(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

c. Compliance Schedule for Dioxin-TEQ

The Discharger shall comply with the following tasks and time schedule for dioxin-TEQ:

Table 18. Dioxin-TEQ Compliance Schedule

Tasks	Deadline
(1) The Discharger shall continue its dioxin monitoring at monitoring point EFF-001 (or EFF-001D) and comply with the reporting requirements contained in the MRP. The Discharger shall also comply with the following interim effluent limit: Dioxin-TEQ: AMEL = $6.3x10^{-5}$ μg/L	Upon Order effective date
(2) If dioxin-TEQ effluent monitoring data show that the Discharger is out of compliance, as described in SIP Section 2.4.5, Compliance Determination, the Discharger shall submit a plan to identify dioxin-TEQ sources to the discharge and identify source control measures to reduce concentrations of these pollutants to the treatment Plant, and therefore to receiving waters.	No later than 12 months after monitoring data show that the Discharger is out of 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)

Tasks	Deadline
(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.	December 1, 2019 (10 years from Order effective date)

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 reportable pollutants shall be determined using sample reporting protocols defined in the MRP and **Attachment A** 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 reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (ML).

B. Multiple Sample Data

When determining compliance with a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses and the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND), 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
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)
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 permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

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

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

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

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

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

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of 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
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters 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
All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

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

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

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

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

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

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

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

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

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

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management

methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

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

Reporting Level (RL)
RL is the ML (and its associated analytical method) chosen by the 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
The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

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

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

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

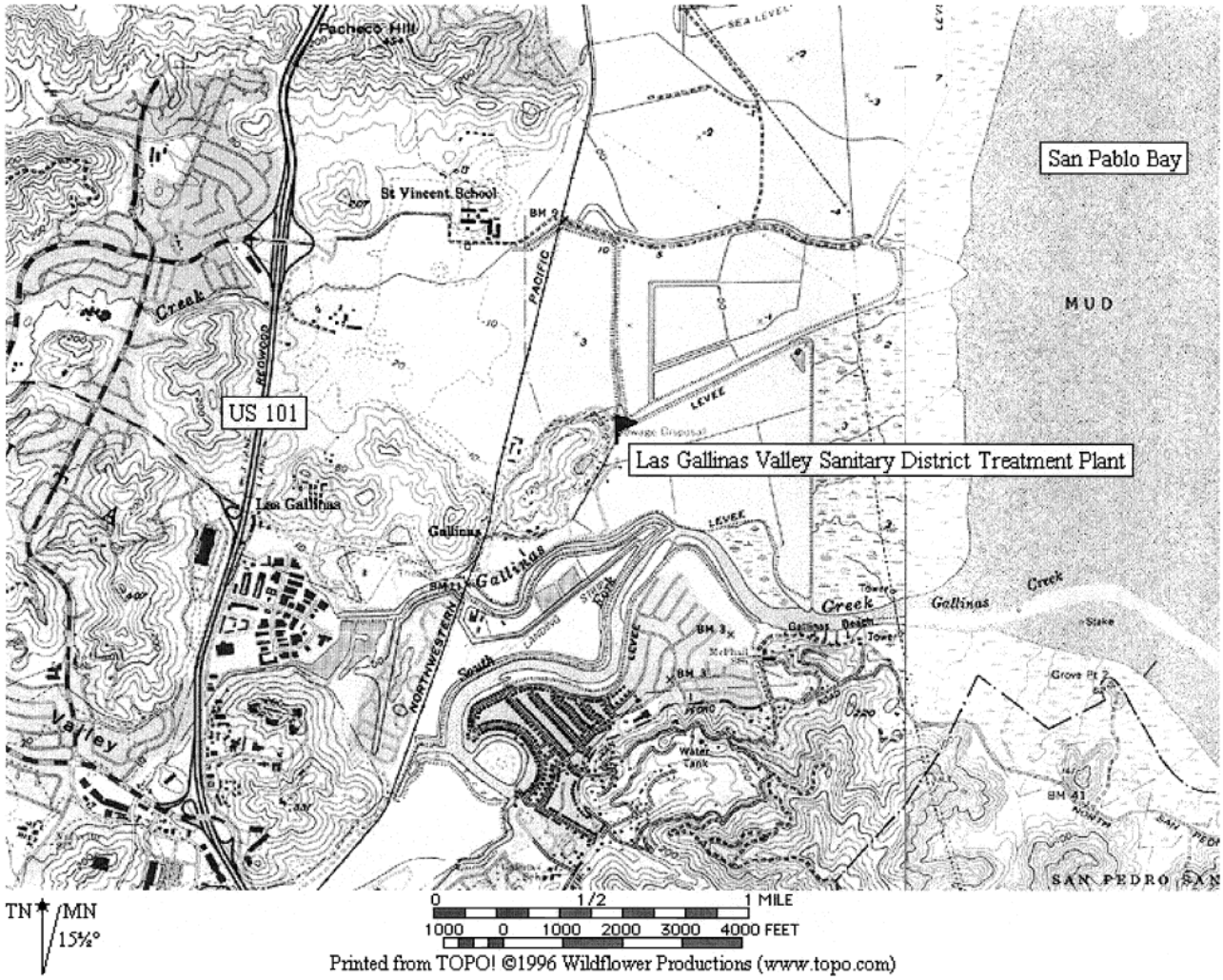
where:
x is the observed value;
μ is the arithmetic mean of the observed values; and

n is the number of samples.

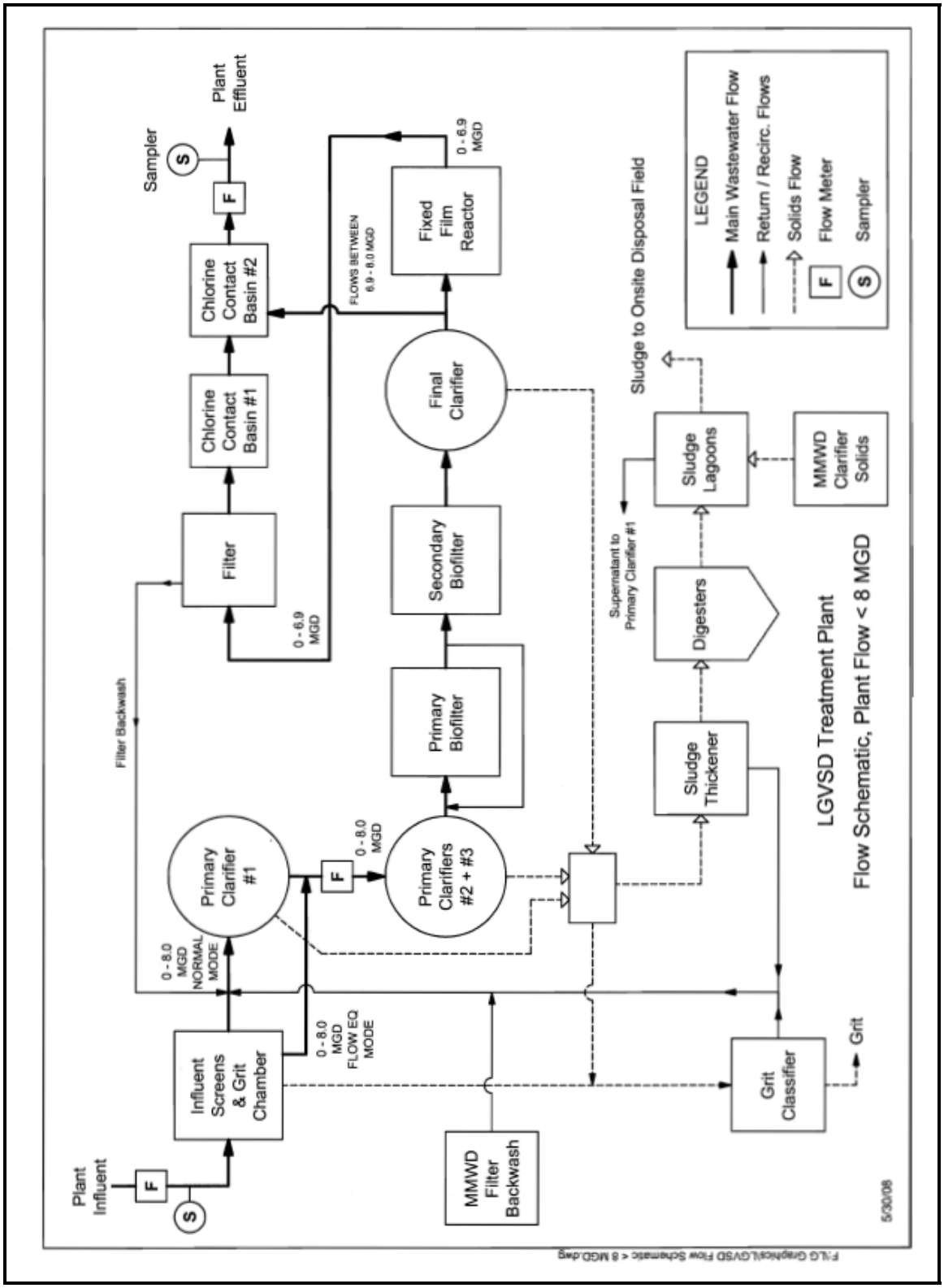
Toxicity Reduction Evaluation (TRE)

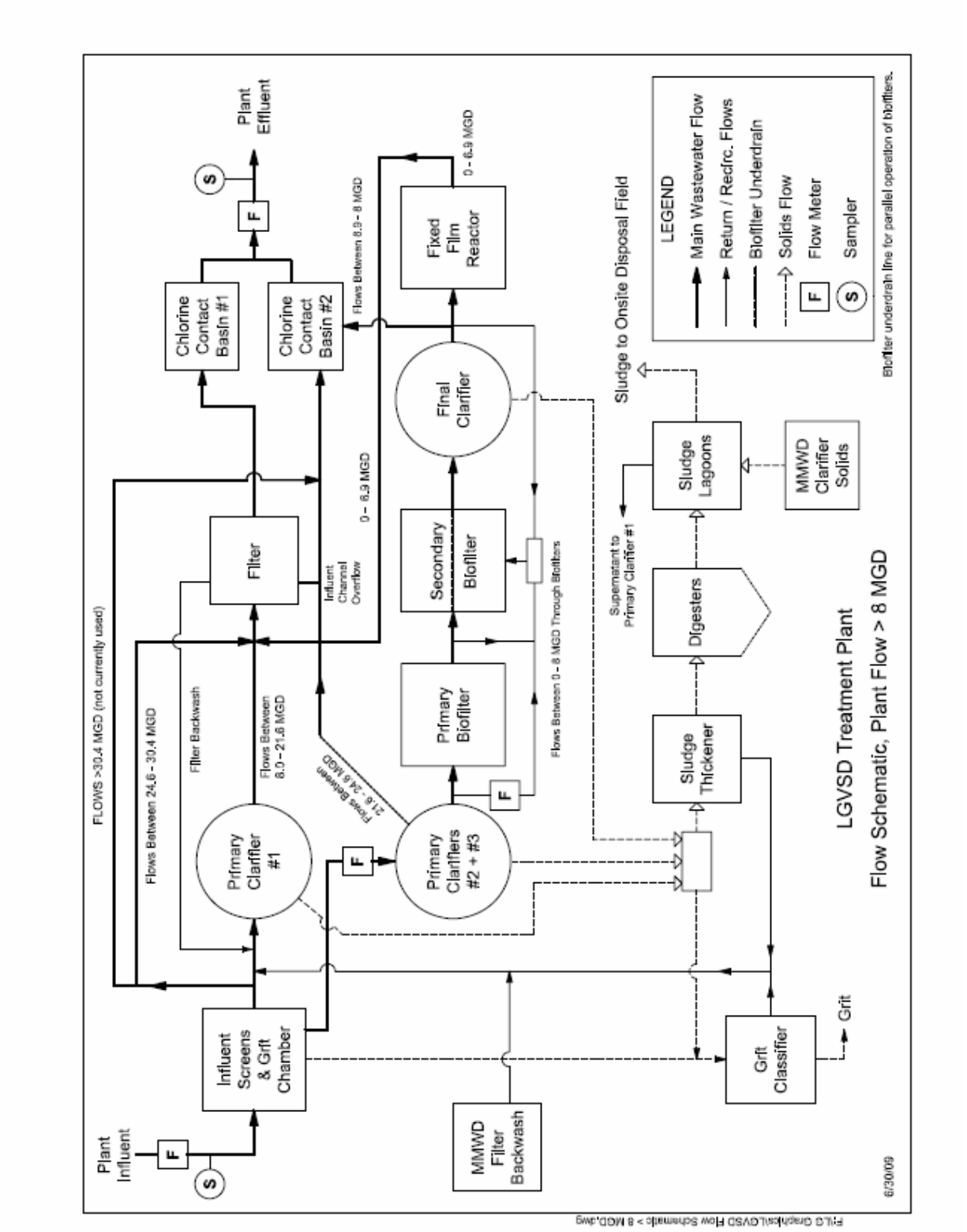
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection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

ATTACHMENT B – FACILITY MAP



ATTACHMENT C – PROCESS FLOW DIAGRAM




LGVSD Treatment Plant
Flow Schematic, Plant Flow > 8 MGD
FLOWS >30.4 MGD (not currently used)
Flows Between 24.6 - 30.4 MGD
Filter Backwash
Flows Between 6.0 - 21.6 MGD
Flows Between 21.6 - 24.6 MGD
Influent Channel Overflow
0 - 6.9 MGD
Flows Between 6.9 - 8 MGD
0 - 6.9 MGD
Flows Between 0 - 8 MGD Through Biofilters
Supernatant to Primary Clarifier #1
Sludge to Onsite Disposal Field
Biofilter underdrain line for parallel operation of biofilters.
Plant Influent
Plant Effluent
Influent Screens & Grit Chamber
Primary Clarifier #1
Primary Clarifiers #2 + #3
Filter
Chlorine Contact Basin #1
Chlorine Contact Basin #2
Primary Biofilter
Secondary Biofilter
Final Clarifier
Fixed Film Reactor
MMWD Filter Backwash
Grit Classifier
Grit
Sludge Thickener
Digesters
Sludge Lagoons
MMWD Clarifier Solids
LEGEND
Main Wastewater Flow
Return / Recirc. Flows
Biofilter Underdrain
Solids Flow
Flow Meter
Sampler
6/30/09
F:\LG Graph\sil\LGVSD Flow Schematic > 8 MGD.dwg

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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 Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR 122.41(a).)

2. The 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 CFR § 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 CFR § 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 CFR 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 CFR 122.41(e).)

E. Property Rights

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

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

F. Inspection and Entry

The 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 CFR 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 CFR 122.41(i)(1));

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

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

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

G. Bypass

1. Definitions

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

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

2. Bypass not exceeding limitations. The 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 CFR 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 CFR 122.41(m)(4)(i)):

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

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

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

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

5. Notice

a. **Anticipated bypass.** If the 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 CFR 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 CFR 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the 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 CFR 122.41(n)(1).)

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

If the 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 CFR 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the 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 CFR 122.41(l)(3); 122.61.)

III. STANDARD PROVISIONS – MONITORING

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

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

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the 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 CFR 122.41(j)(2).)

B. Records of monitoring information shall include:

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

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

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

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

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

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

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The 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 CFR 122.41(h); Wat. Code, 13267.)

B. Signatory and Certification Requirements

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

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

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

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

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

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

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

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

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware

that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR 122.22(d).)

C. Monitoring Reports

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

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

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

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The 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 CFR 122.41(l)(6)(i).)

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

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

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

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

F. Planned Changes

The 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 CFR 122.41(l)(1)):

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

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [*40 CFR §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 CFR §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 CFR 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 CFR 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 CFR 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

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

A. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions [*40 CFR §122.41(a)(2)*] [*CWC 13385 and 13387*].

B. Any person may be assessed an administrative penalty by the Regional Water Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000 [*40 CFR §122.41(a)(3)*].

C. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both [*40 CFR §122.41(j)(5)*].

D. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both [*40 CFR §122.41(k)(2)*].

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 CFR 122.42(b)):

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

B. 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 the Order. (40 CFR 122.42(b)(2).)

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

40 CFR 122.48 requires that all NPDES permits specify monitoring and reporting requirements. California 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 that implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with this MRP as adopted by the Regional Water Board, and with all of the requirements contained in the Regional Standard Provisions (Attachment G). The MRP 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 the Regional Standard Provisions, the MRP prevails.

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

C. Sampling and analysis of additional constituents is required pursuant to the Regional Standard Provisions (Attachment G).

D. Laboratories analyzing monitoring samples shall be certified by the Department of Public Health in accordance with CWC 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 Effluent Limits

CTR #	Constituent	Types of Analytical Methods[1] Minimum Levels (µg/L)								
		Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
6	Copper			5		0.5	2			
7	Lead			5	5	0.5	2			
9	Nickel			5		1	5			
10	Selenium			5		2	5	1		

CTR #	Constituent	Types of Analytical Methods[1] Minimum Levels (µg/L)								
		Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
14	Cyanide	5								
--	Dioxin-TEQ[2]									
--	Total Ammonia	0.2 mg/L (as N) using titration method								

Footnotes for Table E-1:

[1] Analytical Methods / Laboratory techniques are defined as follows:
COLOR – Colorimetric
FAA - Flame Atomic Absorption
GFAA - Graphite Furnace Atomic Absorption
ICP - Inductively Coupled Plasma
ICPMS - Inductively Coupled Plasma/Mass Spectrometry
SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
DCP - Direct Current Plasma

[2] The Discharger shall achieve MLs for Dioxin-TEQ equal to ½ the MLs specified in U.S. EPA Method 1613.

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 Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Influent	INF-001	At any point in the Plant headworks at which all waste tributary to the system is present and preceding any phase of treatment.
Effluent (Plant)	EFF-001 (Chlorinated and dechlorinated effluent)	At any point in the discharge line from the Plant to Miller Creek (via either 001 or 002) or to the storage ponds, where treatment of the wastewater is completed (after chlorination and dechlorination), between the outfall and the point at which all flow tributary to the outfall is present.
Effluent (Plant)	EFF-001-D (Chlorinated effluent but prior to dechlorination)	At a point in the disinfection facility where adequate contact with the disinfectant is assured.
Effluent (Storage Ponds)	EFF-002 (when discharging from storage ponds to Miller Creek)	At a point near the outlet of the storage pond to Miller Creek or directly from the outlet line.
Receiving Water	RSW-001	At a point in Miller Creek within 20 feet downstream from Discharge Point 002, formerly C-2.
Receiving Water	RSW-002	At a point in Miller Creek within 1000 feet upstream of Discharge Point 001 and representative of background water quality, formerly C-3.

III. INFLUENT MONITORING REQUIREMENTS

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

Table E-3. Influent Monitoring

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency
Flow[2]	MGD/ MG	Cont/D	Cont
BOD_5 or $CBOD_5$	mg/L and kg/day	C-24	1/week
TSS	mg/L and kg/day	C-24	5/week
Cyanide	μg/L	Grab	1/month

Legend for Table E-3

Unit Abbreviations
- MGD = million gallons per day
- MG = million gallons
- mg/L = milligrams per liter
- kg/day = kilograms per day
- μg/L = milligrams per liter

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

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. Maximum and minimum average daily flow rates (MGD) in a month

[2] The Discharger may elect to monitor $CBOD_5$ in lieu of BOD_5, as defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations EFF-001 and EFF-001-D

The Discharger shall monitor treated wastewater during wet seasons (November 1 – April 30) and during the dry weather month of May (if discharging to Miller Creek occurs) at EFF-001 (for dechlorinated effluent) or EFF-001D (for non-dechlrorinated effluent) as follows.

Table E-4. Effluent Monitoring – EFF-001

Parameter	Units	Sample Type[13]	Minimum Sampling Frequency
Flow[1]	MGD/MG	Cont/D	Cont
BOD_5 or $CBOD_5$	mg/L and kg/d	C-24	1/week
TSS	mg/L and kg/d	C-24	5/week
BOD_5 or $CBOD_5$ and TSS removal[2]	Percent (%)	Calculate	1/month
Oil and Grease[3]	mg/L and kg/d	Multiple Grabs	1/month
Enterococcus Bacteria	CFU/100mL or MPN/100mL[4]	Grab	3/week
pH[5]	s.u.	Grab or Cont	1/day
Total Chlorine Residual[6]	mg/L	Cont/H	1/hour
Acute Toxicity[7]	% survival	Flow through	1/month
Chronic Toxicity[8]	TUc	C-24	1/quarter
Temperature	°C	Grab	1/day
Dissolved Oxygen (D.O.)	mg/L	Grab	1/day
Sulfides, total and dissolved (if D.O. is lower than 2 mg/L)	mg/L	Grab	1/day
Copper	µg/L	C-24	1/month
Lead	µg/L	C-24	1/month
Nickel	µg/L	C-24	1/month
Selenium	µg/L	C-24	1/month
Cyanide[9]	µg/L	Grab	1/month
Dioxin-TEQ[10]	µg/L	Grab	1/year
Total Ammonia	mg/L as N	C-24	1/month
Un-ionized Ammonia	mg/L as N	Calculate	1/month
Remaining Priority Pollutants	µg/L	[11]	1/year
Standard Observations[12]		[12]	1/week

Legend for Table E-4

Unit Abbreviations:

MGD = million gallons per day
MG = million gallons
mg/L = milligrams per liter
mg/L as N = milligrams per liter as nitrogen
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
MPN/100 mL = most probable number per 100 milliliters
TUc = chronic toxic units

Sample type:

Cont = continuous monitoring
Cont/D = measured continuously and recorded and reported daily
Cont/H = measured continuously and recorded and reported hourly
C-24 = 24-hour composite

Sampling frequency:

1/day	= once per day
1/week	= once per week
1/month	= once per month
5/week	= five times per week
3/week	= three times per week
1/hour	= once per hour
1/quarter	= once per quarter
2/year	= twice per year
1/year	= once per year

Footnotes for Table E-4

[1] Flow Monitoring.
Flows shall be monitored continuously and the following shall be reported in self-monitoring reports for each month:
a. Daily average flow rate (MGD),
b. Total daily flow volume (MG),
c. Monthly average flow rate (MGD),
d. Total monthly flow volume (MG), and
e. Maximum and minimum daily average flow rates (MGD).

[2] BOD_5 and TSS. The percent removal for BOD_5 (or $CBOD_5$) and TSS shall be reported for each calendar month in accordance with Effluent Limitations IV.A.1 and 2.

[3] Oil & Grease. Each oil & 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. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

[4] Enterococcus Bacteria. Enterolert method may be used to demonstrate compliance. If this method is used, results shall be reported as MPN/100mL.

[5] pH. If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in monthly self-monitoring reports.

[6] 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; and (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] Acute Toxicity. The test shall be performed and reported in accordance with the Acute Toxicity Requirements specified in Section V.A of this MRP.

[8] Chronic Toxicity. The test shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in Section V.B of this MRP.

[9] Cyanide. Compliance may be demonstrated by measurement of weak acid dissociable cyanide.

[10] 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 MLs. Alternative methods of analysis must be approved by the Executive Officer. In addition to reporting 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.

[11] Remaining Priority Pollutants. The sample type and analytical method shall be as described in the Regional Standard Provisions (Attachment G) or as amended and subsequently approved by the Executive Officer.

[12] Standard Observations. Standard observations are specified in the Regional Standard Provisions (Attachment G).

[13] Sample Type and Method. The sample type and analytical method shall be as described in the Regional Standard Provisions (Attachment G) or as amended and subsequently approved by the Executive Officer.

