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

STAFF SUMMARY REPORT (Marcia Liao)
MEETING DATE: May 13, 2015

ITEM: **6**

SUBJECT: **Las Gallinas Valley Sanitary District, Sewage Treatment Plant and Wastewater Collection System, San Rafael, Marin County** – Reissuance of NPDES Permit and Rescission of Cease and Desist Order

CHRONOLOGY: October 2009 – Permit reissued and Cease and Desist Order issued

DISCUSSION: The Revised Tentative Order (Appendix A) would reissue the NPDES permit with updated limits and provisions for the District's wastewater treatment plant and collection system. The plant provides secondary treatment of domestic and commercial wastewater for about 30,000 individuals in northern San Rafael and nearby unincorporated Marin County. The plant has a dry weather design capacity of 2.92 million gallons per day and discharges to Miller Creek, which flows to San Pablo Bay. Discharge is generally during the wet weather months of November through May. During dry weather (June through October and sometimes May), the District reclaims the treated wastewater at a wildlife pond and nearby pastures. It also further treats the wastewater to tertiary recycled water standards onsite or provides it as feedstock to other recycled water treatment plants. This tertiary recycled water is then distributed through two water districts for irrigation in nearby communities. On average, the District recycles 21 percent of its wastewater.

The Revised Tentative Order would also rescind 2009's cease and desist order because the District has implemented measures to reduce copper concentrations in its discharge and can now comply with the copper limits in the Revised Tentative Order.

The Revised Tentative Order contains new numeric chronic toxicity effluent limits because available data indicate that there is reasonable potential for chronic toxicity in the discharge to cause or contribute to an exceedance of the Basin Plan narrative toxicity water quality objective. Numeric limits in this case are necessary and appropriate because chemical-specific water quality-based limits and the narrative toxicity limit in the previous order have failed to attain and maintain the Basin Plan's narrative chronic toxicity water quality objective. Numeric limits are also consistent with the federal regulations on whole effluent toxicity limitations.

The District and three others submitted comments (Appendix B) on a draft order circulated for review. As explained in our Response to Comments (Appendix C), several commenters object to the numeric chronic toxicity limits, while U.S. EPA supports them. The more substantial comments object to (1) the

Board's adoption of numeric chronic toxicity limits before the State Water Board adopts a statewide toxicity policy, (2) the inclusion of triggers for accelerated chronic toxicity monitoring and toxicity reduction evaluations on top of the numeric limits, (3) the inclusion of existing acute toxicity limits in addition to the chronic toxicity limits, (4) the method used to undertake the reasonable potential analysis for chronic toxicity, and (5) the method used to calculate the numeric chronic toxicity effluent limits. The Responses to Comments addresses all of these comments.

We propose relatively few revisions based on the comments on toxicity because the draft requirements are based on Clean Water Act regulations, the Basin Plan, and authoritative guidance. However, because the revisions are unlikely to satisfy the commenters, we expect the District and others to testify at the hearing to object to provisions of the Revised Tentative Order. As such, at the hearing, Board staff plans to provide the Board and the public a full description of how effluent toxicity is addressed in NPDES permits and how federal regulations guide our development of toxicity effluent limitations.

RECOMMEN-DATION: Adopt the Revised Tentative Order

CIWQS: Place ID 236598

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

REVISED TENTATIVE ORDER No. R2-2015-XXXX
NPDES No. CA0037851

The following discharger is subject to waste discharge requirements (WDRs) set forth in this Order.

Table 1. Discharger Information

Discharger	Las Gallinas Valley Sanitary District
Facility Name	Las Gallinas Valley Sanitary District Sewage Treatment Plant and its wastewater collection system
Facility Address	300 Smith Ranch Road San Rafael, CA 94903 Marin County
CIWQS Place Number	236598

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Secondary treated municipal effluent	38.23718º	122.43186º	Miller Creek
002	Secondary treated municipal effluent	38.21834º	122.38325º	Miller Creek

Table 3. Administrative Information

This Order was adopted on:	[INSERT DATE]
This Order shall become effective on:	July 1, 2015
This Order shall expire on:	June 30, 2020
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with California Code of Regulations, title 23, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	October 1, 2019
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region, have classified this discharge as follows:	Major

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

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Bruce H. Wolfe**,** Executive Officer

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Attachments

I. FACILITY INFORMATION

Information describing the Las Gallinas Valley Sanitary District Sewage Treatment Plant and Wastewater Collection System (collectively, the Facility) is summarized in Table 1 and in Fact Sheet (Attachment F) sections I and II.