B. Monitoring Locations EFF-002

The Discharger shall monitor discharges from the storage ponds to Miller Creek (Discharge Point 002) at EFF-002 (when discharge is occurring) as follows.

Table E-5. Effluent Monitoring – EFF-002

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency
Flow[2]	MG	Continuous	Each occurrence
Total Chlorine Residual[3]	mg/L	Grab	1/day

Footnotes for Table E-5:

[1] Unit Abbreviations:
MG = million gallons
mg/L = milligrams per liter

[2] Flow. If no flow meters are installed, the Discharger shall develop written procedures for estimating the flow volume (MG), and use that procedure to estimate the flow volume and report the flow volume.

[3] Chlorine residual. The Discharger shall sample daily for chlorine residual when discharge from the storage pond to Miller Creek is occurring. The first grab sample shall be taken immediately upon commencement of discharge to Miller Creek and daily thereafter throughout the discharge event. Sampling shall increase to twice daily if non-dechlorinated effluent is directed to the storage ponds while discharge from the ponds to Miller Creek is occurring.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor acute and chronic toxicity as follows.

A. Whole Effluent Acute Toxicity

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

2. Test species shall be rainbow trout unless specified otherwise in writing by the Executive Officer.

3. All bioassays shall be performed according to the most up-to-date protocols in 40 CFR 136, currently in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters 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. The sample may be taken from final secondary effluent prior to disinfection. Monitoring of the bioassay water shall include, on a daily basis, the following parameters: pH, dissolved oxygen, 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, the bioassay test shall be repeated with new fish as soon as practical and shall be repeated until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater).

B. Whole Effluent Chronic Toxicity

1. Chronic Toxicity Monitoring Requirements

a. **Sampling.** The Discharger shall collect 24-hour composite samples of the effluent at Monitoring Location EFF-001 for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

b. **Test Species.** The test species shall be *Mysidopsis bahia*. The Discharger shall conduct three-species screening chronic toxicity test as described in Appendix E-1 prior to any significant change in the nature of the effluent or to application for permit renewal. The most sensitive species shall be used for routine chronic toxicity monitoring. The Executive Officer may change the test species if data suggest that another test species is more sensitive to the discharge.

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

(1) Routine Monitoring: Quarterly

(2) Accelerated Monitoring: Monthly

The Discharger shall conduct accelerated monitoring once per month after exceeding a three-sample median of 1 TUc or a single sample maximum of 2 TUc for discharges via Discharge Points 001 and 002, or as otherwise specified by the Executive Officer.

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 at 100%, 85%, 70%, 50%, and 25%. The "%" represents percent effluent as discharged. Test sample pH in each dilution in the series may be controlled to the level of the effluent sample as received prior to being salted up.

2. Chronic Toxicity Reporting Requirements

a. **Routine Reporting.** Toxicity test results for the current reporting period shall include the following, 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} ... etc.) in 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

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

(10) IC50 or EC50 value(s) for reference toxicant test(s)

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

b. **Compliance Summary.** The results of the chronic toxicity testing shall be provided in the most recent self monitoring report and shall include a summary table of chronic toxicity data from at least three 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

The Discharger is currently subject to the requirements of Order No. 92-064, which includes reclamation monitoring and reporting requirements for irrigation uses of reclaimed wastewater, and Order No. 89-127, which includes monitoring and reporting requirements for the water recycling uses of treated wastewater.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. The Discharger shall continue to participate in the Regional Monitoring Program (RMP), which involves collection of data on pollutants and toxicity in water, sediment, and biota. The Discharger's participation and support of the RMP has been considered in establishing the level of receiving water monitoring required by this Order.

B. The Discharger shall monitor Miller Creek while discharge to Miller Creek occurs at RSW-001 and RSW-002 as follows.

Table E-6. Receiving Water Monitoring Requirements

Parameter	Units[1]	Sample Type	Minimum Sampling Frequency
pH	s.u.	Grab	1/month
Temperature	°C	Grab	1/month
Dissolved Oxygen (D.O.)	mg/L	Grab	1/month
Sulfide (if D.O.<2 mg/L)	mg/L	Grab	1/month
Total Dissolved Solids	mg/L	Grab	1/month
Turbidity	mg/L	Grab	1/month
Chlorophyll-a	µg/L	Grab	1/month
Total Ammonia	mg/L as N	Grab	1/month
Un-ionized Ammonia	mg/L as N	Calculate	1/month
Hardness	mg/L as $CaCO_3$	Grab	1/month
Salinity	ppt	Grab	1/month
All applicable standard observations	---	Visual observations	1/month

Unit Abbreviations:
s.u. = standard units
ºC = degree Celsius
mg/L = milligrams per liter
µg/L = micrograms per liter
ppt = parts per thousand

IX. OTHER MONITORING REQUIREMENTS

A. Pretreatment Monitoring Requirements

Not Applicable.

B. Biosolids Monitoring Requirements

The Discharger shall comply with biosolids monitoring requirements required by 40 CFR Part 503.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with the federal Standard Provisions (Attachment D) and the Regional 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 that there could 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 February 1 of each year, covering the previous calendar year. The report shall contain the items described in the Regional Standard Provisions (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
Each occurrence	Permit effective date	All
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
3/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	November 1 through January 31 February 1 through April 30 May 1 through July 31 August 1 through October 31
1/year	Permit effective date	Once during discharge season when discharge to Miller Creek occurs

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 (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.

e. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above, in Attachment A, and in 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 AWEL) 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.

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) propose time schedule for corrective actions. Identified violations shall include a description of the requirement that was violated and a description of the violation.

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

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

C. Discharge Monitoring Reports (DMRs)

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

2. DMRs must be signed and certified as required by the Standard Provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address 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 toward meeting compliance schedules established by section VI.C.8 of this Order in the annual SMR.

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

I. Definition of Terms

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

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

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

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

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

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

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

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

1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables, 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 of 100%, 85%, 70%, 50%, 25%, and 0 %, where "%" is percent effluent as discharged, or as otherwise approved the Executive Officer.

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).

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

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

[1] (a) Marine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.

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

(b) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.

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

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

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" fully apply to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 215012001
CIWQS Place ID	236598
Discharger	Las Gallinas Valley Sanitary District
Name of Facility	Las Gallinas Valley Sanitary District Sewage Treatment Plant and its sewage collection system
Facility Address	300 Smith Ranch Road
	San Rafael, CA 94903
	Marin County
Facility Contact, Title and Phone	Mark Williams, General Manager, (415) 472-1734
Authorized Person to Sign and Submit Reports	Same as above
Mailing Address	300 Smith Ranch Road, San Rafael CA 94903
Billing Address	Same as mailing address
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	N
Reclamation Requirements	Order Nos. 89-127 and 92-064
Mercury Discharge Requirements	Order No. R2-2007-0077
Facility Permitted Flow	2.92 million gallons per day (MGD)
Facility Design Flow	2.92 MGD (average dry weather treatment capacity) 8.0 MGD (peak wet weather secondary treatment capacity) 25 MGD (peak wet weather hydraulic capacity)
Watershed	San Pablo Bay
Receiving Water	Miller Creek
Receiving Water Type	Inland surface water
Service Areas	City of San Rafael (northern area) and portions of Marin county
Population Served	32,000

A. The Las Gallinas Valley Sanitary District (hereinafter the Discharger) is the owner and operator of the Sewage Treatment Plant (Plant), and its sewage collection system (collectively the facility). The facility provides secondary treatment of the wastewater collected from its service area and discharges it to Miller Creek.

For 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 Miller Creek, a water of the State and the United States, has previously been regulated by Order No. R2-2003-0108 (previous permit), which was adopted on December 3, 2003, became effective on January 1, 2004, and expired on November 30, 2008.

C. The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on June 3, 2008, and provided supplemental documentation on November 11, 2008. The application was deemed complete and the previous Order was administratively extended.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment

1. **Wastewater Treatment Processes**. The Plant provides secondary treatment for wastewater collected from the northern area of the City of San Rafael. The Discharger's current service population is approximately 32,000. The Plant has a dry weather flow design capacity of 2.92 MGD and can treat up to 8.0 MGD with full secondary treatment. During 2008, the average dry weather effluent flow was 2.15 MGD (July- September), and the average wet weather effluent flow during 2008-2009 (November-April) was 3.12 MGD. The maximum daily average effluent flow occurred on January 4, 2008, and it was 13.5 MGD.

   Treatment processes include two mechanically cleaned fine screens, two aerated grit chambers, a 80-foot diameter circular primary clarifier, two 65-foot diameter intermediate clarifiers that can be operated as additional primary clarifiers before secondary treatment, chemical addition to primary clarifiers during high flow conditions, two trickling filters, a secondary clarifier, a fixed film reactor for nitrification, eight coarse media (anthracite) deep-bed filters, two underground chlorine contact basins, disinfection using sodium hypochlorite for disinfection, and dechlorination using sodium bisulfite. The treatment process may also employ chemical additions to enhance performance of the primary or secondary clarifiers, particularly during high flow conditions. The treatment processes configuration varies depending on influent flow and discharge season as follows:

   Dry Weather Operation (up to 2.92 MGD). During the non-discharge season (currently June 1 through October 31 annually, plus May when conditions allow), wastewater receives secondary treatment with all unit processes operating except dechlorinating agent is not added to the effluent. Instead, the chlorine is removed by

natural processes in the storage ponds. Operation of the fixed film reactor may be varied to optimize ammonia levels for maximum effectiveness of disinfection. The deep bed filters are currently operated year-round, although such operation is not required during the non-discharge season under the Discharger's reclamation permit. The Discharger may use this flexibility to investigate other means of optimizing treatment that do not involve operation of the deep bed filters during the non-discharge season.

Beginning in 2007, to more closely match the needs of the Marin Municipal Water District's reclamation project, the Plant began to use the primary clarifier as means to equalize Plant flow. Flow to the primary clarifier is stopped at a selected flow rate, and the contents of this clarifier are returned to the Plant (through the intermediate clarifiers) at night when influent flows subside to provide steady flow through the Plant. This operating scenario generally applies when daily average flows are below 4.0 MGD.

Wet Weather Operation. The Plant receives significant inflow and infiltration (I&I) under rainy conditions. Under wet weather conditions, the Plant can treat up to 8 MGD through its secondary treatment process. The following summarizes the Plant treatment unit operation at varying influent flows:

a) All flows up to 6.9 MGD receive complete secondary treatment, plus nitrification, deep bed filtration, and disinfection.

b) Flows in excess of 6.9 MGD through 8.0 MGD receive complete secondary treatment and disinfection.

c) Flows in excess of 8.0 MGD through 21.6 MGD receive primary treatment, partial deep bed filtration and disinfection.

d) Flows in excess of 21.6 through 24.6 receive primary treatment and disinfection.

e) Flows in excess of 24.6.MGD through 30.4 MGD flow from the aerated grit chamber directly to the deep bed filter and then to the disinfection units.

f) Flows above 30.4 MGD flow from the aerated grit chamber directly to the disinfection units.

The Discharger plans to modify an existing solids storage basin to serve as a one million gallon flow equalization basin. To the extent possible, flows identified in (c) through (e) above will be diverted to the flow equalization basin and later returned to the process for full secondary treatment. The Discharger also plans to implement Plant capital improvements and operational changes to increase the volume of flow that can be processed through secondary treatment.

Flows identified in (b) above that have received secondary treatment and disinfection may be directed to the flow equalization basin, and then returned to the process for further treatment in the fixed film reactor, deep bed filters, and disinfection prior to discharge.

Fully treated effluent may be routed through the storage pond in the event of a chlorine residual spike or during maintenance/cleaning of the dechlorination system sample lines. This uses the natural dechlorination capacity of the storage ponds to ensure that no chlorine is present in the discharge to Miller Creek. The Discharger monitors these flows for compliance with all permit requirements (except chlorine residual) as part of its Monitoring and Reporting Program. The Discharger will demonstrate compliance with the chlorine residual requirement by sampling the discharge from the storage ponds to Miller Creek for chlorine residual whenever such a discharge occurs.

2. **Collection System.** The Discharger's wastewater collection system includes 107 miles of gravity-flow sanitary sewer lines and 35 miles of pressure sewers, which range in diameter from 6 to 30 inches, and 28 lift stations. Several small satellite collection system agencies discharge to the Discharger's collection system; however, these flows are relatively small. The Discharger maintains an ongoing program for inflow/infiltration identification and reduction and sewer rehabilitation.

3. **Discharge Locations and Descriptions.** There are two discharge points (001 and 002) to Miller Creek, a water of the State and the United States, regulated under this Order.

   From November 1 through May 31 (discharge season), treated wastewater from the Plant is discharged to Miller Creek, approximately 1 mile upstream from San Pablo Bay. Under normal flow conditions, Plant effluent is split between Discharge Points 001 and 002, with the majority discharged at Discharge Point 002, which is located approximately 1200 feet downstream of Discharge Point 001. Under high flow conditions, the majority of treated effluent is discharged at Discharge Point 001. Furthermore, at flows less than 6 MGD, the Plant effluent may be routed through the storage reservoirs prior to discharge to Miller Creek.

   During the dry season (June 1 through October 31), when discharge to Miller Creek is prohibited, chlorinated effluent (effluent is dechlorinated in October) is discharged to two unlined storage ponds, with a combined area of 40 acres. The storage ponds store effluent until needed for use in the Discharger's reclamation project. Discharges from the storage ponds to the reclamation project can also occur during other months of the year, outside of the dry season. Effluent remaining in the storage ponds at the end of the dry season may be discharged to Miller Creek via Discharge Point 002 at the beginning of the discharge season (November).

   The Plant effluent flow meter is located immediately upstream from where the flows split, and therefore the effluent flow from the Plant is the sum of the discharge flow rates at Discharge Points 001 and 002. A separate flow meter is located at Discharge Point 002 to measure the flows of the end-of-reclamation season discharges from the storage ponds.

4. **Reclamation Activities.** The Discharger's reclamation system includes two storage ponds, a freshwater marsh/wildlife pond, and irrigated pasture. Effluent from the

storage ponds is used for irrigation of a 200-acre pasture or is used to maintain the freshwater marsh/wildlife pond. Effluent is first sent to the two storage ponds, which are used for the Discharger's reclamation projects. Effluent from the Plant may also be used directly to maintain the freshwater marsh/wildlife pond. The freshwater marsh/wildlife pond is maintained at a water level of less than 1.5 feet and has an overflow zone that is only inundated during winter rains. Prior to 2003, the water level in the marsh/pond was held at 3 feet or more, which resulted in wave erosion of the levee slopes and pond islands. The water level was then lowered to current levels, which resulted in creation of migratory bird habitat and nesting areas. The Las Gallinas Valley Sanitary District reclamation project is further described in USEPA document number EPA832-R-93-005g (September 1993), *Wetlands as a Part of Reuse and Disposal*. Regional Water Board Order No. 92-064 establishes limitations and conditions regarding reclamation uses of treated wastewater in the freshwater marsh/wildlife pond and in the irrigation system.

Discharge from the storage ponds may be used for further treatment and recycling by the Marin Municipal Water District, which operates a Title 22-compliant recycled water facility adjacent to the Plant. The Marin Municipal Water District further treats the Discharger's secondary effluent to produce disinfected tertiary recycled water and is regulated under Regional Water Board Order No. 89-127.

5. **Biosolids Management.** Grit, screenings, and a portion of the skimmed material is placed in the Redwood Sanitary Landfill. Other solids generated in the treatment process are treated by gravity thickening and anaerobic digestion (a primary digester and a secondary digester), and then pumped to three sludge storage lagoons. Solids from the Marin Municipal Water District's water reclamation facility are either pumped back through the Plant or pumped directly to the sludge storage lagoons. The sludge storage lagoons are double lined, with a total capacity of approximately 3.2 million gallons (MG). Biosolids are ultimately disposed of on-site through subsurface injection at the Discharger's 9-acer land disposal site.

6. **Storm Water Discharge.** The Discharger is not required to be covered under the State Water Board's statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit No. CAS000001) because all storm water flows from the Plant and sludge disposal area are captured and directed to the Plant's headworks.

B. Discharge Points and Receiving Water

Locations of the discharge points and the receiving water, Miller Creek, are shown in Table F-2. Miller Creek is located in the Novato River hydrologic area of the San Pablo Bay hydrologic unit. Miller Creek is a tidally influenced perennial creek, with low dry season flows.

Table F-2. Outfall Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Secondary-treated municipal wastewater	38º01'31" N	122º31'01" W	Miller Creek
002	Secondary treated municipal wastewater	38º01'37" N	122º30'48" W	Miller Creek

C. Summary of Previous Requirements and Self-Monitoring Data

Effluent limitations contained in the previous permit for discharges at Discharge Points 001 and 002 to Miller Creek and representative monitoring data from the term of the previous permit are presented in the following tables. The Plant discharged during the month of May only in 2006.

Table F-3. Historic Effluent Limitations and Monitoring Data (Conventional and Non-Conventional Pollutants)

Parameter	Applicable Period	Units[1]	Effluent Limitation			Monitoring Data (from 01/04 – 04/08)		
			Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly	Highest Average Weekly	Highest Daily Discharge
BOD_5[2]	May	mg/L	20	25	30	6.26	10.8	10.8
	November to April	mg/L	30	45	---	12.7	17.9	30
TSS	May	mg/L	15	18	20	8.31	15.6	16.8
	November to April	mg/L	30	45	---	11.8	27.9	46
BOD_5 percent removal	November to May	%	85 – minimum			89 – minimum		
TSS percent removal	November to May	%	85 – minimum			93 – minimum		
Oil and Grease	May	mg/L	5	---	15	<5	---	<5
	November to April	mg/L	10	---	20	<5	---	<5
pH	November to May	s.u.	6.5 – 8.5 at all times			6.2 – minimum 7.9 - maximum		
Settleable Solids	November to May	mg/L-hr	0.1	---	0.2	0.1	---	0.1
Total Chlorine Residual[3]	November to May	mg/L	---	---	0.0	---	---	0.0
Total Ammonia as N	May	mg/L	6.0	---	---	<0.1	---	---
Enterococcus Bacteria	November to May	cfu/100 mL	35[4]	---	276[5]	10	---	2000
Acute Toxicity	November to May	% survival	11-sample median of not less than 90% 11-sample 90th percentile of not less than 70%			11-sample median minimum – 95% 11-sample 90th percentile minimum – 85%		

Footnotes to Table F-3:
"<" Analyte not detected in effluent; value given is the MDL as reported by the analytical laboratorty.

[1] Unit Abbreviations:
mg/L = milligrams per liter
s.u. = standard units
mg/L-hr = milligrams per liter per hour
cfu/100 mL = colony forming units per 100 milliliters

[2] Alternately, the Discharger may meet effluent limitations for $CBOD_5$ as follows.

May – Average Monthly (15 mg/L), Average Weekly (18 mg/L), Maximum Daily (20 mg/L)
November to April - Average Monthly (25 mg/L), Average Weekly (38 mg/L), Maximum Daily (50 mg/L)

[3] The effluent shall not contain a chlorine residual concentration greater than 0.0 mg/L at any time, except when effluent is discharged to the reclamation storage ponds.

[4] Represented as a 30-day geometric mean.

[5] Represented as a single sample maximum.

Table F-4. Historic Effluent Limitations and Monitoring Data (Toxic Pollutants)

Toxic Pollutants	Units[1]	Final Limitations		Interim Limitations		Monitoring Data (From 01/04 – 04/08)
		Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Highest Daily Concentration
Copper	µg/L	---	---	---	17	11
Chromium VI	µg/L	8.5	16	---	---	3
Lead	µg/L	4.6	7	---	---	0.74
Mercury	µg/L	---	---	0.087	---	0.037
Nickel	µg/L	11	18	---	---	8.5
Cyanide	µg/L	---	---	---	19	10
Bis(2-ethylhexyl)phthalate	µg/L	---	---	---	16	4.2
4,4' - DDE	µg/L	---	---	---	0.05	<0.002
Dieldrin	µg/L	---	---	---	0.01	<0.002
Heptachlor Epoxide	µg/L	---	---	---	0.01	<0.002

Footnotes to Table F-4:
"<" Analyte not detected in effluent; value given is the MDL as reported by the analytical laboratory.

[1] Unit Abbreviations:
µg/L = micrograms per liter

D. Compliance Summary

1. **Compliance with Previous Numeric Effluent Limitations.** Exceedances of numeric effluent limitations were observed during the previous permit term for total residual chlorine, enterococcus bacteria, and pH. The exceedances are outlined below.

Table F-5. Numeric Effluent Limitation Exceedances

Date of Violation	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
12/31/2005	Chlorine Total Residual - Instantaneous Maximum	mg/L	0.0	9.7
3/21/2006	Chlorine Total Residual - Instantaneous Maximum	mg/L	0.0	3.9
2/2/2004	Enterococci Bacteria - Single Sample Maximum	cfu/100 mL	276	680
2/25/2004	Enterococci Bacteria - Single Sample Maximum	cfu/100 mL	276	2000
12/27/2004	Enterococci Bacteria - Single Sample Maximum	cfu/100 mL	276	1200
12/28/2005	pH - Minimum	s.u.	6.5	6.2

In February 2004, Regional Water Board Order No. R2-2004-0073 imposed Mandatory Minimum Penalties (MMPs) for the violations that occurred between February 1, 2000, and February 29, 2004. The State Water Board's MMP dated July 24, 2008, fined the Discharger $6,000 for the violations that occurred after 2004.

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

Table F-6. Compliance with Previous Order Provisions

Provision Number	Requirement	Status of Completion
E.3	Cyanide Compliance Schedule and Cyanide SSO Study	Compliance attainability report submitted 12/1/2005 Cyanide SSO study annual reports submitted 2/28/04, and annually thereafter
E.4	Bis(2-ethylhexyl)phthalate Laboratory Analysis Study	Final report submitted 10/20/05
E.11	Bacteriological Study	Receiving Water User Survey Confirmation Study Report submitted 12/28/04
E.12	Collection System Improvements	Report submitted 4/1/05, and updated 2/28/05 and annually thereafter
E.13	Wastewater Treatment Facility Improvements	Report submitted 4/1/2004, and updated 2/28/05 and annually thereafter

E. Planned Changes

The Discharger plans to modify an existing solids storage basin to serve as a one million gallon flow equalization basin. The Discharger also plans to implement Plant capital improvements and operational changes to increase the volume of flow that can be processed through secondary treatment.

The Discharger has planned to install a 50-foot-long sheet piling barrier in the freshwater marsh/wildlife pond to improve circulation and prevent short circuiting of pond flows; thus improving water quality in the pond.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plan.** *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 Office of Administrative Law (OAL), where required. Requirements of this Order implement the Basin Plan. The receiving water for this discharge, Miller Creek, which is tributary to San Pablo Bay, is specifically identified by the Basin Plan.

   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 Miller Creek, the maximum total dissolved solid concentrations observed in Miller Creek was above 18,000 mg/L, thereby meeting an exception to Resolution No. 88-63. The MUN designation is therefore not applicable to Miller Creek.

   The Basin Plan beneficial uses of Miller Creek are listed in Table F-7 below.

Table F-7. Basin Plan Beneficial Uses and Potential Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Miller Creek	Cold Freshwater Habitat (COLD) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Water Contact Recreation (REC1) Non-contact Water Recreation (REC2)

Discharge Point	Receiving Water Name	Beneficial Use(s)
		Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD)

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

2. **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.

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

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

5. **Antidegradation Policy.** NPDES regulations at 40 CFR 131.12 require that State 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.

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

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

In November 2006, USEPA approved a revised list of impaired water bodies (the 303(d) list) pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that WQSs will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt total maximum daily loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the WQSs for the impaired waterbodies. The SIP requires that final effluent limitations for all 303(d)-listed pollutants be consistent with the TMDLs and associated wasteload allocations.

Miller Creek is listed as impaired by diazinon, a pesticide. USEPA approved a pesticide toxicity TMDL "*Diazinon and Pesticide-Related Toxicity in San Francisco Bay Area Urban Creeks*" including Miller Creek. The TMDL does not list the facility as a source of pesticide toxicity; therefore, there is no specific wasteload allocation or other implementation requirements.

San Pablo Bay is listed as impaired by chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium. USEPA approved a mercury TMDL for San Pablo Bay on February 12, 2008. Regional Water Board Order No. R2-2007-0077 implements the mercury TMDL; therefore, mercury is not addressed further in this Order.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the NPDES regulations: 40 CFR 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 may be established (1) using USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) on an indicator parameter for the pollutant of concern; or (3) using a calculated numeric water quality criterion, supplemented with other relevant information provided in 40 CFR 122.44(d)(1)(vi).

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

A. Discharge Prohibitions

1. **Prohibitions III.A (The discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited):** This prohibition is in the previous permit and is based on CWC section 13260, which requires filing a Report of Waste Discharge before discharges can occur. Discharges not described in the Report of Waste Discharge, and subsequently in this Order, are prohibited.

2. **Prohibition III.B (The bypass of untreated or partially treated wastewater to waters of the U.S. is prohibited, except as provided for in Section I.G.2 of Attachment D):** This prohibition grants bypass of peak wet weather flows above 8 MGD when recombined with secondary treatment flows and discharged in accordance with the conditions at 40 CFR 122.41(m)(4)(i)(A) – (C) (see Federal Standard Provisions, section G, Attachment D) and is retained from the previous Order.

Background

During significant storm events, high influent flows can overwhelm certain parts of the wastewater treatment process and may cause damage or failure of the system. Operators of wastewater treatment plants must manage these high flows to both ensure the continued operation of the treatment process and to prevent backups and overflows of raw wastewater in basements or on city streets. USEPA recognizes that peak wet weather flow diversions around secondary treatment units (blending) at treatment plants serving separate sanitary sewer conveyance systems may be necessary in some circumstances. In December 2005, USEPA invited public comment on a proposed Peak Wet Weather Policy that interprets 40 CFR 122.41(m) to apply to wet weather diversions recombined with flow from secondary treatment, and provides guidance regarding when the Regional Water Board may approve blending in an NPDES permit. The draft policy requires that dischargers must meet all the requirements of NPDES permits and encourages municipalities to make investments in ongoing maintenance and capital improvements to improve their system's long-term performance. While USPEA has not formally adopted the draft policy, the proposal is a useful tool for Regional Water Board consideration.

Criteria of 40 CFR 122.41(m)(4)(i)(A) – (C)

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

On June 2, 2008, the Discharger submitted a No Feasible Alternatives Analysis that addresses measures it has taken and plans to take to reduce and eliminate bypasses during wet weather events so that such bypasses can be approved under 40 CFR 122.41(m)(4). The Discharger maintains an aggressive I&I reduction program to reduce peak wet weather flows to the treatment plant. During the term of the previous permit, the Discharger has completed the Headworks, Electrical, and SCADA Improvements Project, and has analyzed plant process configuration and capacities to identify near-term operational strategies and long-term plant modifications that would maximize the plant's ability to provide full secondary treatment of peak wet weather flows. Short-term changes that have been implemented included the use of the existing main clarifier as a flow equalization basin and the use of the intermediate clarifiers as parallel primary clarifiers.

Proposed long-term modifications would involve changes to Plant piping to direct a greater flow through the secondary process; reconfiguration of the biofilter and fixed-film reactor to allow operations in parallel; provision for chemical feed at the existing secondary clarifier; reconfiguration of the filters to provide alternative secondary clarification; and additional flow meter, control, and SCADA improvements. These proposed long-term modifications, which are still in the design phase, would increase full secondary treatment flow to 17.2 MGD during peak wet weather conditions. At the same time, the District's ongoing I&I reduction program is expected to reduce peak wet weather flows to the treatment plant.

The Discharger has satisfied the criteria of 40 CFR 122.41(m)(4)(i)(A) – (C). Bypasses are necessary to prevent severe property damage when flows exceed the capacity of the secondary treatment process. The Discharger has analyzed alternatives to bypassing and has determined that no feasible alternatives to bypassing exist at this time. The Discharger has submitted notice to the Regional Water Board as required under Federal Standard Provision – Permit Compliance I.G.5. In addition, this prohibition requires compliance with the requirements of Provision VI.C.4.e of the Order to minimize blending events.

3. **Prohibition III. C (Discharge to Miller Creek is prohibited from June 1 through October 31):** This prohibition is based on the Basin Plan and the previous permit. The Basin Plan prohibits discharges not receiving a minimum 10:1 initial dilution or to dead-end sloughs (Chapter 4, Discharge Prohibition No. 1). Miller Creek is a tidally influenced perennial stream, where initial dilution does not always achieve a 10:1 ratio because during the dry season extremely low upstream flows occur in the creek. Therefore, this Order prohibits discharges to Miller Creek during this period. An exception to discharge Prohibition 1 is granted to the Discharger for discharges from the Plant during the wet season period of November through May, as explained in IV.B, below.

   The Executive Officer may authorize an exception to the prohibition during June and October under emergency situations. When making an emergency discharge request, the Discharger will need to demonstrate that the facility is running out of its storage capacity for treated wastewater. This exception is continued from the previous permit and is intended to protect the treatment facility from being flooded or

occurrence of uncontrolled spills. However, this permit allows that if an emergency discharge is due to heavy storms, the Discharger may notify the Regional Water Board case manager when a discharge is unavoidable, and discharge treated wastewater at its discretion, before an approval from the Executive Office can be made due to time constraints.

4. **Prohibition III. E (Average dry weather effluent flows greater than 2.92 MGD is prohibited):** This prohibition is based on the previous permit. Exceedance of the treatment plant's average dry weather flow design capacity may result in lowering the reliability of achieving compliance with water quality requirements.

5. **Discharge Prohibition III.F (No sanitary sewer overflows (SSOs) 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. Municipal wastewater treatment plants must achieve secondary treatment, at a minimum, and any more stringent limitations that are necessary to achieve WQOs (33U.S.C. §1311(b)(1)(B) and (C)). Thus, CWA prohibits an SSO that results in the discharge of raw sewage, or sewage not meeting secondary treatment standards, to surface waters.

B. Shallow Water Discharge and Basin Plan Prohibition 1

The Basin Plan prohibits discharges not receiving a minimum 10:1 initial dilution or to dead-end sloughs (Chapter 4, Discharge Prohibition No. 1). In accordance with the Basin Plan, the Regional Water Board grants an exception to the discharge prohibition for discharges to Miller Creek from November through May, as described below.

The Basin Plan states that exceptions to Prohibition 1 will be considered for discharges where:

- An inordinate burden would be placed on the discharger relative to the 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.

The Basin Plan further states:

> Significant factors to be considered by the Regional Water Board in reviewing requests for exceptions will be the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequences of such discharges.

The Discharger maintains and implements a reclamation project. The reclamation project includes a 20-acre wildlife marsh pond, 40 acres of storage ponds, 200 acres of irrigated pasture, and 3-1/2 miles of public trails. This project is described in the USEPA's September 1993 publication *Wetlands as a Part of Reuse and Disposal - Las Gallinas Valley Sanitary District* (EPA832-R- 93-005g). The reclamation system is a valued community resource used by the public for birdwatching, hiking, and jogging. The biological diversity of the project, and in particular the marsh pond, is documented in semi-annual biological monitoring reports the Discharger submits as part of its monitoring and reporting program (Attachment E). The following is a typical observation regarding the diversity of bird life at the reclamation project:

> A total of 290 birds of 23 species were observed during the January field visit. The species, number of individuals, behavior, habitat used, and the guild for each species are included in Table 3. The most numerous species was Canada goose followed by northern shovelers and violet green swallows. There were 6 species of ducks and 7 species of shorebirds and other water birds. This avian monitoring is a snapshot in time. The area is used for feeding, hunting, roosting, preening, and nesting. Two broods of mallard ducks were observed. The species observed depends on multiple factors including: weather, time of day, human disturbance, tides in the bay, etc. The Marin Audubon Society has identified many additional bird species in the marsh pond and surrounding habitats. (January 2008 Biological Monitoring Report)

In addition to the Discharger's on-site reclamation project, the Discharger partners with the Marin Municipal Water District to produce Title-22 recycled water. The Marin Municipal Water District distributes the water throughout the northern San Rafael area for landscape irrigation and other approved uses. Within the Marin Municipal Water District's service area, most of the public and commercial properties, cemeteries and common areas of condominium developments, as well as the Caltrans right of ways along Highway 101, are irrigated with recycled water.

The Discharger is also an active member of the North Bay Water Reuse Authority, through which it is exploring additional opportunities for water recycling in the North Bay region. To support the reclamation and water recycling activities, and consistent with NPDES permit requirements, the Discharger has zero discharge to Miller Creek between the months of June through October. This no-discharge period is extended to include the month of May when conditions permit.

Therefore, the Regional Water Board finds that the wastewater reclamation program implemented by the Discharger qualifies the facility for an exception to Basin Plan Prohibition 1. This Order continues to grant the discharge prohibition exception from November 1 through May 31 provided that the Discharger continues its water reclamation efforts and continues to improve treatment system reliability and redundancy. This Order also requires a level of treatment, as discussed in section IV.C, below, greater than secondary treatment requirements for discharges in May (dry weather), thereby demonstrating a level of protection equivalent to strict adherence to the discharge prohibition. To address the Discharger's treatment

reliability, Provision VI.C.4.d of this Order requires the Discharger to conduct routine analyses of its collection and treatment system with attention toward preventing discharges of inadequately treated wastewater.

C. Technology-Based Effluent Limitations

1. Scope and Authority

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

Table F-8. 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 to Table F-8:

[1] In addition, 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 the limitations for BOD_5.

2. Applicable Effluent Limitations

This Order contains effluent limitations for conventional and non-conventional pollutants for discharges at Discharge Points 001 and 002, including effluent limits for 5-day biochemical oxygen demand (BOD_5) or carbonaceous BOD (CBOD), total suspended solids (TSS), pH, oil and grease, total chlorine residual, and total ammonia. The effluent limits for BOD or CBOD, TSS, and oil and grease are more stringent for May discharge than those for wet season discharge during November 1 through April 30 (see Order section IV.A for these effluent limits). The basis for these effluent limits is detailed below.

a. BOD_5 and TSS. The wet weather and May effluent limitations for BOD_5 and TSS, including the 85% removal requirement, are retained from the previous permit. The effluent limitations for BOD_5 and TSS for discharge during the month of May are more stringent than required by secondary treatment standards, but are required because Miller Creek is very low in flow during dryer months. These lower limits were originally established through the application of Best Professional Judgment (BPJ), where the effluent limitations reflect actual plant performance with full secondary treatment of influent flows to the Plant. Self-monitoring data show the Discharger has been able to consistently comply with

these BOD_5 and TSS effluent limitations for May. This supports the BPJ effluent limits for May discharges.

The alternate $CBOD_5$ effluent limitations for wet season discharge are revised to be consistent with federal regulations in 40 CFR 133 for secondary treatment. The previous permit's $CBOD_5$ effluent limits were more stringent and included a daily maximum limit. 40 CFR 122.45(d) specifies that discharge limitations for publicly owned treatment works are to be stated as average weekly limitations and average monthly limitations, unless impracticable. Expressing effluent limitations as maximum daily limitations results in more stringent limits, as effluent variability is not averaged out over a period of a week or a month.

b. Oil and Grease. Limitations for oil and grease during wet weather are based on Basin Plan Table 4-2. Limitations for oil and grease in May, which are more stringent than required by Table 4-2, are based on BPJ and the Plant's actual performance. These limits are unchanged from the previous permit. Self-monitoring data show that the Discharger has been able to consistently comply with these effluent limitations for oil and grease during May.

c. pH. Effluent limitations for pH are based on Basin Plan Table 4-2 for shallow water discharges and are unchanged from the previous permit.

d. Total Chlorine Residual. The effluent limitation for total chlorine residual is based on Basin Plan Table 4-2. 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.

e. **Total Ammonia.** The monthly average limit for the month of May is retained from the previous permit. In addition, this Order includes new performance-based ammonia effluent limits for the wet season, November through April. The new performance-based effluent limits are intended to ensure that the Discharger maintains its Plant's existing ammonia removal performance and that current ammonia conditions are maintained in the receiving water.

The new wet season performance-based effluent limits are based on effluent data collected during January 2004 through April 2009 (no data during May-September were included). Regional Water Board staff transformed the effluent data to fit a lognormal distribution (daily maximum concentrations were taken the 1/3 power, monthly average effluent data were taken the square root). The 99.87^{th} percentile (three standard deviations above the mean) of the daily maximum effluent concentrations is 18 mg/L; this value is established as the daily maximum effluent limit. The 99^{th} percentile of the monthly average effluent concentrations is 10 mg/L; this value is established as the monthly average effluent limit. Daily effluent concentrations during January 2004 through April 2009 ranged from <0.1 mg/L to 14.7 mg/L. Monthly average concentrations

during this period ranged from <0.1 mg/L to 9.6 mg/L. Therefore, the Discharger is expected to be able to comply with these new effluent limits.

f. Enterococcus bacteria. The 30-day geometric mean effluent limitation for enterococcus bacteria is unchanged from the previous permit; however, the single sample maximum limit of 276 colonies per 100 mL is not retained to be consistent with other 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 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.

g. Effluent Limits Not Retained. This Order does not retain the previous permit's technology-based effluent limitations for settleable matter because Basin Plan Table 4-2 no longer requires them for publicly owned treatment works.

D. Water Quality Based Effluent Limits (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 USEPA approved prior to May 1, 2001, or Basin Plan provisions USEPA approved 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 WQS 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 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 Part 122.45(d) state: "For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works."

(2) **SIP.** The SIP (page 8, Section 1.4) requires WQBELs to be expressed as MDELs and average monthly effluent limitations (AMELs).

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 WQOs

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

a. **Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c., below). The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part

"[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

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

   Human health criteria are further identified as "water and organisms" and "organisms only." The CTR criteria applicable to the "organisms only" were used for the RPA.

c. **NTR.** The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the San Joaquin-Sacramento River Delta. These criteria apply to Miller Creek and San Pablo Bay, the receiving waters for this discharge.

d. Technical Support Document 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, when necessary, establish WQBELs the Regional Water Board 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 State Water Resources Control Board's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the SIP, 2005).

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

of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

The primary receiving waters for this discharge are Miller Creek and San Pablo Bay. Salinity data from the San Pablo Bay RMP monitoring station collected from March 1993 to August 2001 indicate that the salinity was less than 1 ppt in 2 percent of the samples and greater than 10 ppt in 63 percent of the samples. The waters of San Pablo Bay are therefore classified as estuarine. Salinity data is not available for Miller Creek. Hardness data (ranged from 64-4500 mg/L) and total dissolved solids data (96-18530 mg/L) during 2005-2009 suggest that Miller Creek is also estuarine. Therefore, the requirements of this Order are based on the more stringent of the fresh and saltwater objectives.

f. **Receiving Water Hardness.** All available ambient hardness values are used to calculate freshwater WQOs that are hardness dependent. In determining the WQOs for this Order, Regional Water Board staff used a hardness of 137 mg/L, which was calculated as the adjusted geometric mean of 51 samples collected from receiving water monitoring locations CR2 and RW2 in Miller Creek from January 2003 to April 2008. The original data set of 70 samples was censored to eliminate samples with hardness values greater than 400 mg/L.

g. **Site-Specific Translators.** NPDES regulations at 40 CFR 122.45(c) require 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 translators that are used for NPDES permits; 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 non-filterable forms. Site-specific translators can be developed to account for site-specific conditions, thereby preventing exceedingly stringent or under protective WQOs.

Regional Water Board staff developed site-specific translators for copper, nickel, and zinc using data for dissolved and total metals the Discharger collected in Miller Creek. The following table shows the translators used to perform this RPA. In determining the need for and calculating WQBELs for all other metals, Regional Water Board staff used CTR default translators from 40 CFR 131.38(b)(2), Table 2.

Table F-9. Site-Specific Translators

Pollutant	Site-Specific Translators	
	Acute	Chronic
Copper	0.83	0.56
Nickel	0.82	0.56
Zinc	0.8	0.44

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 SIP Section 1.3, Regional Water Board staff analyzed the effluent data to determine if the discharge from demonstrates Reasonable Potential. The Reasonable Potential Analysis (RPA) compares the effluent data with numeric and narrative WQOs in the Basin Plan, NTR, and CTR.

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

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

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

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

b. **Effluent Data**

The 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 Regional Water Board's August 6, 2001, Letter) 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 Las Gallinas Valley Sanitary District facility to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Discharger from January 2004 through April 2008 for most inorganic pollutants, and from March 2004 through March 2008 for most 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 RMP station located in the San Pablo Bay is a far field background station and has been monitored for most of the inorganic (CTR constituent numbers 1–15) and some of the organic (CTR constituent numbers 16–126) toxic pollutants, and these data were used as background data in performing the RPA for this discharge.

Not all the constituents listed in the CTR have been analyzed by the RMP. These data gaps are addressed by the Regional Water Board's August 6, 2001, Letter. The August 6, 2001, Letter 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. This study included the Yerba Buena 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 through 2001 for the San Pablo RMP station for inorganics and additional data from the BACWA receiving water study for the Yerba Buena Island RMP station.

d. **RPA Determination for Priority Pollutants**

The MECs, most stringent applicable WQC, and background concentrations used in the RPA are presented in the following table, along with the RPA results (yes or no) for each pollutant analyzed. Reasonable Potential was not determined for all pollutants, as there are not applicable WQC for all pollutants, and monitoring data were not available for others. Copper, mercury, selenium, cyanide, and dioxin-TEQ exhibit reasonable potential by Trigger 1; lead and nickel exhibit reasonable potential by Trigger 2.

Table F-10. RPA Summary

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	**0.5**	4300	1.8	No
2	Arsenic	**1.5**	36	4.6	No
3	Beryllium	**0.1**	No Criteria	0.215	Ud
4	Cadmium	**0.1**	1.5	0.230	No
5a	Chromium (III)	Not Available	268	40.7	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]
5b	Chromium (VI)	**3**	11	Not Available	No
6	**Copper**	**11**	5.5	14.3	**Yes**
7	**Lead**	**0.74**	4.7	6.46	**Yes**
8	**Mercury (303d listed)**	**0.037**	0.025	0.088	**Yes**
9	**Nickel (303d listed)**	**8.5**	15	30.35	**Yes**
10	**Selenium (303d listed)**	**5**	5	0.33	**Yes**
11	Silver	**0.9**	2.2	0.059	No
12	Thallium	**0.04**	6.3	0.21	No
13	Zinc	**81**	113	35	No
14	**Cyanide**	**10**	2.9	< 0.4	**Yes**
15	Asbestos	Not Available	No Criteria	Not Available	Ud
16	2,3,7,8-TCDD (303d listed)	< 1.92E-07	1.4E-08	8.00E-09	No
	Dioxin TEQ (303d listed)	**7.86E-08**	1.4E-08	7.10E-08	**Yes**
17	Acrolein	< 0.5	780	< 0.5	No
18	Acrylonitrile	< 0.33	0.66	0.03	No
19	Benzene	**0.09**	71	< 0.05	No
20	Bromoform	**3.2**	360	< 0.5	No
21	Carbon Tetrachloride	< 0.04	4.4	0.06	No
22	Chlorobenzene	< 0.03	21000	< 0.5	No
23	Chlorodibromomethane	**20**	34	< 0.05	No
24	Chloroethane	< 0.03	No Criteria	< 0.5	Ud
25	2-Chloroethylvinyl ether	< 0.1	No Criteria	< 0.5	Ud
26	Chloroform	**40**	No Criteria	< 0.5	Ud
27	Dichlorobromomethane	**29**	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	< 0.06	3.2	< 0.5	No
31	1,2-Dichloropropane	< 0.03	39	< 0.05	No
32	1,3-Dichloropropylene	Not Available	1700	Not Available	No
33	Ethylbenzene	< 0.04	29000	< 0.5	No
34	Methyl Bromide	< 0.05	4000	< 0.5	No
35	Methyl Chloride	**0.06**	No Criteria	< 0.5	Ud
36	Methylene Chloride	**0.2**	1600	22	No
37	1,1,2,2-Tetrachloroethane	< 0.04	11	< 0.05	No
38	Tetrachloroethylene	< 0.04	8.9	< 0.5	No
39	Toluene	< 0.06	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	< 0.05	81	< 0.5	No
44	Vinyl Chloride	< 0.05	525	< 0.5	No
45	2-Chlorophenol	< 0.6	400	< 1.2	No
46	2,4-Dichlorophenol	< 0.7	790	< 1.3	No
47	2,4-Dimethylphenol	< 0.8	2300	< 1.3	No
48	2-Methyl- 4,6-Dinitrophenol	< 0.6	765	< 1.2	No
49	2,4-Dinitrophenol	< 0.6	14000	< 0.7	No
50	2-Nitrophenol	< 0.6	No Criteria	< 1.3	Ud
51	4-Nitrophenol	< 0.6	No Criteria	< 1.6	Ud
52	3-Methyl 4-Chlorophenol	< 0.5	No Criteria	< 1.1	Ud
53	Pentachlorophenol	< 0.6	7.9	< 1	No
54	Phenol	< 0.6	4600000	< 1.3	No
55	2,4,6-Trichlorophenol	< 0.6	6.5	< 1.3	No
56	Acenaphthene	< 0.029	2700	0.007	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]
57	Acenaphthylene	< 0.019	No Criteria	0.00069	Ud
58	Anthracene	< 0.02	110000	0.00230	No
59	Benzidine	< 1	0.00054	< 0.0015	No
60	Benzo(a)Anthracene	< 0.019	0.049	0.0064	No
61	Benzo(a)Pyrene	< 0.019	0.049	0.00940	No
62	Benzo(b)Fluoranthene	< 0.02	0.049	0.01838	No
63	Benzo(ghi)Perylene	< 0.02	No Criteria	0.0093	Ud
64	Benzo(k)Fluoranthene	< 0.02	0.049	0.00510	No
65	Bis(2-Chloroethoxy)Methane	< 0.7	No Criteria	< 0.3	Ud
66	Bis(2-Chloroethyl)Ether	< 0.7	1.4	< 0.3	No
67	Bis(2-Chloroisopropyl)Ether	< 0.6	170000	Not Available	No
68	Bis(2-Ethylhexyl)Phthalate	**4.2**	5.9	0.091	No
69	4-Bromophenyl Phenyl Ether	< 0.4	No Criteria	< 0.23	Ud
70	Butylbenzyl Phthalate	< 0.7	5200	0.0056	No
71	2-Chloronaphthalene	< 0.5	4300	< 0.3	No
72	4-Chlorophenyl Phenyl Ether	< 0.5	No Criteria	< 0.3	Ud
73	Chrysene	< 0.02	0.049	0.0086	No
74	Dibenzo(a,h)Anthracene	< 0.02	0.049	0.0026	No
75	1,2-Dichlorobenzene	**0.27**	17000	< 0.8	No
76	1,3-Dichlorobenzene	**0.27**	2600	< 0.8	No
77	1,4-Dichlorobenzene	**0.31**	2600	< 0.8	No
78	3,3 Dichlorobenzidine	< 0.3	0.077	< 0.001	No
79	Diethyl Phthalate	**1.7**	120000	< 0.24	No
80	Dimethyl Phthalate	< 0.6	2900000	< 0.24	No
81	Di-n-Butyl Phthalate	< 0.6	12000	0.016	No
82	2,4-Dinitrotoluene	< 0.6	9.1	< 0.27	No
83	2,6-Dinitrotoluene	< 0.5	No Criteria	< 0.29	Ud
84	Di-n-Octyl Phthalate	< 0.7	No Criteria	< 0.38	Ud
85	1,2-Diphenylhydrazine	< 0.6	0.54	0.0037	No
86	Fluoranthene	< 0.02	370	0.0218	No
87	Fluorene	< 0.02	14000	0.01	No
88	Hexachlorobenzene	< 0.4	0.00077	0.00007	No
89	Hexachlorobutadiene	< 0.7	50	< 0.3	No
90	Hexachlorocyclopentadiene	< 0.4	17000	< 0.31	No
91	Hexachloroethane	< 0.6	8.9	< 0.2	No
92	Indeno(1,2,3-cd)Pyrene	< 0.02	0.049	0.0120	No
93	Isophorone	< 0.5	600	< 0.3	No
94	Naphthalene	**0.03**	No Criteria	0.0016	Ud
95	Nitrobenzene	< 0.7	1900	< 0.25	No
96	N-Nitrosodimethylamine	< 0.6	8.1	< 0.3	No
97	N-Nitrosodi-n-Propylamine	< 0.6	1.4	< 0.001	No
98	N-Nitrosodiphenylamine	< 0.6	16	< 0.001	No
99	Phenanthrene	< 0.02	No Criteria	0.0078	Ud
100	Pyrene	< 0.02	11000	0.0296	No
101	1,2,4-Trichlorobenzene	< 0.05	No Criteria	< 0.3	Ud
102	Aldrin	< 0.002	0.00014	1.4E-07	No
103	Alpha-BHC	< 0.002	0.013	0.00080	No
104	Beta-BHC	< 0.002	0.046	0.000635	No
105	Gamma-BHC	< 0.002	0.063	0.00079	No
106	Delta-BHC	< 0.002	No Criteria	0.00015	Ud
107	Chlordane (303d listed)	< 0.005	0.00059	0.00034	No
108	4,4'-DDT (303d listed)	< 0.002	0.00059	0.000075	No
109	4,4'-DDE (linked to DDT)	< 0.002	0.00059	0.000693	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]
110	4,4'-DDD	< 0.002	0.00084	0.000313	No
111	Dieldrin (303d listed)	< 0.002	0.00014	0.000237	No
112	Alpha-Endosulfan	< 0.002	0.0087	0.000035	No
113	beta-Endolsulfan	< 0.002	0.0087	0.000059	No
114	Endosulfan Sulfate	< 0.002	240	0.000143	No
115	Endrin	< 0.002	0.0023	0.000073	No
116	Endrin Aldehyde	< 0.002	0.81	Not Available	No
117	Heptachlor	< 0.003	0.00021	0.00003	No
118	Heptachlor Epoxide	< 0.002	0.00011	0.000121	No
119-125	PCBs sum (303d listed)	< 0.02	0.00017	0.00334	No
126	Toxaphene	< 0.15	0.0002	Not Available	No
---	Tributylin	Not Available	0.0074	0.002	No
---	Total PAHs	< 0.03	15	0.144	No