II. FINDINGS

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

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

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

C. Provisions and Requirements Implementing State Law. No provisions and requirements in this Order are included to implement State law only.

D. Cease and Desist Order No. R2-2009-0071. The Regional Water Board issued Cease and Desist Order No. R2-2009-0071 because it believed the Discharger could not immediately comply with the copper requirements in Order No. R2-2009-0070 (previous order). The Discharger complied with the Cease and Desist Order, and, because the Discharger is expected to be able to comply with this Order's copper requirements (see Fact Sheet section IV.C.4.c), Cease and Desist Order No. R2-2009-0071 is no longer necessary and can be rescinded.

E. Notification of Interested Parties. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe these WDRs and provided an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.

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

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2009-0070 and Cease and Desist Order No. R2-2009-0071 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way

prevents the Regional Water Board from taking enforcement action for past violations of the previous order.

III. DISCHARGE PROHIBITIONS

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

B. Discharge to Miller Creek at Discharge Point Nos. 001 and 002 is prohibited during the dry season each year, from June 1 through October 31, except when facility inflow exceeds the capacity of influent storage and the capacity of the recycled water distribution and storage system due to wet weather. The need to discharge may arise as a result of early or late season storms. As soon as possible after determining that discharge will be necessary, the Discharger shall notify the Regional Water Board case manager by phone or email and provide information supporting its determination. Unless the case manager objects, the Discharger may commence discharge but only when absolutely necessary and only to the extent necessary for the reason stated above. The discharge shall be monitored and meet limitations and shall consist of fully treated effluent (or meet the requirements for blending in Discharge Prohibition III.C. below). The discharge shall not contain water directly from the storage ponds.

For each discharge event, the Discharger shall submit a report within five business days after the end of discharge that describes the reasons for the need to discharge, with supporting information, and that describes the discharge flow volume, duration, and estimated dilution within the receiving water. In accordance with the Monitoring and Reporting Program (MRP, Attachment E), discharge quality shall be reported in the next monthly self-monitoring report.

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

Blended wastewater is biologically-treated wastewater blended with wastewater diverted around secondary (biological) treatment units. Such discharges are hereby approved under the bypass conditions stated in 40 C.F.R. section 122.41(m)(4) when (1) the peak wet weather influent flow volume exceeds the reliable process capacity of the secondary treatment units of 8 million gallons per day (MGD), (2) the discharge complies with the effluent and receiving water limitations contained in this Order, and (3) the Discharger complies with Provision VI.C.5.b of this Order. The Discharger shall operate the Facility in accordance with its Operation and Maintenance Manual. It shall optimize storage and use of equalization units and fully use the biological treatment units and advanced treatment units. The Discharger shall report incidents of blended effluent discharges in self-monitoring reports and monitor such discharges as specified in the MRP.

D. Average dry weather flow through the treatment plant in excess of 2.92 MGD is prohibited. Average dry weather treatment flow shall be determined from daily measurements of influent flows to the treatment plant during three consecutive dry weather months each year. Compliance shall be measured at Monitoring Location INF-001 as described in the MRP.

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. Conventional, Non-Conventional, and Toxic Pollutants

The Discharger shall comply with the following effluent limitations at Discharge Point Nos.001 and 002, with compliance determined at Monitoring Locations EFF-001 and EFF-001B (if blending) as described in the MRP:

Table 4. Effluent Limitations

Parameter	Units	Discharge Month [3]	Effluent Limitations				
			Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand, 5-day @ 20°C (BOD_5)	mg/L	November -April	30	45	---	---	---
		May	20	25	30	---	---
Total Suspended Solids (TSS)	mg/L	November -April	30	45	---	---	---
		May	15	18	20	---	---
Oil and Grease	mg/L	November -April	10	---	20	---	---
		May	5	---	15	---	---
Ammonia, Total	mg/L as N	November -April	10	---	18	---	---
		May	6	---	---	---	---
BOD_5 percent removal [1]	%	November -May	85 (minimum)	---	---	---	---
TSS percent removal [1]	%		85 (minimum)	---	---	---	---
pH [2]	s.u.		---	---	---	6.5	8.5
Chlorine Residual	mg/L		---	---	---	---	0.0
Copper	µg/L		8.6	---	11	---	---
Nickel	µg/L		11	---	18	---	---
Cyanide	µg/L		6.4	---	14	---	---
Bis(2-Ethylhexyl)Phthalate	µg/L		5.9	---	12	---	---
Dioxin-TEQ	µg/L		1.4×10^{-8}	---	2.8×10^{-8}	---	---
Chronic Toxicity	TU_c		2.7	---	5.3 [4]	---	---