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

Ammonia is a toxic pollutant, but not a priority pollutant as defined by the CTR; therefore, Regional Water Board staff used the procedures outlined in the *Technical Support Document for Toxics Control* (TSD) (EPA/505/2-90-001, March 1991) to determine if ammonia in the discharge has a reasonable potential to cause water quality objectives to be exceeded in the receiving water.

(1) TSD RPA Procedure

The TSD allows using measured receiving water concentrations (RWC) or projected RWCs from effluent data to perform on RPA. The following summarizes the steps to determine reasonable potential for excursions above ambient criteria using effluent data:

Step 1. Determine the number of total observations (n) for a set of effluent data and determine the highest value from that data set (the maximum effluent concentration or MEC).

Step 2. Determine the coefficient of variation (CV) from the data set. For a data set where n<10, the CV is estimated to equal 0.6. For a data set where n>10, the CV is calculated as the standard deviation divided by the mean.

Step 3. Determine an appropriate ratio for projecting a selected upper bound concentration (e.g., the 99th or 95th percentile) assuming a lognormal distribution.

To do this, the percentile represented by the MEC in a data set of "*n*" samples, p_n, needs to be determined based on the desired confidence interval, e.g., 95% or 99%.

p_n = (1 - confidence interval)$^{1/n}$

Then concentrations based on two percentile values, $C_{upper\ bound}$, and C_{Pn} need to be calculated using the following equation.

$$C_p = \exp(Z_p\sigma - 0.5\sigma^2)$$

where σ = ln(CV^2+1), *p* is the percentile (upper bound or p_n), and Z_p is the standard normal distribution value for the percentile *p*.

The ratio, *R,* is then determined to be

$$R = \frac{C_{upper\ bound}}{C_{Pn}}$$

Step 4. Multiply the MEC by the ratio, R, determined by Step 3. Use this value with the appropriate dilution to project the receiving water concentration (RWC) (this analysis assumes no dilution or D=1).

RWC = MEC $\times$ R / dilution ratio

Step 5. Compare the projected RWC to the applicable WQC (CCC, CMC, human health criteria, etc). If a RWC is greater than or equal to a criterion, then there is reasonable potential.

(2) TSD-based RPA for Ammonia

i. *Ammonia WQOs.* The Basin Plan contains WQOs for un-ionized ammonia of 0.025 mg/L as an annual median and 0.16 mg/L as a maximum for San Pablo Bay.

ii. *Ammonia Data Translation*. Effluent and receiving water monitoring data are available for total ammonia, not un-ionized ammonia, because (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 water. Regional Water Board staff translated total ammonia concentrations into un-ionized ammonia concentrations (as nitrogen) using the following equations [Ambient Water Quality Criteria for Ammonia (saltwater) – 1989, USEPA Publication 440/5-88-004, USEPA, 1989]:

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

Where:

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

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

Where:
pK = 0.09018 + 2729.92/ T
T = temperature in Kelvin

For this effluent data calculation, no salinity data were available and staff assumed that the effluent is fresh; therefore, staff used the equation for waters of salinity <1 ppt.

iii. *Ammonia Dilution.* For purposes of this discharge, no dilution was assumed for ammonia, i.e., D = 1; therefore, the RWC is the same as the projected upper bound concentration, i.e., RWC=MEC×R. (See Step 4 under TSD RPA Procedure above).

iv. *Two Approaches.* According to the TSD, the RPA can be performed based on the projected RWC using effluent data (the steps summarized above) or measured receiving water concentrations. Both values may be compared directly with WQOs.

(a) RPA Based on Effluent Data
Regional Water Board staff used effluent monitoring data for total ammonia from January 1, 2004, through April 30, 2009. Un-ionized ammonia concentrations were calculated using the pH and temperature data collected for the same samples. There were 150 data points (n=150). The MEC was 0.10 mg/L un-ionized ammonia. The confidence interval was set at 95%. The percentile represented by the MEC is calculated to be:

$p_n = (1-0.95)^{1/150} = 0.98$ or 98^{th} percentile

For this analysis, $C_{upper\ bound}$ is set at the 99^{th} percentile.
C_{Pn} or C_{98th} = 3.37
$C_{upper\ bound}$ or C_{99th}= 4.10
R = $C_{upper\ bound}/C_{Pn}$ = 4.10/3.37=1.22

With no dilution, D = 1
RWC = MEC × R/D = 0.10 × 1.22/1.0 = 0.12 mg/L

This value is less than the Basin Plan un-ionized ammonia acute objective of 0.16 mg/L, indicating no reasonable potential to exceed

this objective. One effluent concentration of 24.5 mg/L (as total ammonia) was not included in the analysis because the Discharger claimed that this concentration was not representative of the Plant's normal performance; it occurred during a treatment unit malfunction.

The median of the effluent data is appropriate for comparing with the chronic objective, which is expressed as an annual median. Regional Water Board staff calculated the 50th percentile un-ionized ammonia concentration from the effluent data and compared this value with the annual median objective. No projection is needed because the observed 50th percentile is generally very close to the population 50th percentile. The 50th percentile value is 0.008 mg/L, which is less than the annual median objective of 0.025 mg/L.

Therefore, there is no reasonable potential based on the effluent data.

(b) RPA Based on Receiving Water

The Discharger collected receiving water data, including pH, salinity, temperature, total ammonia, both upstream and downstream of Discharge Points 001 and 002. The Discharger also sampled the same parameters in 2008 at several other locations to determine the impact of the discharge on the receiving water.

The total ammonia concentrations were translated into un-ionized ammonia using pH, temperature, and salinity collected on the same day. The maximum receiving water concentration was used to compare with the acute objective, and the 50th percentile value of all receiving water data was used to compare with the annual median objective.

The maximum RWC as un-ionized ammonia was 0.07 mg/L. This occurred on April 29, 2008, at Station C-2. This un-ionized ammonia value is less than the acute objective of 0.16 mg/L.

The 50th percentile of all data was 0.003 mg/L, which is less than the annual median objective of 0.025 mg/L. All data below detection limits were included using the half detection limits (if available) to determine the 50th percentile.

Therefore, there is no reasonable potential based on the receiving water data.

f. **RPA for Temperature.** The Basin Plan lists Miller Creek as supporting the cold water habitat beneficial use; therefore, specific temperature objectives apply. Regional Water Board staff analyzed whether there is any reasonable potential that Miller Creek would exceed the Basin Plan and Thermal Plan temperature objectives.

(1) Temperature Objectives

The Basin Plan requires that the temperature of any cold freshwater habitat not be increased by more than 5°F above natural receiving water temperatures.

The Thermal Plan's objectives for existing discharges to estuaries include the following:

i. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

ii. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point. (Miller Creek is not a main river channel, so this objective does not apply.)

iii. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.

Since Miller Creek may be influenced by tidal action near the outfall (or nearby downstream), these estuarine objectives may apply.

(2) RPA Determination for Temperature

Effluent temperature data for Plant effluent and background data from receiving water monitoring stations C-2 (downstream of both Discharge Points 001 and 002) and C-3 (ambient background station upstream of both discharge points) collected between January 2005 and April 2009 were used in this analysis. The condition at the upstream receiving water station was deemed to represent the natural background condition. The receiving water data from downstream receiving water station were compared with upstream receiving water data to examine the discharges' impact on the receiving water.

Effluent temperature data ranged from 54 to 70°F, with a mean of 62.7°F and a standard deviation of 2.9°F. The upstream receiving water station data ranged from 50 to 64°F, with a mean of 56.4°F. The downstream station data ranged from 51.4 to 67°F, with a mean of 58.7°F.

The maximum effluent temperature (70°F) was within 20°F of the mean receiving water temperature (56.4°F). No effluent temperature measured on the same day as receiving water sampling exceeded the ambient receiving water temperature at the upstream station by more than 20°F (the maximum difference was 13.5 °F).

However, there were cases when the downstream receiving water temperature was more than 4°F above the upstream receiving water temperature (the maximum difference was 7.7°F). Because Miller Creek at the location of the discharge outfall is approximately one mile from the mouth of San Pablo Bay, the receiving waters may be impacted by high tides from San Pablo Bay. It is unclear whether the temperature elevation in these cases was caused by the discharge or San Pablo Bay water.

Since it is inconclusive whether the discharge is the primary source to cause temperature objectives to be exceeded in Miller Creek, this Order requires the Discharger to evaluate its impacts on the receiving water with respect to temperature. In the mean time, a temperature receiving water limit is included in the Order.

g. **Constituents with limited data.** In some cases, Reasonable Potential cannot be determined because effluent data are limited, or ambient background concentrations are not available. The Discharger will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether numeric effluent limitations are necessary.

h. **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, Provision VI.C.2(a) requires the Discharger to investigate the source of the increase. Remedial measures will be necessary if the increase poses a threat to receiving water quality.

4. WQBELs 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. The WQBELs were calculated based on appropriate WQOs and the appropriate procedures specified in SIP Section 1.4. The WQOs used for each pollutant with reasonable potential are discussed below.

b. Shallow/Deep Water Discharge. The discharge to Miller Creek is located about one mile from San Pablo Bay. Miller Creek is a tidally influenced perennial creek with intermittent periods of low flow, especially during the summer months. Due to the tidal nature of the creek and limited upstream freshwater flows, particularly during the dry season, the discharge from the facility to Miller Creek is viewed as a shallow water discharge.

c. Dilution Credit. The SIP provides the basis for a dilution credit. Due to the biologically sensitive and critical habitats present in shallow waters, it is generally inappropriate to allocate dilution credits when calculating effluent limitations for

discharges to shallow waters. The discharge to Miller Creek is considered as a shallow water discharge and therefore no dilution credit is provided for most of the toxic pollutants, with the exception of cyanide. Because cyanide is a non-persistent pollutant that quickly disperses and degrades, the Basin Plan grants a dilution credit of 3.25:1 (D=2.25) for calculating WQBELs for cyanide.

d. Development of WQBELs for Specific Pollutants

(1) Copper

(a) **Copper WQC.** The Basin Plan site-specific WQOs for copper for San Pablo Bay are 6.0 and 9.4 micrograms per liter (µg/L), respectively, expressed as dissolved metal. Regional Water Board staff converted these WQOs to total recoverable metal using the site-specific translators of 0.56 (chronic) and 0.83 (acute), as described in IV.D.2.g, above. The resulting chronic objective of 10.7 µg/L and acute objective of 11.3 µg/L were used to perform the RPA.

(b) **RPA Results.** This Order establishes effluent limitations for copper because the MEC (11 µg/L) exceeds the governing WQC (10.7 µg/L) for copper, demonstrating Reasonable Potential by Trigger 1.

(c) **Copper WQBELs**. WQBELs for copper, calculated according to SIP procedures, with an effluent data coefficient of variation (CV) of 0.19, are an AMEL of 8.6 µg/L and an MDEL of 11 µg/L. The previous permit contained an interim limit of 17 µg/L. Therefore, the newly calculated WQBELs are more stringent.

(d) **Immediate Compliance Infeasible.** Statistical analysis of effluent data for copper, collected over the period of January 2004 to April 2008, shows that the 95th percentile (10.2 µg/L) is greater than the AMEL (8.6 µg/L); the 99th percentile (11.6 µg/L) is greater than the MDEL (11 µg/L); and the mean (7.6 µg/L) is greater than the long term average (LTA) (7.4 µg/L) of the compliance lognormal distribution based on effluent variability. The Regional Water Board concludes therefore that immediate compliance with the copper WQBELs is infeasible[1].

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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,

(e) **Need for Cease and Desist Order.** Pursuant to State Water Board Order WQ 2007-0004, no more than five years of compliance schedules can be authorized for pollutants with CTR criteria under the SIP. The previous permit granted a five-year compliance schedule for copper, which already expired; therefore, no compliance schedule is allowed. Because it is infeasible for the Discharger to immediately comply with these WQBELs for copper, the Discharger will likely discharge in violation of this Order. Therefore, a cease and desist order is proposed concurrent with this Order. The cease and desist order is necessary to ensure that the Discharger achieves compliance. It would establish a time schedule for the Discharger to complete necessary investigative, preventive, and remedial actions to address its imminent and threatened violations, and if necessary, to conduct dynamic modeling for establishing WQBELs.

(f) Antibacksliding. Antibacksliding requirements are satisfied because the previous Order did not include final effluent limitations for copper, and the new effluent limits are more stringent than the previous interim effluent limit of 17 µg/L.

(2) Lead

(a) Lead WQC. The most stringent applicable WQC for lead are from the Basin Plan for the protection of freshwater aquatic life, 122 µg/L and 4.7 µg/L, for acute and chronic criteria, respectively.

(b) RPA Results. This Order establishes effluent limitations for lead because the maximum background concentration (6.5 µg/L) exceeds the applicable WQC for this pollutant (4.7 µg/L), and lead was detected in the effluent, demonstrating Reasonable Potential by Trigger 2.

(c) Lead WQBELs. WQBELs for lead, calculated according to SIP procedures, with an effluent CV of 0.44, are an AMEL of 4.1 µg/L and an MDEL of 7.1 µg/L.

The previous permit included an AMEL for lead of 4.6 µg/L and an MDEL of 7 µg/L. Although the newly calculated MDEL is slightly higher than the previous permit's MDEL, the new WQBELs are considered to be more protective of water quality because the new, lower AMEL will limit the discharge to a lower long term average concentration than the previous permit. Therefore, the new effluent limits are more stringent.

(d) Immediate Compliance Feasible. Statistical analysis of effluent data for lead collected over the period of January 2004 to April 2008 shows that the 95th percentile (0.54 µg/L) is less than the AMEL (4.1 µg/L); the 99th percentile (0.77 µg/L) is less than the MDEL (7.1 µg/L); and the mean

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such as direct comparison of MEC with AMEL. If MEC>AMEL, it may be infeasible for the Discharger to immediately comply with WQBELs.

(0.26 µg/L) is less than the LTA (2.9 µg/L) of the compliance lognormal distribution based on effluent variability. The Regional Water Board concludes that immediate compliance with the WQBELs for lead is feasible; and therefore, these WQBELs will become effective upon adoption of this Order.

(e) Antibacksliding. The new lead WQBELs are more stringent than the old effluent limits; therefore, antibacksliding requirements are satisfied.

(3) Nickel

(a) **Nickel WQC.** The Basin Plan contains numeric nickel saltwater WQOs, which are 8.2 µg/L for chronic protection and 74 µg/L for acute protection, expressed as dissolved metal. Site-specific translators developed for Miller Creek of 0.82 and 0.56, for converting acute and chronic objectives, were applied to convert these criteria to total recoverable metal. The resulting WQOs of 90 µg/L and 15 µg/L, for acute and chronic protection, were used in the RPA.

(b) **RPA Results.** This Order establishes effluent limitations for nickel because the maximum background concentration of nickel (30 µg/L) exceeds the most stringent WQO of 15 µg/L, and nickel was detected in the effluent, demonstrating Reasonable Potential by Trigger 2.

(c) **Nickel WQBELs.** WQBELs for nickel, calculated according to SIP procedures, with an effluent CV of 0.24, are an AMEL of 13 µg/L and an MDEL of 19 µg/L. The previous permit contained WQBELs of 11 µg/L for AMEL and 18 µg/L for MDEL, which are more stringent. Therefore, the previous permit WQBELs are retained to avoid backsliding.

(d) **Immediate Compliance Feasible.** Statistical analysis of nickel effluent data collected over the period of January 2004 to April 2008 shows that the 95th percentile (6.3 µg/L) is less than the AMEL (11 µg/L); the 99th percentile (7.3 µg/L) is less than the MDEL (18 µg/L); and the mean (4.5 µg/L) is less than the LTA (11 µg/L) of the compliance lognormal distribution based on effluent variability. The Regional Water Board concludes that immediate compliance with the WQBELs for nickel from the previous permit is feasible; and therefore, these WQBELs will remain effective upon adoption of this Order.

(e) **Antibacksliding.** Antibacksliding requirements are satisfied because the effluent limitations are the same as the previous permit's limits.

(4) Selenium

(a) **Selenium WQC.** NTR contains the most stringent applicable WQC for selenium for the protection of aquatic life, 20 µg/L and 5.0 µg/L, as acute and chronic criteria.

(b) **RPA Results.** This Order establishes effluent limitations for selenium because the MEC of 5.0 µg/L is equal to the applicable WQC for this pollutant, demonstrating Reasonable Potential by Trigger 1.

(c) **Selenium WQBELs.** WQBELs for selenium, calculated according to SIP procedures, with an effluent CV of 1.0, are an AMEL of 3.6 µg/L and an MDEL of 9.2 µg/L. There was no selenium effluent limit in the previous permit.

(d) **Immediate Compliance Feasible.** Statistical analysis of effluent data for selenium collected over the period of January 2004 to April 2008 shows that the 95th percentile (1.1 µg/L) is less than the AMEL (3.6 µg/L); the 99th percentile (4.2 µg/L) is less than the MDEL (9.2 µg/L); and the mean (0.94 µg/L) is less than the LTA (1.8 µg/L) of the compliance lognormal distribution based on effluent variability. The Regional Water Board concludes that immediate compliance with these WQBELs for selenium is feasible; and therefore, these WQBELs will become effective upon adoption of this Order.

(e) **Antibacksliding.** Antibacksliding requirements are satisfied because the previous Order did not include an effluent limit for selenium.

(5) Cyanide

(a) **Cyanide WQC.** The most stringent applicable WQC for cyanide are an acute criterion of 9.4 µg/L and a chronic criterion of 2.9 µg/L. These are established in the Basin Plan for protection of marine aquatic life in San Francisco Bay (cyanide site-specific objectives).

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

(c) **Cyanide WQBELs.** WQBELs for cyanide, calculated according to SIP procedures, with an effluent CV of 0.6 and a dilution credit of 2.25 (dilution ratio=3.25), are an AMEL of 6.9 µg/L and an MDEL of 14 µg/L.

(d) **Immediate Compliance Feasible.** Although statistical analysis of cyanide effluent data collected over the period of February 2004 to April 2008 shows that the 95th percentile (9.9 µg/L) is greater than the AMEL (6.9 µg/L); the 99th percentile (16 µg/L) is greater than the MDEL (14 µg/L) (the mean (3.6 µg/L) is less than the LTA (4.4 µg/L) of the compliance lognormal distribution based on effluent variability), the Discharger believes that it will be able to comply with these WQBELs through operational changes and more frequent sampling, e.g., sampling more than once per month. Therefore, these WQBELs will become effective upon adoption of this Order.

(e) **Antibacksliding**. Antibacksliding requirements are satisfied because the previous permit did not include WQBELs for cyanide and the new WQBELs are more stringent than the previous interim effluent limit of 19 µg/L.

(6) Dioxin – TEQ

(a) **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 x 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 x 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 specific water quality objectives for dioxin-like PCBs, and they are included in the analysis of total PCBs.

(b) **RPA Results.** This Order establishes effluent limitations for dioxin-TEQ because the MEC (7.9×10^{-8} µg/L) exceeds the applicable water quality criterion (1.4×10^{-8} µg/L), demonstrating Reasonable Potential by Trigger 1.

(c) **Dioxin-TEQ WQBELs.** WQBELs for dioxin-TEQ, calculated using SIP procedures, with a 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.

(d) **Immediate Compliance Infeasible.** The Discharger submitted an Infeasibility Analysis on July 6, 2009, demonstrating that it cannot immediately comply with final WQBELs for dioxin-TEQ. With insufficient data to determine the distribution of the data set or to calculate a mean and standard deviation, feasibility to comply with final effluent limitations is determined by comparing the MEC ($7.9 \text{ X } 10^{-8}$ µg/L) to the AMEL (1.4×10^{-8} µg/L) and the MDEL (2.8×10^{-8} µg/L). Based on this analysis, the Regional Water Board concurs with the Discharger that immediate compliance with WQBELs for dioxin-TEQ is infeasible.

(e) **Need for a Compliance Schedule.** This Order contains a compliance schedule based on 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 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.

A compliance schedule for dioxin-TEQ is appropriate because the Discharger has made good faith and 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 these pollutants 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 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."

The Compliance Schedule Policy requires that compliance schedules include interim limits. The compliance schedule and interim limit will remain in effect for ten years from the effective date of this Order. The final effluent limits will become effective on December 1, 2019. The Regional Water Board may amend these limits based on new information or a TMDL for dioxin-TEQ.

(f) **Interim Effluent Limitation.** Since it is infeasible for the Discharger to comply with the 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 November 30, 2019.

(g) **Antibacksliding.** Antibacksliding requirements are satisfied because the previous permit did not include WQBELs for dioxin-TEQ.

e. Effluent Limitation Calculations. The following table shows the derivation of WQBELs for copper, lead, nickel, selenium, cyanide, and dioxin-TEQ.

Table F-11. Effluent Limit Calculations

PRIORITY POLLUTANTS	Copper	Lead	Nickel	Selenium	Cyanide	Dioxin-TEQ
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Basis and Criteria type	BP SSOs	BP FW Aquatic Life	BP SW Aquatic Life	NTR Criterion for the Bay	BP SSOs	BP Narrative
Criteria -Acute	-----	122	74	20	-----	-----
Criteria -Chronic	-----	4.7	8.2	5.0	-----	-----
SSO Criteria -Acute	3.9	-----	-----	-----	9.4	-----
SSO Criteria -Chronic	2.5	-----	-----	-----	2.9	-----
Water Effects ratio (WER)	2.4	1	1	1	1	1

PRIORITY POLLUTANTS	Copper	Lead	Nickel	Selenium	Cyanide	Dioxin-TEQ
Lowest WQO		4.7	15	5.0	2.9	1.4E-08
Site Specific Translator - MDEL	0.83	-----	0.82	-----	-----	-----
Site Specific Translator - AMEL	0.56	-----	0.56	-----	-----	-----
Dilution Factor (D) (if applicable)	0	0	0	0	2.25	0
No. of samples per month	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	Y	N
HH criteria analysis required? (Y/N)	N	N	Y	N	Y	Y
Applicable Acute WQO	11	122	90	20	9.4	
Applicable Chronic WQO	11	4.7	15	5.0	2.9	
HH criteria	-----	----	4600	----	220000	1.4E-08
Background (Maximum Conc for Aquatic Life calc)	14.3	6.5	30	0.33	0.4	7.1E-08
Background (Average Conc for Human Health calc)	-----	----	5.4	----	0.4	5.0E-08
Is the pollutant on the 303d list (Y/N)?	N	N	Y	Y	N	Y
ECA acute	11	122	90	20	30	
ECA chronic	11	4.7	15	5	9	
ECA HH			4600		714999	1.4E-08
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	N	N	Y
Avg of effluent data points	7.6	0.26	4.5	0.94	3.6	
Std Dev of effluent data points	1.4	0.11	1.1	0.97	2.3	
CV calculated	0.19	0.44	0.24	1.0	0.6	N/A
CV (Selected) - Final	0.19	0.44	0.24	1.0	0.6	0.6
ECA acute mult99	0.66	0.41	0.59	0.20	0.31	
ECA chronic mult99	0.81	0.62	0.76	0.36	0.51	
LTA acute	7.4	50.2	53.2	4.0	9.1	
LTA chronic	9	2.9	11.1	1.8	4.4	
minimum of LTAs	7.4	2.9	11.1	1.8	4.4	
AMEL mult95	1.2	1.4	1.2	2.0	1.6	1.6
MDEL mult99	1.5	2.4	1.7	5.0	3.3	3.1
AMEL (aq life)	9	4.1	13.5	3.6	6.9	
MDEL(aq life)	11	7.1	18.9	9.2	14.2	
MDEL/AMEL Multiplier	1.30	1.74	1.40	2.55	2.06	2.01
AMEL (human hlth)			4600		714999	1.4E-08
MDEL (human hlth)			6441		1470009	2.8E-08
minimum of AMEL for Aq. life vs HH	8.6	4.1	13	3.6	6.91	1.4E-08
minimum of MDEL for Aq. Life vs HH	11.3	7.1	19	9.2	14.20	2.8E-08
Current limit in permit (30-day average)	-----	4.6	11	-----	-----	-----
Current limit in permit (daily)	17 (Interim)	7	18	-----	19 (Interim)	-----
Final limit - AMEL	**8.6**	**4.1**	**11**	**3.6**	**6.9**	**1.4E-08**
Final limit - MDEL	**11**	**7.1**	**18**	**9.2**	**14**	**2.8E-08**
Max Effl Conc (MEC)	11	0.74	8.5	5	10	7.9E-08

5. Whole Effluent Acute Toxicity

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 permit for discharges of Plant effluent to Miller Creek. All bioassays are to be performed according to the USEPA approved method in 40 CFR 136, currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition." The approved test species is rainbow trout.

6. Whole Effluent Chronic Toxicity

a. **Monitoring History.** The Discharger's chronic toxicity monitoring data from January 2004 to April 2008 showed two exceedances of the 3-sample median trigger with results reported as 2.5 TUc and 1.2 TUc. Two exceedances of the single sample maximum trigger occurred with reported bioassay results reported as 3.1 TUc and 2.5 TUc. TIE work was conducted in February 2008 to investigate early decreases in survival for the February chronic toxicity bioassay test. The TIE did not indicate a cause of the chronic toxicity and continued monitoring will occur to determine whether a TRE is required.

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

c. **Reasonable Potential Analysis.** Based on the data summarized above, there is reasonable potential for chronic toxicity in the effluent to cause or contribute to chronic toxicity in the receiving waters. Therefore, the SIP requires chronic toxicity effluent limits.

d. **Permit Requirements.** This Order establishes a narrative effluent limitation for chronic toxicity based on the narrative Basin Plan toxicity objective discussed in item b above. In addition, this Order retains from the previous permit requirements to implement the chronic toxicity narrative objective and includes numeric triggers of 1.0 TUc as a three-sample median and 2.0 TUc as a single-sample maximum. These triggers are based on Basin Plan Table 4-5.

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

E. Antibacksliding and Antidegradation

Effluent limits in this Order that are less stringent than those in the previous permit or are not retained from the previous permit 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 IV.C.2.f above, the removal of this limit complies with antibacksliding requirement and is not expected to cause degradation of water quality because the Discharger will maintain its treatment at current levels and the 5-day geometric mean limit will hold the Discharger to its current performance.

- The alternate CBOD5 daily maximum effluent limit for wet season is not retained. The average weekly limit is less stringent. These changes are consistent with federal regulations for secondary treatment in 40 CFR 133 and comply with CWA requirements. This change is not expected to cause degradation of water quality because the Discharger will maintain its treatment at its current performance.

- Effluent limitations for settleable matter are not retained. The Plant provides secondary treatment, and the settleable matter effluent limits of the previous permit 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; therefore, not retaining the 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 its current performance.

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

- The previous permit included interim effluent limitations for bis(2-ethylhexyl)phthalate, 4,4'-DDE, dieldrin, and heptachlor epoxide; however, the RPA shows that the discharge no longer demonstrates reasonable potential for these pollutants to cause or contribute to exceedances of applicable water quality criteria and therefore this Order does not retain these limitations. Elimination of the interim limitations for these pollutants is consistent with State Water Board Order No. WQ 2001-16, and degradation is not expected because the Discharger will maintain its current performance.

G. Effluent Limitations for Discharge to Storage Ponds/Wildlife Pond and Dry Weather Emergency Discharge

1. **Wet Season Discharge to the Storage Ponds.** The discharge to the storage ponds during November 1 through April 30 is to meet the effluent limits for conventional and non-conventional pollutants (for November 1 through April 30), enterococcus bacteria, and toxic pollutants. The same effluent limitations apply during the month of May, except more stringent effluent limits for conventional and non-conventional pollutants then apply.

2. **Wet Season Discharge to Wildlife Pond.** The discharge to the wildlife pond directly from the Plant effluent line is to meet the same effluent limits as the wet season discharge to the storage ponds, plus it must meet the effluent limitations for total chlorine residual.

3. **End of Dry Season Discharge to Storage Ponds.** If the Discharger needs to discharge surplus wastewater remaining in the reclamation storage ponds to Miller Creek at the beginning of the discharge season (i.e., November), the discharge to the storage ponds during the preceding month (i.e., October) is to comply with the same effluent limits as would apply to the discharge to the storage ponds during November 1 through April 30, except the effluent limitations for chronic toxicity would not apply.

4. **Dry Season Discharge to Storage Ponds for Storage (Other than Reclamation).** If treated wastewater is discharged to the wildlife pond or storage ponds during June through September mainly for storage, for eventual discharge to Miller Creek, then this wastewater is to comply with the same effluent limits as would apply to the discharge to the storage ponds during May, except for effluent limitations for acute and chronic toxicity would not apply.

5. **Dry Season Emergency Discharge.** If the Discharger needs to discharge to Miller Creek during the non-discharge season (during June 1 through October 31), then the discharge from Plant effluent line at the time of discharge, or the discharge from the storage ponds during the month preceding the onset of the discharge and during the month of the discharge, is to comply with the same effluent limits as would apply to the discharge to the wildlife pond directly from the Plant effluent line during May.

H. Land Discharge Specifications

Not Applicable.

I. Reclamation Specifications

The Discharger's reclamation activities are regulated under individual water reclamation requirements, Order Nos. 92-064 and 89-127.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving water limitations V.A.1 and V.A.2 are based on the narrative and numeric objectives contained in Basin Plan Chapter 3. The receiving water limits for total ammonia are not retained from the previous permit because there are now effluent limits to ensure compliance with the receiving water limits.

Receiving water temperature limit is newly added because Miller Creek supports cold water beneficial use and available monitoring data show that there was an exceedance of the Thermal Plan objectives. The temperature limit is based on the Thermal Plan. If a study required by Provision VI.C.2.j demonstrates that the discharge is not the primary cause of temperature objective exceedance in Miller Creek, this temperature limit may be removed for future permit reissuances.

Receiving water limitation V.A.3 is retained from the previous permit, it requires compliance with federal and State water quality standards.

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 an 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
- 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 the sampling stations and

frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

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

A. Influent Monitoring

Flow, BOD_5, and TSS monitoring requirements are the same as in the previous permit and allow determination of compliance with the Order's 85 percent removal requirement.

B. Effluent Monitoring

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

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

- The MRP establishes routine monitoring for toxic pollutants with effluent limitations (copper, lead, nickel, selenium, cyanide, dioxin-TEQ, and total ammonia). Routine monitoring for total chromium is no longer required because this pollutant no longer demonstrates reasonable potential. Routine monitoring for mercury is no longer required because this pollutant is now regulated under a separate Order (R2-2007-0077.)

- The MRP retains routine monitoring for acute and chronic toxicity for discharges from the Plant to Miller Creek at Discharge Points 001 and 002.

C. Receiving Water Monitoring

On April 15, 1992, the Regional Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program (RMP) for the San Francisco Bay. Subsequent to a public hearing and various meetings, Regional Water Board staff requested major permit holders in the Region, under authority of CWC section 13267, 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.

Receiving water monitoring requirements for Miller Creek are retained from the previous permit. The MRP establishes new monitoring requirements for salinity.

D. Other Monitoring Requirements

1. **Pretreatment Monitoring Requirements.** Not Applicable.

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

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which, in accordance with 40 CFR 122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D of this Order. The Discharger must comply with all standard provisions and with those additional conditions that apply under 40 CFR 122.42.

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

Regional Standard Provision, and Monitoring and Reporting Requirements (Supplement to Attachment D) also apply to this discharge permit and are provided in Attachment G.

B. MRP Requirements

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

C. Special Provisions

1. Reopener Provisions

These provisions are based on 40 CFR 123 and allow future 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 for Selected Constituents.** 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 the

MRP (Attachment E). If concentrations of these constituents increase significantly, the Discharger must 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 unchanged from the previous permit.

b. **Ambient Background Monitoring.** This provision is based on the Basin Plan and the SIP. As indicated in this Order, this requirement may be met by participating in the collaborative study. This provision is retained from the previous permit.

c. **Chronic Toxicity Reduction Study.** These general TIE/TRE requirements establish guidelines for TIE/TRE evaluations and are unchanged from the previous permit.

d. **Receiving Water Ammonia Characterization Study.** This Order requires a study on Miller Creek focusing on ammonia. It will generate information for the Regional Water Board to evaluate ammonia and un-ionized ammonia levels in the receiving water. Regional Water Board staff may use the data to examine whether the receiving water meets applicable ammonia objectives. The Discharger may also be able to use this information to propose an appropriate dilution credit for the ammonia effluent limit calculation for the next permit reissuance. If monitoring data show that ammonia WQOs are exceeded in the receiving water, the permit may be reopened to include WQBELs for ammonia.

e. **Freshwater Marsh/Wildlife Pond Reclamation Storage Pond Operation.** This provision is retained from the previous permit. It states the requirements for management of the freshwater marsh/ wildlife pond and the storage ponds. It is necessary to ensure that the freshwater marsh/wildlife pond is operated in a manner consistent with the assumptions that underlie this Order's requirements.

f. **Storage Pond Characterization Study.** The Discharger is to perform a study to characterize effluent quality in the storage ponds. Data generated from this study may be used to identify whether the water quality has changed after the effluent is stored in the ponds for several months. The study is needed to determine in the future whether to move the compliance location from EFF-001 or EFF-001D to EFF-002 for pond discharges to Miller Creek.

g. **Miller Creek Access.** This provision is retained from the previous permit to minimize public access to Miller Creek where discharge from the Plant is occurring.

h. **Reduction of Non-discharge Season and Reclamation Plan (Optional).** This provision is unchanged from the previous permit. Although the Discharger believes that reclamation demand most likely will be increased in the future, there are still uncertainties. This provision will provide the Discharger with some flexibility and would avoid frequent emergency discharge requests to be made, which may be too much a burden on both the Discharge and on the Regional

Water Board to evaluate such requests, if the storage ponds constantly run out of storage when reclamation demand opportunities diminish.

i. **Special Study to Examine Relationship Between TSS, BOD, and Other Toxic Pollutants for Reduced Sampling During Blending (Optional).** If the Discharger wishes to sample BOD and TSS as surrogates during blending, it may conduct a study to demonstrate that BOD and TSS are valid indicators of whether other pollutants are in compliance with their effluent limits.

j. **Miller Creek Temperature Study.** Because the RPA for temperature is inconclusive, this Order requires a study focused on effluent and receiving water temperature to examine whether the discharge would cause or contribute to temperature objectives being exceeded in Miller Creek.

k. **Optional Mass Offset.** This option is provided to encourage the Discharger to implement aggressive reduction of mass loads to the receiving water. 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.

3. Best Management Practices and Pollution Minimization Program

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

4. Wastewater Treatment Reliability and Adequacy Specifications

a. **Reliability Report.** This provision is continued from the previous permit, in which it was titled “Wastewater Treatment Facility Improvements.” The provision is required to support the Discharger’s request for an exception to Basin Plan Discharge Prohibitions I.

b. **Corrective Measures to Minimize Blending.** This provision is based on 40 CFR 122.41(m)(4) as detailed in Fact Sheet section IV.A.2. According to the Discharger’s No Feasible Alternatives Analysis submitted on June 2, 2008, blending occurred for approximately 45 days in January through March 2004, approximately 60 days from November 2005 through April 2005, approximately 35 days from November 2006 through April 2007, and approximately 10 days from November 2007 through April 2008. The Discharger has implemented operational changes in 2007 to increase the flow that receives secondary treatment to 8 MGD. The Discharger’s No Feasible Alternatives Analysis proposed long-term modifications that would largely eliminate blending as a routine wet weather flow management strategy. This provision is required to ensure that the Discharger implements these corrective measures to minimize or eliminate blending consistent with 40 CFR 122.41(m). This provision also requires the Discharger to submit another No Feasible Alternatives Analysis 180 days prior to the Order expiration date to provide a current assessment of the need to blend.

c. **Dry Weather Flow Capacity Analysis.** This provision is retained from the previous permit. The previous permit indicated that the Plant's dry weather flow is above 75 percent of the Plant design treatment capacity (2.92 MGD). Recent flow data reported in the Discharger's Report of Waste Discharge also indicate annual average flows greater than 75% of the Plant design capacity. The provision is therefore retained to establish requirements for the Discharger prior to planning any expansion of the Plant's dry weather treatment capacity.

5. Special Provisions for POTWs.

a. **Biosolids Management Practices Requirements.** This provision is based on the Basin Plan (Chapter 4) and 40 CFR Parts 257 and 503.

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

The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions apply as specified in Provisions, section VI.C.5. 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 SSOs. The Regional Water Board issued a 13267 letter on May 1, 2008, requiring dischargers to comply with the new notification requirements for SSOs. and to comply with The Regional Standard Provisions (Attachment G) contains similar notification and reporting requirements for spills from wastewater treatment facilities.

c. **Collection System Improvements.** This provision is retained from the previous permit. The previous permit required the Discharger to prepare and submit a report to the Regional Water Board to identify specific ongoing and planned projects for reducing infiltration and inflow (I & I) to the collection system. This Order continues the requirement to submit annual reports to update the Regional Water Board of continuing efforts to reduce I & I.

6. Other Special Provisions

a. **Action Plan for Copper.** This Order requires the Discharger to implement monitoring and surveillance, pretreatment, source control, and pollution prevention for copper in accordance with the Basin Plan. The Basin Plan contains site-specific water quality objectives for copper in San Francisco Bay. The Basin Plan includes an implementation plan that requires a Copper Action Plan to ensure no degradation of water quality.

b. **Action Plan for Cyanide.** This provision is based on the Basin Plan. 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 this Order.

c. **Compliance Schedule for Dioxin-TEQ**. This provision is based on the State Water Board Compliance Policy. Fact Sheet Section IV.D.4.d(6) provides more detailed basis for this requirement.

VIII. PUBLIC PARTICIPATION

The 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 the Las Gallinas Valley Sanitary District Sewage Treatment Plant (Plant). As a step in the WDR adoption process, the 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 Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through Marin Independent Journal.

B. Written Comments

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

To receive full consideration and a response from Regional Water Board staff, written comments must be received at the Regional Water Board offices by 5:00 p.m. on August 31, 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: October 14, 2009
Time: 9 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street
Oakland, CA
1st floor Auditorium
Contact: Ms. Tong Yin, Phone: (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.

Dates and venues may change. Our Web address is *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, 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 8:45 a.m. and 5:00 p.m., Monday through Thursday for the first three weeks of a month, and Monday through Friday for the rest of the month. Copying of documents may be arranged by calling (510) 622-2300.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Tong Yin at (510) 622-2418 or email TYin@waterboards.ca.gov.

APPENDIX B

TENTATIVE CEASE AND DESIST ORDER

California Regional Water Quality Control Board
San Francisco Bay Region

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Linda S. Adams
Secretary for
Environmental Protection

Arnold Schwarzenegger
Governor

CEASE AND DESIST ORDER NO. R2-2009-XXXX

REQUIRING THE LAS GALLINAS VALLEY SANITARY DISTRICT TO CEASE AND DESIST DISCHARGING PARTIALLY-TREATED WASTEWATER TO WATERS OF THE STATE

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

1. The Las Gallinas Valley Sanitary District (hereinafter Discharger) owns and operates a wastewater treatment plant (Plant), located at 300 Smith Ranch Road, San Rafael, Marin County, CA 94903. The Plant treats wastewater from domestic and commercial sources from the northern area of San Rafael. It has a dry weather design capacity of 2.92 million gallons per day (MGD).

2. The wastewater discharge has been regulated by waste discharge requirements in Order No. R2-2003-0108 (NPDES Permit No. CA0037851, the previous permit).

3. Immediately preceding the adoption of this Cease and Desist Order, the Regional Water Board adopted Order No. R2-2009-XXXX (hereinafter "Permit"), reissuing waste discharge requirements for the Discharger. The Permit contains prohibitions, limitations, and provisions regulating the discharge. Final effluent limitations for toxic pollutants established by the Permit include those listed in Table 1, below.

Table 1. Water Quality-Based Effluent Limitations (WQBELs) for Copper

Parameter	Final Effluent Limits		Monitoring Stations
	Average Monthly (µg/L)	Maximum Daily (µg/L)	
Copper	8.6	11	EFF-001 or EFF-001-D

4. As stated in the Fact Sheet accompanying the Permit, the Regional Water Board concludes that the Discharger cannot immediately comply with the WQBELs for copper, because the 95th percentile (10.6 µg/L) and 99th percentile (12.1 µg/L) of the effluent data set from January 2004 through April 2009 exceed the average monthly and maximum daily effluent limitations.

5. Pursuant to State Water Board Order No. WQ-2007-0004, the Regional Water Board cannot establish a schedule for compliance with final limitations for copper. Because the Discharger cannot immediately comply with final effluent limitations for copper, discharges from the Plant threaten to violate the final effluent limitations established by Order No. R2-2009-XXXX for this pollutant.

6. Water Code § 13301 authorizes the Regional Water Board to issue a Cease and Desist Order when it finds that a waste discharge is taking place, or threatening to take place, in violation of Regional Water Board requirements.

7. Because the Discharger will violate or threatens to violate required effluent limitations, this Cease and Desist Order is necessary to ensure that the Discharger achieves compliance. This Order establishes a time schedule for the Discharger to complete necessary investigative, preventive, and remedial actions to address imminent and threatened violations of effluent limitations for copper.

8. The time schedule in this Order is intended to be as short as possible. It accounts for the considerable uncertainty in determining effective measures (e.g., pollution prevention and treatment plant upgrades) necessary to achieve compliance. This Order allows the Discharger some time to continue to explore source control measures before requiring further actions, such as treatment plant upgrades, which are likely to be much more costly. The time schedule is based on reasonably expected times needed to implement source identification and upstream source control; evaluate success; identify on-site treatment alternatives, if necessary; test and select from among alternatives; and construct Plant upgrades. The Regional Water Board may revisit these assumptions as more information becomes available.

9. As part of the time schedule to achieve compliance, this Order requires the Discharger to comply with an interim effluent limit based on past treatment performance. The interim maximum daily effluent limitation for copper shall be 14 µg/L. This limitation is a performance-based interim limitation based on the 99.87th percentile of the Discharger's copper effluent data collected from January 2004 through April 2009. It is more stringent than the interim effluent limit of 17 µg/L in the previous permit. The interim effluent limit is intended to ensure that the Discharger maintains at least its existing level of treatment performance while completing all tasks required by this Order.

10. This Order is an enforcement action and, as such, in accordance with 14 CCR § 15321, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21000 et seq.).

11. The Regional Water Board has notified the Discharger and interested persons of its intent to consider adoption of this Cease and Desist Order and has provided an opportunity to submit written comments and appear at a public hearing. The Regional Water Board, in a public hearing, has heard and considered all comments.

IT IS HEREBY ORDERED, in accordance with Water Code § 13301, that the Discharger shall cease and desist from discharging and threatening to discharge wastes in violation of its Permit by complying with the following provisions.

1. **Prescribed Actions.** The Discharger shall comply with the required actions in Table 2 in accordance with the time schedule provided therein to comply with the effluent limitations contained in the Permit. Deliverables listed in Table 2 shall be acceptable to the Executive Officer, who will review them for adequacy and compliance with the Table 2 requirements. The Discharger shall implement all actions set forth in each deliverable, unless the Executive Officer finds the deliverable to be unacceptable.

2. **Reporting Delays**. If the Discharger is delayed, interrupted, or prevented from meeting one or more of the activities described in Table 2, due to circumstances beyond its reasonable control, the Discharger shall promptly notify the Executive Officer, provide the reasons and justification for the delay, and propose a time schedule for resolving the delay.

3. **Consequences of Non-Compliance**. If the Discharger fails to comply with the provisions of this Order, the Executive Officer is authorized to take further enforcement action or to request the Attorney General to take appropriate action against the Discharger in accordance with Water Code §§ 13331, 13350, 13385, and 13386. Such actions may include injunctive and civil remedies, if appropriate, or the issuance of an Administrative Civil Liability Complaint for Regional Water Board consideration.

4. **Effective Date**. This Order shall be effective on the effective date of the Permit, December 1, 2009.

Table 2. Time Schedules and Prescribed Actions for Copper

Action	Deadline
a. Comply with the following interim effluent limit at Monitoring Station EFF-001 or EFF-001D. Interim daily maximum effluent limit = 14 µg/L	December 1, 2009
b. Continue to implement measures to control copper sources as part of the Discharger's pollution prevention (P2) program and ongoing Plant upgrades effort, including, but not limited to, the following elements: (1) Continue inspection of targeted commercial/light industrial facilities to ensure that they are implementing appropriate best management practices to control copper. (2) Identify potential elevated sources of copper in commercial areas through sanitary sewer line surveillance monitoring. (3) Provide education and outreach to the public (with a focus on proper pool and spa maintenance). (4) Continue participation in the Bay Area Pollution Prevention Group (BAPPG) and other regional and statewide P2 efforts. In particular, support BAPPG's Plumber's Apprenticeship and Union Outreach Program. (5) Continue partnerships with other sanitation agencies and Marin County Storm Water Pollution Prevention Program on environmental education programs and Wetlands Days. (6) Continue P2 messages in the Discharger's newsletter. (7) Continue with phased Plant upgrades.	December 1, 2009
c. Continue to implement the program described in action "b" 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 the Permit. If not, identify and implement additional measures to further reduce discharges.	Annually each February 28 in Best Management Practices and Pollutant Minimization Reports required by Permit Provision VI.C.3
d. If by May 31, 2011, discharge data continues to show the discharge is out of compliance (as defined in 2.4.5. of the State Implementation Policy) with the Permit effluent limits, submit a report, by the deadline	August 1, 2011

	Action	Deadline
	for this action, identifying more aggressive actions to ensure compliance. These actions shall include, but not be limited to, modeling receiving water quality and reviewing options for pretreatment and upgrades to the treatment plant. The report shall identify an implementation schedule for investigating these options, selecting a preferred option, and implementing the chosen option. At a minimum, the report shall plan for the following activities: (1) Dynamic modeling of the discharge and its impacts on receiving water quality (2) Bench scale testing or pilot scale testing or both (3) Development of preliminary design specifications (4) Development of final design specifications (5) Procurement of funding (6) Acquisition of necessary permits and approvals (7) Construction.	
e.	Implement the plan required in action "d" within 45 days following the deadline for action "d," and submit a status report.	Annually by February 1 with the Annual Self-Monitoring Report as required by the Monitoring and Reporting Program (Attachment E of Permit).
f.	Submit documentation confirming complete plan implementation and achieve compliance with copper effluent limits specified in IV.B. of the Permit.	November 30, 2014

I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 14, 2009.

BRUCE H. WOLFE
Executive Officer

APPENDIX C

COMMENT LETTERS

August 28, 2009

Mr. Bruce H. Wolfe
Executive Officer
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Comments on the Reissued Tentative Order NPDES No. CA0037851 - Las Gallinas Valley Sanitary District

Dear Mr. Wolfe:

The Las Gallinas Valley Sanitary District (District) submits the following comments on the Tentative Order (TO) NPDES No. CA003785, Waste Discharge Requirements for the Las Gallinas Valley Sanitary District.

The District is primarily concerned with the number of special studies required by this permit, especially those for which the District believes there is insufficient justification in the record. These studies divert limited District resources away from important plant and collection system improvements. The District's specific objections are expressed in several of the comments below.

Hearing Date: *Requested Change:* Because of a conflict with the WEFTEC Conference, the District requests that the permit hearing date be postponed by one month, until the Water Board's November 2009 meeting.

Table 2. Discharge Location and Table F-2 (Fact Sheet).

Requested Change: Minor correction to discharge lat/long coordinates:
Location 001 – latitude 38º 01' 31" N, longitude 122º 31' 1" W
Location 002 – latitude 38º 01' 37" N, longitude 122º 30' 48" W

Table 4. Facility Information, Service Areas

Requested Changes

Facility Contact: Mark Williams, General Manager~~/Chief Operator~~
Service Area: " City of San Rafael (northern area) and portions of county.

Section II.B.1 Facility Description

Comment: The intermediate clarifiers can be operated in a variety of configurations. Under wet weather high flow conditions, they are operated as parallel primary clarifiers. The District utilizes

chemical addition at the primary clarifiers to improve performance during high flow conditions. Finally, the trickling filters can be operated in series, parallel, or a series-parallel configuration.

Requested Change:

> **"Facility Description** The Discharger owns and operates the Las Gallinas Valley Sanitary District Sewage Treatment Plant (Plant) and its sewage collection system. The Plant provides secondary level treatment for wastewater collected from the northern area of the City of San Rafael. Treatment processes at the Plant include two mechanically cleaned fine screens, two aerated grit chambers, one circular primary clarifier, two intermediate clarifiers (~~essentially~~ that can be operated as additional primary clarifiers before secondary treatment), chemical addition to primary clarifiers during high flow conditions, two trickling filters ~~in series~~, a secondary clarifier, a fixed film reactor for nitrification, eight coarse media (anthracite) filter cells, two underground chlorine contact basins, disinfection using sodium hypochlorite for disinfection, and dechlorination using sodium bisulfite.
>
> "The Discharger's sewage collection system includes 107 miles of gravity-flow sanitary sewer lines and 35 miles of pressure sewers, ranging in diameter from 6 to ~~42~~ 30 inches, and ~~27~~ 28 lift stations."

Section II.B.2 Discharge Description

Comment: The District generally computes the average dry weather flow over the three month period of July-October. In 2008, the average dry weather effluent flow over the July-August period, as reported in the District's Self Monitoring Reports, was 2.15 MGD. (The District calculates the average flow over the June-August period to be 2.19 MGD)

Requested Change: Revise cited 2008 ADWF to 2.15 MGD (July-September)

Section II.B.5 Biosolids Management

Comment: Some of the skimmings are fed to the anaerobic digesters, with the remainder sent to the landfill. Screenings collected on the influent screens are also sent to the landfill, after washing and compacting

Requested change: Add "Grit, screenings, and a portion of the skimmed material is placed in the Redwood Sanitary Landfill…."

Section II.B Facility Description (final paragraph)

Comment: The two flow schematics referred to as Attachment C constitute the process schematic diagram for the plant.

Requested change: Revise wording: ~~"A~~ Treatment process flow schematic diagrams are ~~is~~ included as Attachment A of this Order. Attachment B provides a map of the area around the Plant. ~~Attachment C provides flow schematics of the Plant~~."

Also, please replace the schematic diagram for flows greater than 8 mgd with the more recent version (Attachment A)

Section III.C Discharge Prohibitions

Comment: This paragraph acknowledges that discharges to Miller Creek may be necessary under unusual conditions such as a late spring or early fall storms. The District is concerned that the process described for securing Executive Officer approval for such discharges may be impractical, given that it is very difficult to predict in advance the impact on treatment plant flow of a unseasonable storm event, and that the process for requesting (with supporting calculations) and securing EO approval could take longer than the actual storm event, particularly if a weekend is involved. The District requests that more flexible language be incorporated into the prohibition for discharges related to unseasonable storm events.

Requested change:

"Discharge to Miller Creek at Discharge Points 001 and 002 is prohibited during the dry season each year, from June 1 through October 31, unless the Discharger submits a request for discharge and that request is approved by the Executive Officer. In the event of high wastewater flows resulting from an early or late season storm, the Discharger, after considering the feasibility of reclamation and use of the storage ponds, may at its discretion discharge some or all of the effluent to Miller Creek for the duration of the elevated flow event. ~~Such a request~~ In the Self Monitoring Report for the period during which the discharge occurred, the Discharger shall fully explain the need to discharge to Miller Creek during the dry season and shall provide information regarding the total volume of flow discharged and estimates ~~calculations~~ of dilution (effluent flow in receiving water flow) that ~~will~~ occurred during this period. ~~(e.g., discharges to Miller Creek may be allowed when high flows occur related to late spring or early fall storms and reclamation is infeasible)~~."

Section IV.B.1 Effluent Limitations for Conventional and Non-Conventional Pollutants

Comment: The District objects to the inclusion of final numeric limits for dioxin-TEQ, for reasons expressed in comments submitted by the Bay Area Clean Water Agencies (BACWA) for this and other recent NPDES Tentative Orders. The BACWA comments are incorporated by reference in this comment letter.

Comment: Two typographic errors in this section should be corrected.

Requested change: The first paragraph (above Table 8) should be designated with a "1." Also, footnotes (3) and (4) in Table 8 are incorrectly placed. Footnote (3) should be moved from Copper to Dioxin. Footnote (4) should be moved from Dioxin to Units. A footnote referring to the compliance schedule and interim limits for copper could be added.

Section IV.B.3.b. Whole Effluent Chronic Toxicity

Comment: This section defines TUc = 100 / NOEC, where NOEC (No observed effect concentration) is determined (per MRP Appendix E-1) based on hypothesis testing. All of the District's previous permits have defined TUc as 100/NOEL, where the NOEL (No Observed Effect Level) was reported as the lower of the IC25 or EC25 values.

The IC25 and EC25 are point estimates statistically derived from a continuous mathematical model (linear regression and linear interpolation) of the test data. The NOEC, as defined in this permit, is determined at discreet concentrations only using hypothesis testing. The U.S. EPA Technical Support Document (TSD) for Water Quality-based Toxics Control (1991) states "the IC25 is the

preferred statistical method for determining the NOEC." (emphasis added). This was more clearly stated in terms consistent with the SFRWQCB's permit definitions in the final U.S. EPA rule promulgating the WET test methods that stated "In today's action, EPA reiterates the recommendation of the method manuals and the TSD (USEPA, 1991) by stating that for the NPDES Permit Program, point estimation techniques are preferred over hypothesis testing approaches for calculating endpoints for effluent toxicity tests." (emphasis added). The District believes, as do the toxicologists at the ELAP and NELAP-accredited contract laboratory that conducts WET testing for the District, that it is scientifically more rigorous to continue reporting compliance results in chronic toxicity units using the point estimate results (IC25 and EC25), and that this approach is consistent with the previous 15 plus years of data and with U.S. EPA recommendations.

Additional technical justification for retaining the current definition of TUc is provided in the letter from Pacific Ecorisk Laboratory, included as Attachment A and is incorporated by reference in these comments.

Requested Change: Revise the compliance definition of chronic toxicity units (TUc) to be consistent with the previous definition (i.e. 100/ NOEL where NOEL is reported as the IC25 or EC25). The District would continue to report NOEC values with the chronic toxicity test results as required in MRP V.B.2.a.

Section IV.B.3.d Whole Effluent Chronic Toxicity

Correct typos: Paragraph numbering should be "d", rather than 'b". Also, in 1st sentence, change "MPR" to "MRP".

Section IV.B.4. Table 9 Interim Effluent Limits (Dioxin-TEQ)

Comment: Fact Sheet Section IV.D.4(6) "Interim Effluent Limitation" (p. F-40) and recent NPDES permits state that the interim limit for dioxin-TEQ "is established as a monthly average limit". However, Table 9 shows this limit as a maximum daily effluent limit.

Requested Change: In Table 9, Replace "Maximum Daily Effluent Limit" with "Average Monthly Effluent Limit".

Section IV.C.2.d. Receiving Water Ammonia Characterization Study

Comment: Extensive historic effluent and receiving water monitoring data show that there is no reasonable potential for ammonia. The District therefore believes there is no need for the proposed Receiving Water Ammonia Characterization Study

The District has been collecting monthly effluent and receiving water ammonia data for over 20 years. The RWB reviewed effluent and receiving water ammonia data from January 1, 2004 through April 30, 2009 and used it to conduct the Reasonable Potential Analysis (RPA) documented in the Fact Sheet (pages F-28 – F-31). This was a very conservative RPA using the USEPA Technical Support Document (TSD) approach since it assumed zero dilution in the calculations. Even so, the RPA results found that there was no Reasonable Potential (RP) based on either the effluent or receiving water data. The RP results were all well below the Basin Plan unionized ammonia objectives of 0.16 mg/L (maximum) and 0.025 mg/L (annual median).

Normally, when there is no RP for a constituent there is no requirement for an effluent limit for that constituent in the permit. The Fact Sheet (p. F-19) provides the following rationale for the proposed limits:

> "The monthly average limit for the month of May is retained from the previous permit. In addition, this Order includes new performance-based ammonia effluent limits for the wet season, November through April. The new performance-based effluent limits are intended to ensure that the Discharger maintains its Plant's existing ammonia removal performance and that current ammonia conditions are maintained in the receiving water."

While the need for any wet season ammonia limits is arguable, the proposed limits are not a significant concern to the District. However, given the long history of effluent and receiving water ammonia monitoring, and the absence of RP based on that monitoring data, there is no demonstrated need, or rationale, for investing in an extensive receiving water ammonia characterization study and other actions as proposed in Table 10. The Fact Sheet (page F-48) states only that "staff may use the data to examine whether the receiving water meets applicable ammonia objectives."

> "**d. Receiving Water Ammonia Characterization Study.** This Order requires a study on Miller Creek focusing on ammonia. It will generate information for the Regional Water Board to evaluate ammonia and un-ionized ammonia levels in the receiving water. Regional Water Board staff may use the data to examine whether the receiving water meets applicable ammonia objectives. The Discharger may also be able to use this information to propose an appropriate dilution credit for the ammonia effluent limit calculation for the next permit reissuance. If monitoring data show that ammonia WQOs are exceeded in the receiving water, the permit may be reopened to include WQBELs for ammonia".

Historic effluent ammonia concentrations have been quite consistent and there is no reason to expect that treatment performance will degrade, and for concentrations to increase in the future. Ongoing process control modifications will likely result in incremental reductions in effluent ammonia concentrations. Therefore, there is no basis for assuming that consistent compliance with receiving water objectives would not continue into the future.

Receiving water monitoring is conducted and compliance with the receiving water unionized ammonia objectives evaluated at a point 20-feet downstream from the effluent discharge point. Miller Creek is a significantly tidally influenced creek, even at this location approximately one mile upstream from San Pablo Bay. Miller Creek is a relatively narrow, generally trapezoidal shaped watercourse with limited access due to extensive vegetation and mudflats along each shore. Water depths range from several inches at low tide to several feet at high tide. Sampling at locations other than the established receiving water monitoring points (which have piers) and the bridge located 3000 ft downstream is difficult because of the limited access. Results are highly dependent on the tidal stage at the time of sampling which impacts the amount of San Pablo Bay water present.

If Miller Creek is in compliance with the unionized ammonia objectives (as it s as documented in the Fact Sheet) at a point only 20-feet downstream of the discharge, it is difficult to come up with a credible hypothesis as to why it would not remain in compliance as the flow continues downstream to San Pablo Bay. In its analysis of its shallow water discharge, the City of Palo Alto observed that while ambient pH may be higher than the effluent pH, in the unionized ammonia calculations this is

offset by the increasing amount of Bay water dilution that occurs the further the flow moves away from the discharge point.

With respect to the need for a dilution study, the District may on its own elect to conduct a receiving water mixing/dilution study as the need arises. In the meantime, the District would prefer to direct its resources to higher priority needs, such as ongoing treatment plant and collection system improvements. If and when new ammonia objectives were to be adopted, the District would promptly evaluate the potential compliance implications. Given the typical lengthy noticing, public comment, and approval process for new objectives, there would appear to be adequate time to proactively conduct the necessary evaluation and study.

Requested Change: Given the above information and analysis, and the fact that the permit MRP already requires continued monthly effluent and receiving water ammonia monitoring, the District respectfully requests that Permit Provision VI.C.2.d Receiving Water Ammonia Characterization Study Tasks and Schedule be removed from the permit.

Section VI.C.2.e Freshwater Marsh/Wildlife Pond and Reclamation Storage Pond Operation

Correction: "The Discharger has constructed and maintains a freshwater marsh or wildlife pond and ~~four~~ two reclamation storage ponds. "

Comment: The permit has conflicting language regarding a 6 mgd limit on flow to the reclamation system. Finding 3 refers to this limit as applying to the storage pond, whereas Provision VI.C.2.e(1) refers to the wildlife ponds. The rationale behind this limit is unknown, and no such limit appears in the District's reclamation permit (Order 92-064). With one exception, all of the District's NPDES permits over the past 25 years have placed this limit on discharges to the wildlife pond. (The 1998 NPDES permit incorrectly referred to the storage ponds).

The flow limit may be tied to the earlier 5.8 mgd capacity limitation of the secondary treatment process, or possibly to a capacity limitation of the pipeline to the reclamation system. Because of process improvements, the secondary treatment capacity is now 8 mgd, and the capacity of the discharge line to the storage pond line has been increased by the addition of a booster pump. Therefore, at a minimum, this limitation should be raised to 8 mgd. Furthermore, because the 1998 NPDES permit extended the mandatory "no-discharge" season from August 31 to October 31, there is higher probability that flows could exceed 6 mgd (or 8 mgd) during a major early (e.g. October) wet weather event. Under those circumstances, and if storage pond capacity were available, it may be preferable to discharge to the storage ponds rather than to Miller Creek. (Per Section IV.C.4 of the permit, except for chlorine residual, such a discharge would still need to meet the strict NPDES effluent quality limits that would apply to a Miller Creek discharge). The District's suggested change is designed to maximize operational flexibility and environmental protection in responding to high flow conditions.

Requested Change: Delete the flow limitation for discharges to the storage ponds in Finding 3. The District takes no exception to imposing the flow restriction on discharges to the wildlife pond in Section VI.C.2.e(1), but requests that the provision be clarified as applying to the (singular) wildlife pond.

Comment: Rainwater that accumulates in the storage ponds over the wet season consumes capacity that may be needed to meet the prohibition on discharges during the dry season. The District requests authorization to discharge accumulated rainwater from the storage ponds to Miller Creek prior to each reclamation season, before commencing use of the ponds for effluent storage. If overall demand for reclamation increases in the future, the need for such discharges could decline.

Requested Change: Add the following as Section VI.C.2e(4): "Rainwater accumulated in the Storage Ponds over the wet season may be discharged to Miller Creek prior to using the ponds for effluent storage."

Section VI.C.2.f and Fact Sheet Section VII.C.2.f Storage Pond Discharge Characterization Study

Comment: Several possible reclamation projects are now in various stages of planning by the North Bay Water Reuse Authority and the Marin Municipal Water District. If these projects go forward, the additional recycled water demand, alone or in combination with return of surplus storage pond water to the plant, may obviate the need for direct discharge from the storage pond to Miller Creek at the end of the reclamation season. The District requests that the requirement for this study be dropped <u>if</u> an analysis of the storage pond water balance indicates that future discharges from the storage ponds can be eliminated by the next permit cycle.

Requested Change: Add to end of Section: "In lieu of conducting this study, the Discharger may, at its option, submit an analysis acceptable to Executive Officer that demonstrates that future "end of reclamation season" discharges from the Storage Ponds can be eliminated through increased reclamation demand and/or returning surplus storage pond water through the treatment plan. The analysis shall be submitted by April 1, 2011.

Section VI.C.2.h Special Study to Examine Relationship Between TSS/BOD and other Toxic Pollutants for Reduced Sampling During Blending (Optional)

Comment: The District believes that additional studies by the District or by other secondary treatment plants that blend are unnecessary to justify the use TSS as a trigger for additional pollutant analysis during blending events. The District notes that the Novato Sanitary District (NSD) WWTP, at that time of its blending study, employed a treatment scheme very similar to the District's. Therefore, the positive and quite extensive study results (eight blending events sampled) from the NSD study serve as an excellent proxy for results during blending event at Las Gallinas.

The results from the five POTWs in BACWA and NSD studies indicate that TSS is the most reliable and practical indicator of plant performance during blending events. TSS was found to be a reasonably sensitive indicator of flow, degree of blending, and pollutant metals present in the blended final effluent. A TSS value of 45 mg/L was determined to be a reasonably conservative value to use to trigger analysis of other required and feasibly monitored constituents. When TSS was less than 45 mg/L, effluent metals concentrations remained conservatively in compliance during the range of blending events evaluated, at levels of typically only 20 – 40% of permit effluent limits.

Requested Change: Given the weight of evidence supporting the use of a 45 mg/L TSS trigger for blending events, it appears unnecessary and unreasonable for the District to perform a redundant study to again demonstrate that TSS is an appropriate monitoring indicator during blending events.

The District requests that permit Provision VI.C.2.h *Special Study to Examine Relationship Between TSS/BOD and Other Toxic Pollutants for Reduced Sampling During Blending* be deleted.

In connection with this request, the District requests that the following new language be added to the MRP (page E-11) Section IX. Other Monitoring Requirements:

> "Attachment E (MRP) IX.C. Blending Monitoring Requirements
>
> "The Discharger shall collect grab and composite samples at E-001 during any day (or portion thereof) when blending occurs. Grab samples shall be collected during the blending event. Composite samples shall be collected over the normal 24-hr sampling period that includes the blending event. The composite sample shall be analyzed for TSS. If the resulting TSS value exceeds 45 mg/L, the Discharger shall analyze the samples for all constituents that have effluent limits, with the exception of acute toxicity and dioxin-TEQ. All results shall be reported in the Discharger's monthly monitoring report, along with any permit-specified information regarding the blending event. If a blending event occurs on a day that has been scheduled for routine MRP sampling and analysis, the scheduled analyses shall be completed without regard for the TSS trigger."

Section VI.C.2.h Special Study to Examine Discharge Impacts on Receiving Water Temperature

Comment: The RPA conducted for temperature and the resultant conclusion of the need for a Miller Creek Temperature Study are based on flawed assumptions about the effect of tidal influence on Miller Creek.

The Basin Plan lists Miller Creek as supporting the cold water habitat beneficial use; therefore, specific temperature objectives apply to at least some portions of Miller Creek. However, as discussed above regarding the proposed receiving water ammonia study, Miller is subject to significant tidal influence, with depths varying from several inches at low tide to several feet at high tide.

The upstream Miller Creek receiving water station, while physically 1,000 upstream of the discharge location, is also reached and impacted by San Pablo Bay water during higher tidal stages. Review of salinity data collected during the required monthly receiving water monitoring shows this variability due to tidal stage, with values over 10,000 ppt having been recorded at the upstream station. The Fact Sheet (page F-24) notes that the RMP station located in the San Pablo Bay is the far field background station whose data were used as background data in performing the RPA for this discharge. Given the circumstances in Miller Creek, this may be a more appropriate station to consider using.

Regional Water Board staff analyzed whether there is any reasonable potential that Miller Creek would exceed the Basin Plan and Thermal Plan temperature objectives. The Fact Sheet (page F-31) stated that "Since Miller Creek may be influenced by tidal action near the outfall (or nearby downstream), these estuarine {Thermal Plan} objectives may apply." Miller Creek is clearly influenced by tidal action.

The Fact Sheet (F-31) also states that "The condition at the upstream receiving water station was deemed to represent the natural background condition." Again, during low tide conditions this is

likely to be true. However during higher tidal stages this "background" station can be actually representing a combination of farfield upstream (i.e. watershed) water quality plus variable fractions of effluent and San Pablo Bay water. Given these circumstances, it is not clear that it is technically valid to perform a RPA comparing temperatures at this station 1000-feet upstream from the discharge with those at the other receiving water station 20-feet downstream of the discharge. It would seem that the impact of the inflowing San Pablo Bay water would overwhelm the potential impact of the effluent on temperature at the downstream location and confound the results of such a comparison at the upstream station.

Given this situation, it is not surprising that the RPA conducted as described, was inconclusive. The Fact Sheet (page F-32) states that:

> "However, there were cases when the downstream receiving water temperature was more than 4°F above the upstream receiving water temperature (the maximum difference was 7.7°F). Because Miller Creek at the location of the discharge outfall is approximately one mile from the mouth of San Pablo Bay, the receiving waters may be affected by high tides from San Pablo Bay. It is unclear whether the temperature elevation in these cases was caused by the discharge or San Pablo Bay water."

As noted above, depending on the timing of sampling relative to tidal stage, the receiving waters will clearly be affected by inflow from San Pablo Bay. Furthermore, it is not clear that the proposed Miller Creek Temperature Study would be able to conclusively resolve this issue even with a significant expenditure of public funds. On a practical level, the District has no control over the temperature of its discharge. Since the discharge only occurs during the colder months, it would be expected to occur during times when there is the least concern about elevated ambient temperatures due to natural conditions.

Requested Change: It would appear that the proposed study focused on effluent and receiving water temperatures to examine whether the discharge could cause or contribute to a 4°F incremental temperature objective being exceeded in Miller Creek will be difficult to successfully conduct. The District respectfully requests that Permit Provision VI.C.2.I Special Study to Examine Discharge Impacts on Receiving Water Temperature be deleted from the permit.

Section VI.C.4.b and c. O&M Reliability Status Report, Contingency Status Report

Comment: The District requests that the Annual Status Reports for these documents be changed to June 30, so as to spread the workload for preparing the numerous plant reports more evenly over the year.

Requested Change: Revise wording in subparagraph (3) of each section as follows:

> "(3) The Discharger shall provide the Executive Officer, upon request ….. The Discharger shall also submit, by June 30 of each year ~~include, in each annual self-monitoring report,~~ a description or summary of review and evaluation procedures and applicable changes to-…"

Section VI.C.4.d Reliability Status Report

Comment: This section contains two different delivery dates for the Reliability Report status update. The District requests that this conflict be eliminated, and that the submittal date for this status report

be shifted to June 30, so as to spread the workload for preparing the numerous plant reports more evenly over the year.

Requested Change: Revise date in first paragraph as follows:

As part of reviewing requests for exceptions to the Basin Plan discharge Prohibition 1, the Regional Water Board staff will evaluate the reliability of the Discharger's system in preventing inadequately treated wastewater from being discharged into the receiving waters. The Discharger shall submit an annual ~~February 28~~ June 30 each year. The Reliability Status Report shall be updated as necessary.

Requested Change: Revise wording in subparagraph (3) as follows:

"(3) The Discharger shall provide the Executive Officer, upon request, a summary 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~~."

Section VI.C.4.e Corrective Measures to Minimize Blending

Comment: The District's No Feasible Alternative Analysis identified several potential long-term facility modifications, and noted that the improvements were at the conceptual design stage. While a number of the improvements described in the NFAA have been or are in the process of being implemented, the engineering feasibility and effectiveness of the 1 MG equalization basin is still being evaluated.

In addition, the District has continued the evaluation of secondary treatment improvements for increased capacity described in the NFAA, and taking into consideration all factors involved, has revised the target secondary treatment flow to 17.2 MGD. (If achieved, this target, in combination with other actions would result in a very significant decrease in blending events). Finally, the District requests that reference to C-MOM Program be tied to the District's Sanitary Sewer Management Plan.

Requested change: Revise Table 14, section 1, 2nd and 3rd bullets as follows:

- "Continue to implement short-term operational modifications to increase flow that receives secondary treatment to 8 MGD; identify and implement long-term facility modifications, which may include a 1 MG flow equalization basin, to maximize flow that receives secondary treatment to ~~26~~ 17.2 MGD; reduce stormwater flow directed to the headworks of the Plant.
- "Implement the Capacity, Management, Operations, and Maintenance (C-MOM) Program as described in the District's Sanitary Sewer Management Plan (SSMP)."

Section VI.C.5.a(1) Biosolids Management Practices Requirements

Comment: The District's on-site biosolids management system is more accurately described as a "dedicated disposal site" as opposed to a "sludge-only landfill".

Requested Change: Revise wording as follows:

"a. 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 program, reused by land application, or disposed of in a ~~sludge-only landfill~~ dedicated disposal site in accordance with 40 CFR 503. …"

Section VI.C.6.a Table 15 Copper Action Plan

Requested Change: For consistency with the Copper Action Plan requirements in all recently issued permits in this region, revise wording of item (1) as follows: "The Discharger shall submit an inventory of ~~all~~ potential copper sources to the treatment plant."

Section VI.C.6.b Table 16 Cyanide Action Plan

Correction:

(1) Review Potential Cyanide Contributors
The Discharger shall submit an inventory of potential contributors of cyanide to the treatment plant (e.g., metal plating operations, hazardous waste recycling, etc.). If no contributors of cyanide are identified, Tasks ~~b~~ (1) and ~~c~~ (2) 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).

Section VI.C.6.c Table 17 Dioxin-TEQ Action Plan

Delete redundant sentence:

(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~~.

Attachment E (MRP) II, Table E-2 Monitoring Locations

Requested Change: Under "Description of Monitoring Location EFF-002"
"At a point near the outlet of the storage pond to Miller Creek or directly from the outlet line."

Correction: Under "Description of Monitoring Location RSW-002",
"At a point in Miller Creek within 1000 feet upstream of Discharge Point ~~002~~ 001and representative of background water quality, formerly C-3."

Attachment E (MRP) IV.A. Monitoring Locations EFF-001 and EFF-001-D.

Comment: Table E-4 does not address effluent monitoring applicable during the month of May if the plant were discharging to Miller Creek

Requested Change: For consistency with the Permit Section IV.A and to avoid the need for a redundant table that would apply only to the dry season month of May, add the following wording to the paragraph above Table E-4:

"The Discharger shall monitor treated wastewater during wet seasons (November 1 – May 1) and during the dry season month of May (if discharging to Miller Creek) at EFF-001 (for dechlorinated effluent) or EFF-001D (for non-dechlorinated effluent) as follows."

Comment: Section IV.A.4 of the permit specifies effluent limitation for enterococcus, expressed in units of CFU/100 ml. The Enterolert method is EPA approved for wastewater effluent, and is used by most dischargers to demonstrate compliance with enterococcus bacteria limitations. However, the Enterolert results are in units of MPN/100 ml, which are technically not CFU units, but which provide a statistical estimate of CFUs.

Requested Change: Revise the enterococcus reporting units in Table E-4 to MPN/100, as in other recently reissued NPDES permits. Add a footnote to Table E-4 that allows use of Enteroalert results to demonstrate compliance with the enterococcus bacteria effluent limit.

Attachment E (MRP) V.B.1.e Chronic Toxicity Dilution Series

Comment: The Mysid (shrimp) chronic toxicity test requires that the effluent sample before testing be "salted up" to a salinity of approximately 25 ppt. This has the unavoidable side effect of raising the typical effluent pH, which may contribute to artifactual toxicity if ammonia or other pH-dependent toxicants are present. EPA Mysid test Method 1007.0 therefore allows the regulatory authority may allow for control of sample pH during testing using procedures.

Requested Change: Add wording that provides the option for pH adjustment:

> "The Discharger shall conduct tests with a control and five effluent concentrations at 100%, 85%, 70%, 50%, and 25%. The "%" represents percent effluent as discharged. Test sample pH in each dilution in the series may be controlled to the level of the effluent sample as received prior to being salted up."

MRP Appendix E-1.II.B.2.b. **Chronic Toxicity Screening Phase Requirements**

Comment: In the past, the results of screening test have also been used to demonstrate compliance with routine chronic toxicity requirements. The permit specifies quarterly routine monitoring.

Requested Change: Amend wording so that screening test results can also be used to meet compliance requirements to the extent possible: "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 Stage1 test results and as approved by the Executive Officer.

MRP Appendix E-1.II.B.5.

Comment: The 0% dilution is equivalent to the control, and is normally not specified in the chronic toxicity dilution series.

Requested Change; For clarity and consistency, delete "0%" from specified dilution series

Fact Sheet II.A.1 and II.A.2 (Facility Description)

See requested changes above for Facility Description finding (Section II.B.1 of Permit)

Fact Sheet IV.A.2. (last paragraph on page F-14)

Comment: The District believes that I&I reduction is an essential element of its overall wet weather flow management strategy. The District's I&I Reduction Program has been described in the annual Collection System Improvement Reports and the NFAA. The District requests that its I&I reduction efforts be acknowledged.

Requested Change: Add the following wording:

> "On June 2, 2008, the Discharger submitted a No Feasible Alternatives Analysis that addresses measures it has taken and plans to take to reduce and eliminate bypasses during wet weather events so that such bypasses can be approved under 40 CFR 122.41(m)(4). The District maintains an aggressive I&I reduction program to reduce peak wet weather flows to the

treatment plant. During the term of the previous permit, the Discharger has completed the Headworks, Electrical, and SCADA Improvements Project, and has analyzed plant process configuration …"

Fact Sheet IV.A.2. (second paragraph on page F-15)

Comment: The District's NFAA described a conceptual plan that included all of the components listed in this paragraph. As a result of further engineering analysis by the District since completion of NFAA in May 2008, the District's target for secondary treatment capacity has been revised to 17.2 mgd, primarily because the additional equipment to serve as supplemental secondary clarifiers appears less feasible than originally believed, and may not be necessary or necessary if the other flow control and I&I reduction measures identified in the NFAA are implemented.

Requested Change: Revise paragraph as follows:

Proposed long-term modifications would involve changes to Plant piping to direct a greater flow through the secondary process; reconfiguration of the biofilter and fixed film reactor to allow operations in parallel; provision for chemical feed at the existing secondary clarifier; ~~addition of equipment to serve as supplemental secondary clarifiers~~; reconfiguration of the filters to provide alternative secondary clarification; and additional flow meter, control, and SCADA improvements. These proposed long term modifications, which are still in the design phase, would increase full secondary treatment flow to 17.2 ~~26~~ MGD during peak wet weather conditions. At the same time, the District's ongoing I&I reduction program is expected to reduce peak wet weather flows to the treatment plant.

Fact Sheet IV.D.3.d RPA Determination for Priority Pollutants (p F-25)

Correction: "Copper, mercury, selenium, cyanide, and dioxin-TEQ, ~~and total ammonia~~ exhibit reasonable potential by Trigger 1; lead and nickel exhibit reasonable potential by Trigger 2."

Sincerely,

Martha Pierce, Plant Manager
for,
Mark R. Williams
General Manager

Attachment A: August 27, 2009 letter from Pacific Ecorisk Laboratory
Attachment B: Revised plant flow schematic for flows > 8 mgd.

Cc: Board of Directors, LGVSD

Katerina Capetanos
Environmental Services Director
Las Gallinas Valley Sanitary District
300 Smith Ranch Road
San Rafael, CA 94903

August 27, 2009

Dear Katerina:

I am writing you to express my concern regarding revised language in your new draft NPDES permit that would change the calculation of chronic toxicity Toxic Units (TUc) from 100/EC_{25} (or 100/IC_{25}) to 100/NOEC. In my professional opinion as a scientist working in the field of aquatic ecotoxicology for the past 20+ years, this would be a step backwards in terms of scientific rationale, as well as from the regulatory perspective. I have prepared below a brief discussion of the scientific rationale as to why the NOEC is no longer considered appropriate for regulatory compliance purposes, and why the EC and IC point estimations are the much better alternative.

Calculation of Toxic Units (TU): NOEC vs. EC_{25} and IC_{25} Point Estimates

The No Observed Effect Concentration (NOEC) is a measure of toxicity that is often used for regulatory purposes (i.e., calculation of Toxic Units [TUs], where TU = 100/NOEC). Determination of the NOEC is based upon statistical comparisons of test treatments with a Control treatment to determine if there is a statistically significant reduction at the test treatment relative to the Control. Recognized problems with the use of the NOEC as a regulatory benchmark include:

1. The typical NPDES chronic WET test consists of the evaluation of 5 or 6 specific effluent concentrations that are generally arbitrarily decided upon (e.g., the *a priori* decision to use 5%, 10%, 25%, 50%, and 100% effluent as the test treatments). As a result, and by definition, the NOEC will almost never accurately identify the actual effluent concentration at which there is "no effect", but rather will be limited to the identification of the highest test treatment at which there is no effect. For instance, in the example test concentrations described above, it would be possible to have a slight but statistically significant effect at the 100% concentration for an effluent sample that would have no significant effect at the 90% effluent concentration. However, since the next highest test treatment is 50% effluent, the NOEC will be 50% effluent, and not the true no effect concentration of 90% effluent.

- In contrast, point estimates (e.g., the Effect Concentration (EC) and Inhibition Concentration (IC) point estimates) are empirically-derived estimates of the actual effluent concentration at which some magnitude of response occurs. For instance, the algal IC_{25} would be the effluent concentration at which there is expected to be a 25% reduction in algal cell density. The EC_{25} and IC_{25} can therefore be used to establish a regulatory limit based upon the degree of response that is determined to be acceptable by the regulatory agency (e.g., the EC_{25} and IC_{25} are the basis used for calculation of Toxic Units (TU) in by the San Francisco Bay Regional Water Quality Control Board).

2. The potential NOECs are limited to the test concentrations being tested. If the test concentrations are not specified, then the concentrations used by various labs may differ, hence resulting in different NOECs due strictly to lab practice and not effluent variability.

    - In contrast, the EC and IC point estimates are independent of the test concentrations used.

3. The statistical methods for determining NOECs are limited to using only the data for the Control treatment and the effluent treatment in question. None of the other test data are used in that statistical comparison. As result, none of the other relevant test data information that helps characterize concentration-response, etc., are being used.

    - In contrast, the calculation of the EC and IC point estimate use all of the test data to empirically model the concentration-response curve from which the point estimates are derived.

4. The statistical calculation of the NOEC is strongly determined by the inter-replicate variability that is achieved by the testing lab. Statistical power (i.e., the ability to detect "significant" differences between test treatments) is a direct function of inter-replicate variability: the lower the variability, the more powerful the statistics, and the greater ability to identify an increasingly smaller difference between treatments as being "significant". As a result, for a given effluent sample, the NOEC could be expected to vary from lab to lab (or from test to test), depending upon each lab's ability to achieve precision in each test.

    - In contrast, the role of inter-replicate variability in concentration-response modeling is limited to the determination of the confidence limits - the determination of an EC or IC point estimate is relatively independent of inter-replicate variability.

Conclusion:

The NOEC is a statistical benchmark that is easy to calculate and easy to understand, and it has a long history of regulatory usage for just these reasons. However, almost all scientists agree that there are serious problems with usage of NOECs in interpretation of toxicity tests, and that a regression-based approach such as used in the EC and IC point estimation is a better alternative. Indeed, regulatory programs that have conducted serious workshops and overhauls of their statistical methodologies have abandoned the NOEC and have adopted the regression-based approach (OECD 1998).

The Regional Board's current language in your draft NPDES permit is clearly a step backwards in terms of scientific rationale, and I encourage you to bring this issue to their attention for potential revision. If you have any questions or if you would like to discuss this further, please give me a call at 707-207-7762.

Sincerely,

R. Scott Ogle, Ph.D.

Supporting References:
(in chronological order)

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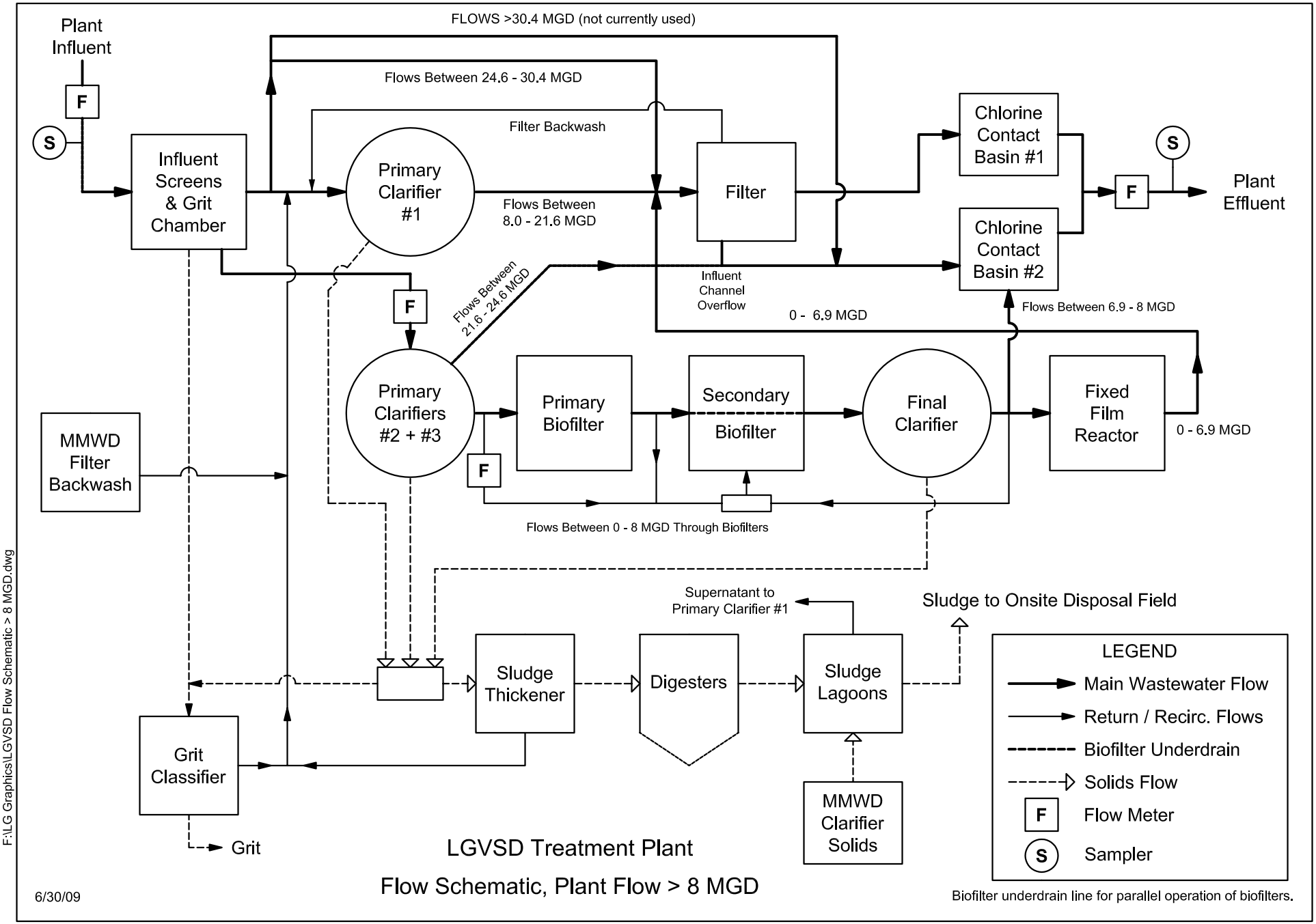
Mallett MJ, Grandy NJ, Lacey RF (1997) Interlaboratory comparison of a method to evaluate the effects of chemicals on fish growth. Environmental Toxicology and Chemistry 16(3):528-533.

OECD (1998) Report of the OECD workshop on statistical analysis of aquatic toxicity data. OECD Series on Testing and Assessment Number 10, Organisation for Economic Co-operation and Development, Paris, France.

Crane M, Newman MC (2000) What level of effect is a no observed effect? Environmental Toxicology and Chemistry 19(2):516-519.


Plant Influent
F
S
Influent Screens & Grit Chamber
FLOWS >30.4 MGD (not currently used)
Flows Between 24.6 - 30.4 MGD
Filter Backwash
Primary Clarifier #1
Flows Between 8.0 - 21.6 MGD
Filter
Chlorine Contact Basin #1
Chlorine Contact Basin #2
S
F
Plant Effluent
Influent Channel Overflow
0 - 6.9 MGD
Flows Between 6.9 - 8 MGD
F
Flows Between 21.6 - 24.6 MGD
Primary Clarifiers #2 + #3
Primary Biofilter
Secondary Biofilter
Final Clarifier
Fixed Film Reactor
0 - 6.9 MGD
MMWD Filter Backwash
F
Flows Between 0 - 8 MGD Through Biofilters
Supernatant to Primary Clarifier #1
Sludge to Onsite Disposal Field
Sludge Thickener
Digesters
Sludge Lagoons
Grit Classifier
Grit
MMWD Clarifier Solids
LEGEND
Main Wastewater Flow
Return / Recirc. Flows
Biofilter Underdrain
Solids Flow
F Flow Meter
S Sampler
LGVSD Treatment Plant
Flow Schematic, Plant Flow > 8 MGD
6/30/09
Biofilter underdrain line for parallel operation of biofilters.
F:\LG Graphics\LGVSD Flow Schematic > 8 MGD.dwg

Bay Area Clean Water Agencies

A Joint Powers Public Agency

P.O. Box 24055, MS 702
Oakland, California 94623

August 31, 2009

VIA EMAIL: tyin@waterboards.ca.gov, bwolfe@waterboards.ca.gov, ltang@waterboards,ca.gov, wjohnson@waterboards.ca.gov

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 Las Gallinas Valley Sanitary District NPDES Permit (CA0037851)

Dear Ms. Yin:

The Bay Area Clean Water Agencies (BACWA) appreciate the opportunity to comment on the Tentative Order (TO) for the Las Gallinas Valley Sanitary District (LVGSD), as well as make comments on policy issues related to the NPDES permit. 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 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 LGVSD. Further, in order to avoid repetition, but to preserve these arguments, BACWA supports and incorporates by reference the comments made by the LGVSD 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 given the current state of technology. Dioxin-TEQ at these low levels cannot be measured. 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 IV.C.6.d., Table 13) is neither realistic nor commensurate with actual water quality impacts, and overly burdensome.

Based on current understanding of the sources and controllability of dioxin, 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. 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 appear to be no plans in place. Until such a program is developed with a feasible implementation strategy, this is not a realistic alternative, and it is misleading to expect that such a program would lead to compliance.

3. The proposed Receiving Water Ammonia Characterization Study Tasks and Schedule in Provision VI.C.2.d should be removed from the permit.

Existing effluent and receiving water ammonia data for LGVSD clearly demonstrate that the receiving water is fully and conservatively in compliance with Basin Plan receiving water unionized ammonia objectives. Continued routine effluent and receiving water monitoring, as required by the Monitoring and Reporting Program (MRP), is sufficient to document future compliance status. Therefore, an extensive new receiving water study to show continued ammonia compliance is overly burdensome.

4. BACWA requests that notification requirements for unauthorized discharges from municipal wastewater treatment plants have a threshold of 1,000 gallons and a deadline of 4 hours (Attachment G, section V.E.2.).

The proposed Attachment G language requires that wastewater treatment plants notify State and local agencies not later than two (2) hours after becoming aware of a discharge to a drainage channel or a surface water. This is the same requirement that was placed on sanitary sewer collection systems via State Water Board Order No. 2006-0003-DWQ.

BACWA urges two modifications to this blanket reporting requirement because it can impose a difficult operational burden on wastewater treatment plants and, at the same time, ignores important differences between collection systems and treatment plants:

- Unlike collection systems, most of the potential spills at wastewater treatment plants will be partially treated or treated process waters, rather than raw sewage.

- Unlike collection systems, treatment plants tend to be in isolated areas and are designed to either contain spills or direct them away from areas that could impact public health.
- Unlike collection systems, wastewater treatment plants are often staffed 24-hours with personnel trained to detect, stop, contain, and cleanup spills as soon as they are detected.

1,000 Gallon Threshold: Unauthorized discharges from wastewater treatment plants are uncommon events. However, the requirement to report all unauthorized discharges (theoretically as small as one drop) to State and local agencies within two hours after discovery diverts the attention of response staff at the time they are most needed to troubleshoot the problem and stop the discharge. Since the purpose of the reporting is to assure timely and proper notification to protect public health and the environment, there should be a common-sense threshold. A reporting threshold of 1,000 gallons for unauthorized discharges from wastewater treatment plants is established in Section 2250(a), Title 23 CCR. Continued application of this threshold will: enable Dischargers to physically respond to, and clean up, insignificant spills in a timely manner; reduce reporting and collection of data for small wastewater process spills that have no potential to impact water quality or human health; and, still continue to provide for timely notification of unauthorized discharges that could potentially impact water quality or human health.

4-Hour Reporting: If an unauthorized discharge occurs at a wastewater treatment plant, it will likely be detected very quickly. At that point, the urgent mission for available staff is to isolate and stop the flow. The current 2-hour reporting limit does not give sufficient time to both a) investigate and respond to a suspected spill, and b) report confirmed or unconfirmed suspicions to state and local agencies. A four (4) hour reporting limit gives much needed time to investigate and respond to a potential emergency. Within a 4-hour window additional staff can be called in to assist with reporting while on-duty staff works to stop the discharge and clean up the spill. Extending the reporting deadline by an additional two hours allows for considerably more operational flexibility while at the same time will most likely not result in significantly different exposure risk to the public if the notification occurs up to 4 hours after the event is identified.

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,

David W. Tucker
BACWA Executive Board Chair

cc: BACWA Executive Board
James Ervin, BACWA Permits Committee Chair
Bruce Wolfe, Regional Water Board
Lila Tang, Regional Water Board
Bill Johnson, Regional Water Board

APPENDIX D

RESPONSE TO COMMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Response to Written Comments
on August 2009 Draft NPDES Permit and Cease and Desist Order for
Las Gallinas Valley Sanitation District and Collection System
Mill Valley, Marin County

The Regional Water Board received written comments on a tentative permit and a tentative cease and desist order distributed for public comment from the following parties:

1. Las Gallinas Valley Sanitation District, dated August 31, 2009
2. Bay Area Clean Water Agencies, dated August 31, 2009

This response to those comments summarizes each comment in *italics* (often quoted and sometimes paraphrased for brevity) followed by the Regional Water Board staff response. For the full context and content of each comment, refer to the comment letters. In addition to the revisions to the tentative permit, staff also revised the tentative permit to correct typographical errors based on the District's comments.

LAS GALLINAS VALLEY SANITATION DISTRICT (DISTRICT)

District Comment No. 1.
Hearing Date: *The District requested that the permit hearing date be postponed by one month to the Water Board's November 2009 meeting because of a conflict with the WEFTEC Conference.*

Response to District Comment No. 1. We are maintaining our publicly noticed schedule for the hearing. Since we have resolved most significant issues addressed in the District's comments, and because the District has verbally indicated it is unlikely to contest this permit when the Board considers it, there is no need to alter the schedule.

District Comment No. 2.
The District requested to revise findings in the tentative permit and fact sheet to correctly describe discharge locations and facility processes.

Table 2. Discharge Location and Table F-2 (Fact Sheet).
Requested Change: Minor correction to discharge lat/long coordinates:
Location 001 – latitude 38º 01' 31" N, longitude 122º 31' 1" W
Location 002 – latitude 38º 01' 37" N, longitude 122º 30' 48" W

Table 4. Facility Information, Service Areas
Requested Changes:
Facility Contact: Mark Williams, <u>General</u> Manager~~/Chief Operator~~
Service Area: City of San Rafael (northern area) <u>and portions of county</u>.

Section II.B.1 Facility Description. *The District requested to revise the finding to clarify the plant primary sedimentation process.*

Section II.B.2. Discharge Description. *The District requested to revise the average dry weather flow to be 2.15 MGD based on July-September 2008 flows.*

Section II.B.5. Biosolids Management. *The District requested to revise the finding to more accurately reflect the process.*

Section II.B. Facility Description (final paragraph). *The District requested to include an updated flow schematic diagram.*

Response to District Comment No. 2. We revised the tentative permit and Fact Sheet as requested.

District Comment No. 3.
Section III.C Discharge Prohibitions. *"This paragraph acknowledges that discharges to Miller Creek may be necessary under unusual conditions such as late spring or early fall storms. The District is concerned that the process described for securing Executive Officer approval for such discharges may be impractical, given that it is very difficult to predict in advance the impact on treatment plant flow of a unseasonable storm event, and that the process for requesting (with supporting calculations) and securing EO approval could take longer than the actual storm event, particularly if a weekend is involved. The District requests that more flexible language be incorporated into the prohibition for discharges related to unseasonable storm events." Therefore, the District requested to revise the prohibition to allow emergency discharges to occur at the District's discretion and to report the discharge after they occur in self-monitoring reports.*

Response to District Comment No. 3. We made some revisions in response to this comment. This prohibition language is consistent with all other shallow water discharge permits in our region. For anticipated emergency discharges as a result of storage pond maintenance, levee repair, etc., dischargers are expected to predict the need for an emergency discharge before it occurs. Therefore, a formal request and subsequent Executive Officer approval is still required. However, we revised the prohibition to allow the District to notify the Regional Water Board's case manager and exercise its discretion when an emergency discharge is needed due to heavy storms. A timely report is required following the discharge in addition to reporting it in the monthly self-monitoring report.

District Comment No. 4.
"The District objects to the inclusion of final numeric limits for dioxin-TEQ, for reasons expressed in comments submitted by the Bay Area Clean Water Agencies (BACWA) for this and other recent NPDES Tentative Orders. The BACWA comments are incorporated by reference in this comment letter."

Response to District Comment No. 4. See our response to BACWA comment No. 2.

District Comment No. 5.
Section IV.B.3.b. Whole Effluent Chronic Toxicity. *The District requested to revise the compliance definition of chronic toxicity units (TUc) to be consistent with the previous definition (i.e. 100/ NOEL where NOEL is reported as the IC_{25} or EC_{25}).*

Response to District Comment No. 5. We agree. We revised the tentative permit as requested.

District Comment No. 6.
Section IV.B.4. Table 9 Interim Effluent Limits (Dioxin-TEQ).
The District requested to replace "Maximum Daily Effluent Limit" with "Average Monthly Effluent Limit" in Table 9 to be consistent with Fact Sheet Section IV.D.4(6) (p. F-40) and other recent NPDES permits.

Response to District Comment No. 6. We agree. We revised the tentative permit as requested.

District Comment No. 7.
Section IV.C.2.d. Receiving Water Ammonia Characterization Study. *The District contended that historic effluent and receiving water monitoring data show that there is no reasonable potential for ammonia. The District therefore believes there is no need for the proposed Receiving Water Ammonia Characterization Study. The District requested that this study be removed from the tentative permit.*

Response to District Comment No. 7. We disagree. The no reasonable potential conclusion is based on available receiving water ammonia data. These ammonia data had been collected during high tides or at certain times during the day. However, ammonia concentrations in a water body within a high marsh area are known to exhibit diurnal variations. The highest ammonia concentrations are usually observed when tides start to ebb and when water in the marsh enters the water body, especially at late afternoon, when pH is the highest. Available data do not address diurnal variations. This study is necessary to gather additional information to fully characterize ammonia concentrations in Miller Creek.

Nevertheless, we revised the study requirements to provide more flexibility for the District. For example, we did not specify the length of the study or the sampling locations; we did not require a dilution analysis associated with the study, etc. We left these matters for the District to propose in its study plan.

District Comment No. 8.
Section VI.C.2.e Freshwater Marsh/Wildlife Pond and Reclamation Storage Pond Operation.
(a) *The District contended that the permit has conflicting language regarding a 6 mgd limit on flow to the reclamation system. Finding 3 refers to this limit as applying to the storage ponds, whereas Provision VI.C.2.e(1) refers to the wildlife pond. According to the District, the flow limit may be tied to the earlier 5.8 mgd capacity limitation of the secondary treatment process, or possibly to a capacity limitation of the pipeline to the reclamation system. Because of process improvements, the secondary treatment capacity is now 8 mgd, and the capacity of the discharge line to the storage pond line has been increased by the addition of a booster pump. Therefore, at a minimum, this limitation should be raised to 8 mgd. The District requested to delete the flow limitation for discharges to the storage ponds in Finding 3. The District requests that the provision be clarified as applying only to the wildlife pond.*

(b) *Rainwater that accumulates in the storage ponds over the wet season consumes capacity that may be needed to meet the prohibition on discharges during the dry season. The District requested authorization to discharge accumulated rainwater from the storage ponds to Miller Creek prior to each reclamation season before commencing use of the ponds for effluent storage. If overall demand for reclamation increases in the future, the need for such discharges could decline. The District requested to add the following as Section VI.C.2e(4): "Rainwater accumulated in the Storage Ponds over the wet season may be discharged to Miller Creek prior to using the ponds for effluent storage."*

Response to District Comment No. 8
(a)We revised the flow limit on the discharge to the wildlife pond to be that of the secondary treatment capacity. We deleted the sentence in Finding 3 to remove this flow limit on the discharge to storage ponds. However, we added one condition to Provision VI.C.2.e, which states that no discharge to the storage ponds is allowed when flows are above the secondary treatment capacity, if the effluent in the storage ponds will be used for reclamation. This will ensure that all water in the storage ponds used for reclamation has received full secondary treatment.

(b) We revised the tentative permit as requested because rain water accumulated in the ponds does not contact with wastewater, and is therefore, considered clean rainwater.

District Comment No. 9.
Section VI.C.2.f and Fact Sheet Section VII.C.2.f - Storage Pond Discharge Characterization Study. *The District requested to add to the end of the section: "In lieu of conducting this study, the Discharger may, at its option, submit an analysis acceptable to Executive Officer that demonstrates that future 'end of reclamation season' discharges from the Storage Ponds can be eliminated through increased reclamation demand and/or returning surplus storage pond water through the treatment plant. The analysis shall be submitted by April 1, 2011."*

Response to District Comment No. 9. We agree. We revised the tentative permit as requested.

District Comment No. 10.
Section VI.C.2.h Special Study to Examine Relationship Between TSS/BOD and other Toxic Pollutants for Reduced Sampling During Blending (Optional). *The District believes that the results from five BACWA POTWs and the Novato Sanitation District's studies indicate that TSS is a reliable and practical indicator of plant performance during blending events. In these studies, a TSS value of 45 mg/L was determined to be a reasonably conservative value to use to trigger analysis of other required and feasibly monitored constituents. When TSS was less than 45 mg/L, effluent metals concentrations remained conservatively in compliance during the range of blending events evaluated, at levels of typically only 20 – 40% of permit effluent limits. Therefore, it appears unnecessary and unreasonable for the District to perform a redundant study to again demonstrate that TSS is an appropriate monitoring indicator during blending events. The District requested that permit Provision VI.C.2.h (Special Study to Examine Relationship Between TSS/BOD and Other Toxic Pollutants for Reduced Sampling During Blending) be deleted. In connection with this request, the District requests that the MRP (page E-11) Section IX. "Other Monitoring Requirements" be revised to allow using TSS as a trigger during blending.*

Response to District Comment No. 10. We disagree. We know there is a correlation between TSS and toxic pollutants, but these correlations differ with different sources of wastewater. Different land uses, compositions of commercial and residential users, industry types, inflow and infiltration rates, groundwater level and salinity, etc., all affect wastewater's characteristics. Therefore, a study to examine the relationship between TSS and other toxic pollutants in the District's effluent is necessary, especially since the plant blends more frequently than many other POTWs during peak weather conditions.

Nevertheless, we did revise the tentative permit in response to the comments. We understand the greatest expense associated with this requirement as it was originally written would have been the dioxins and furans monitoring; therefore, we revised the tentative permit to waive the monitoring requirement for dioxins and furans for this study and during blending. If data analysis show that when TSS is below 45 mg/L, all pollutants (except dioxins and furans) are also below their respective effluent limits, and if the Executive Officer approves the analysis, then the District may use TSS as a trigger for all future monitoring during blending.

District Comment No. 11.

Section VI.C.2.h Special Study to Examine Discharge Impacts on Receiving Water Temperature. *The District argued that the reasonable potential analysis conducted for temperature and the resultant conclusion of the need for a Miller Creek Temperature Study are based on flawed assumptions about the effect of tidal influence on Miller Creek. The District indicated even the existing upstream station located 1000 ft above the discharge outfall is impacted by tides. During higher tidal stages, this "background" station can actually represent a combination of far-field upstream (i.e. watershed) water quality plus variable fractions of effluent and San Pablo Bay water. The District thinks the RMP station located in San Pablo Bay may be a more appropriate station to consider.*

"It would seem that the impact of the inflowing San Pablo Bay water would overwhelm the potential impact of the effluent on temperature at the downstream location and confound the results of such a comparison at the upstream station. Furthermore, it is not clear that the proposed Miller Creek Temperature Study would be able to conclusively resolve this issue even with a significant expenditure of public funds. On a practical level, the District has no control over the temperature of its discharge. Since the discharge only occurs during the colder months, it would be expected to occur during times when there is the least concern about elevated ambient temperatures due to natural conditions."

The District requested that Permit Provision VI.C.2.I (Special Study to Examine Discharge Impacts on Receiving Water Temperature) be deleted from the permit.

Response to District Comment No. 11. We disagree. We conducted our reasonable potential analysis (RPA) for temperature based on available data collected from upstream and downstream of the discharge, and the data show reasonable potential. Because of the tidal influence at both locations, we believe a study is necessary to determine the discharge's impacts. The purpose of this study would be to examine whether effluent is the primary cause of the observed temperature difference. The RMP station in San Pablo Bay is not an appropriate background station to provide ambient conditions because it does not represent the conditions in Miller Creek, which supports cold-water habitat. Therefore, the District will need to identify another location in Miller Creek that can provide such information. We understand the District's concern that it will be very difficult to control effluent temperatures. However, if it turned out that the discharge causes temperature objectives to be exceeded in Miller Creek, the District will be required to take measures to mitigate the impact. Nontheless, we revised the tentative permit to provide more time for the District to prepare a study plan and a more flexible time frame for the District to implement this study.

District Comment No. 12.
The District requested to change the due date for the O&M, Reliability, and Contingency Plan status reports to June 30 of each year to be the same as the current due date.

Response to District Comment No. 12. Except for the Reliability Status Report, we have removed these requirements from the main body of the tentative permit because they are duplicative with the Regional Standard Provisions sections I.C, I.D., and V.C.1.f.7 (see Attachment G to the tentative permit). In accordance with these standard provisions, and the MRP, the District would be required to submit its status reports with its annual self-monitoring report due February 1. We made this change because O&M and reliability plan changes maybe an element of addressing permit limit compliance issues that are required to be addressed in annual monitoring reports. This would have the added benefit of reducing the number of reports the District is required to submit each year.

District Comment No. 13.
The District requested to make minor changes to Section VI.C.4.e-Corrective Measures to Minimize Blending, and VI.C.5.a - Biosolids Management Practices Requirements to reflect the current practice at the plant.

Response to District Comment No. 13. We revised the tentative permit as requested.

District Comment No. 14.
Section VI.C.6.a Table 15 Copper Action Plan. *For consistency with the Copper Action Plan requirements in all recently issued permits in this region, the District requested to revise wording of item (1) as follows: "The Discharger shall submit an inventory of ~~all~~ potential copper sources to the treatment plant."*

Response to District Comment No. 14. We revised the tentative permit as requested.

District Comment No. 15.
Attachment E (MRP) II, Table E-2 Monitoring Locations. *The District requested to add under "Description of Monitoring Location EFF-002"*
"At a point near the outlet of the storage pond to Miller Creek <u>or directly from the outlet line</u>."

Under "Description of Monitoring Location RSW-002,"
"At a point in Miller Creek within 1000 feet upstream of Discharge Point <u>002</u> ~~001~~ and representative of background water quality, formerly C-3."

Response to District Comment No. 15. We revised the tentative permit as requested.

District Comment No. 16.
Attachment E (MRP) IV.A. Monitoring Locations EFF-001 and EFF-001-D. *For consistency with Permit Section IV.A and to avoid the need for a redundant table that would apply only to the dry season month of May, the District requested to add the following wording to the paragraph above Table E-4:*

"The Discharger shall monitor treated wastewater during wet seasons (November 1 – May 1) and during the dry season month of May (if discharging to Miller Creek) at EFF-001 (for dechlorinated effluent) or EFF-001D (for non-dechlorinated effluent) as follows."

Response to District Comment No. 16. We revised the tentative permit as requested.

District Comment No. 17.
"*Section IV.A.4 of the permit specifies an effluent limitation for enterococcus, expressed in units of CFU/100 ml. The Enterolert method is EPA approved for wastewater effluent, and is used by most dischargers to demonstrate compliance with enterococcus bacteria limitations. However, the Enterolert results are in units of MPN/100 ml, which are technically not CFU units, but which provide a statistical estimate of CFUs. " The District requested to revise the enterococcus reporting units in Table E-4 to MPN/100, as in other recently reissued NPDES permit, and add a footnote to Table E-4 that allows use of Enterolert results to demonstrate compliance with the enterococcus bacteria effluent limit.*

Response to District Comment No. 17. We agree. We added a footnote to Table E-4 that allows enterococcus reporting in MPN/100mL if the Enterolert method is used.

District Comment No. 18.
Attachment E (MRP) V.B.1.e Chronic Toxicity Dilution Series.
"The Mysid (shrimp) chronic toxicity test requires that the effluent sample before testing be 'salted up' to a salinity of approximately 25 ppt. This has the unavoidable side effect of raising the typical effluent pH, which may contribute to artifactual toxicity if ammonia or other pH dependent toxicants are present. EPA Mysid test Method 1007.0 therefore allows that the regulatory authority may allow for control of sample pH during testing using procedures." The District requested to add wording that provides the option for pH adjustment: "The Discharger shall conduct tests with a control and five effluent concentrations at 100%, 85%, 70%, 50%, and 25%. The '%' represents percent effluent as discharged. Test sample pH in each dilution in the series may be controlled to the level of the effluent sample as received prior to being salted up."

Response to District Comment No. 18. We revised the tentative permit as requested.

District Comment No. 19.
MRP Appendix E-1.II.B.2.b. Chronic Toxicity Screening Phase Requirements. *The District requested to amend wording so that screening test results can also be used to meet compliance requirements to the extent possible: "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 Stage1 test results and as approved by the Executive Officer.*

Response to District Comment No. 19. We disagree. If the two tests are conducted too far apart, there is a possibility that effluent quality could change significantly between the two tests, which may make the study inconclusive. We maintained the monthly frequency.

District Comment No. 20.
MRP Appendix E-1.II.B.5*. The 0% dilution is equivalent to the control and is normally not specified in the chronic toxicity dilution series. The District requested to delete "0%" from the specified dilution series for clarity and consistency,*

Response to District Comment No. 20. We did not revise the tentative permit because this would not change any requirement, and the inclusion of 0% in the dilution series is consistent with USEPA guidance.

District Comment No. 21.
Fact Sheet IV.A.2. (last paragraph on page F-14). *"The District believes that I&I reduction is an essential element of its overall wet weather flow management strategy. The District's I&I Reduction Program has been described in the annual Collection System Improvement Reports and the NFAA. The District requested that its I&I reduction efforts be acknowledged by inserting the following language into this paragraph: 'The District maintains an aggressive I&I reduction program to reduce peak wet weather flows to the treatment plant.'"*

Response to District Comment No. 21. We revised the tentative permit as requested.

District Comment No. 22.
Fact Sheet IV.A.2. (second paragraph on page F-15). *The District requested to revise this paragraph as follows: "Proposed long-term modifications would involve changes to Plant piping to direct a greater flow through the secondary process; reconfiguration of the biofilter and fixed film reactor to allow operations in parallel; provision for chemical feed at the existing secondary clarifier; ~~addition of equipment to serve as supplemental secondary clarifiers;~~ reconfiguration of the filters to provide alternative secondary clarification; and additional flow meter, control, and SCADA improvements. These proposed long term modifications, which are still in the design phase, would increase full secondary treatment flow to 17.2 ~~26~~ MGD during peak wet weather conditions. At the same time, the District's ongoing I&I reduction program is expected to reduce peak wet weather flows to the treatment plant."*

Response to District Comment No. 22. We revised the tentative permit as requested.

District Comment No. 23.
Fact Sheet IV.D.3.d RPA Determination for Priority Pollutants (p F-25). *The District requested to make the following correction: "Copper, mercury, selenium, cyanide, and dioxin-TEQ~~, and total ammonia~~ exhibit reasonable potential by Trigger 1; lead and nickel exhibit reasonable potential by Trigger 2."*

Response to District Comment No. 23. We revised the tentative permit as requested.

BAY AREA CLEAN WATER AGENCIES (BACWA)

BACWA Comment No. 1.
BACWA objected to including numeric final limits for dioxin-TEQ. BACWA requested 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 contended that dioxin at these levels cannot be measured or controlled.

Response to BACWA Comment No. 1. 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 draft permit 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 allow 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 discharged to San Francisco Bay are mostly combustion-related air emissions, and that these sources are outside the District'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.

BACWA Comment No. 2.
BACWA contended that 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 the proposed final limits. Although an optional offset may provide an alternative to compliance with the final effluent limit, such a program does not currently exist.

Response to BACWA Comment No. 2. We disagree. The compliance schedule requirements are based on the State Water Board's recent Compliance Schedule Policy, which requires 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 actions, 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. 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 Comment No. 3.
"The proposed Receiving Water Ammonia Characterization Study Tasks and Schedule in Provision VI.C.2.d should be removed from the permit. *Existing effluent and receiving water ammonia data for LGVSD clearly demonstrate that the receiving water is fully and conservatively in compliance with Basin Plan receiving water unionized ammonia objectives. Continued routine effluent and receiving water monitoring, as required by the Monitoring and Reporting Program (MRP), is sufficient to document future compliance status. Therefore, an extensive new receiving water study to show continued ammonia compliance is overly burdensome."*

Response to BACWA Comment No. 3. See our Response to District Comment No. 7.

BACWA Comment No. 4.
"BACWA requests that notification requirements for unauthorized discharges from municipal wastewater treatment plants have a threshold of 1,000 gallons and a deadline of 4 hours (Attachment G, section V.E.2.)."

Response to BACWA Comment No. 4. We did not revise the two-hour reporting requirement for unauthorized discharges. We already require this reporting pursuant to Water Code Section 13267. We do not view the threat of third party lawsuits as a compelling reason to leave this requirement out of NPDES permits. Moreover, we believe including all reporting requirements in one place in the Regional Standard Provisions will facilitate compliance.

STAFF INITIATED TEXT CHANGES

In addition to the changes made in response to the comments received, staff added an optional provision (Provision VI.C.2.h - Reduction of Non-discharge Season and Reclamation Plan) to the revised tentative permit, which will allow the District to request the Executive Officer reduce the non-discharge season. This provision is unchanged from the previous permit and will provide some flexibility to the District if reclamation demands decrease in the future.

Finally, staff added a reference to the Discharger's coverage under the mercury watershed permit.