Unit Abbreviations:

mg/L = milligrams per liter
µg/L = micrograms per liter
s.u. = standard units
TU_c = chronic toxicity units, equal to 100/NOEL, where NOEL = IC_{25}, EC_{25}, or NOEC

Footnotes:

[1] The average monthly BOD_5 and TSS percent removal shall not be less than 85 percent (i.e., in each calendar month, the arithmetic mean of BOD_5 and TSS effluent concentrations shall not exceed 15 percent of the arithmetic mean of BOD_5 and TSS influent concentrations at approximately the same times during the same periods).

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

[3] Discharges occurring during June through October shall comply with the effluent limitations for May.

[4] The maximum daily limitation for chronic toxicity shall be interpreted as the maximum test result for the month.

B. Enterococcus Bacteria

The geometric mean enterococcus bacteria concentration of all samples collected in a calendar month at Discharge Point Nos. 001 and 002, with compliance measured at Monitoring Locations EFF-001 and EFF-001B (if blending) as described in the MRP, shall not exceed 35 most probable number per 100 milliliters (MPN/100 mL).

C. Whole Effluent Acute Toxicity

Discharges at Discharge Point Nos. 001 and 002 shall comply with the following limitations, with compliance determined at Monitoring Location EFF-001 as described in the MRP:

- A three-sample median value of not less than 90 percent survival; and
- A single-sample maximum value of not less than 70 percent survival.

These acute toxicity limitations are defined as follows:

- **Three-sample median.** A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit if one or more of the past two bioassay tests also shows less than 90 percent survival.
- **Single-sample maximum.** Any bioassay test showing survival of less than 70 percent represents a violation of this effluent limit.

If the Discharger can demonstrate that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge complies with the ammonia effluent limits in Table 4 of this Order, then such toxicity does not constitute a violation of this effluent limitation.

V. RECEIVING WATER LIMITATIONS

A. The discharge shall not cause the following conditions to exist in receiving waters at any place:

1. Floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses;

2. Alteration of suspended sediment in such a manner as to cause nuisance or adversely affect beneficial uses, or detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life;

3. Suspended material in concentrations that cause nuisance or adversely affect beneficial uses;

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

5. Alteration of temperature, beyond present natural background levels;

6. **C**hanges in turbidity that cause nuisance or adversely affect beneficial uses, or increase from normal background light penetration or turbidity greater than 10 percent in areas where natural turbidity is greater than 50 nephelometric turbidity units;

7. Coloration that causes nuisance or adversely affects beneficial uses;

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

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

B. The discharge shall not cause the following limits to be exceeded in receiving waters at any place within one foot of the water surface:

1.	Dissolved Oxygen	5.0 mg/L, minimum The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
2.	Dissolved Sulfide	Natural background levels
3.	pH	The pH shall not be depressed below 6.5 or raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.
4.	Nutrients	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

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

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all "Standard Provisions" in Attachment D.

2. The Discharger shall comply with all applicable provisions of the "Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits" (Attachment G).

B. Monitoring and Reporting Provisions

The Discharger shall comply with the MRP (Attachment E), and future revisions thereto, and applicable sampling and reporting requirements in Attachments D and G.

C. Special Provisions

1. Reopener Provisions

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

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

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

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

d. If State Water Board precedential decisions, new policies, new laws, or new regulations are adopted.

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

f. If the Discharger requests adjustments in effluent limits due to the implementation of stormwater diversion pursuant to the Municipal Regional Stormwater Permit (Permit No. CAS612008) for redirecting dry weather and first flush discharges from the storm drain system to the sanitary sewer system as a stormwater pollutant control strategy.

g. Or as otherwise authorized by law.

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

2. Effluent and Receiving Water Characterization Study and Report

a. Study Elements. The Discharger shall continue to characterize and evaluate the discharge from the following discharge points to verify that the "no" or "unknown" reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall collect representative samples at the monitoring station set forth below, as defined in the MRP, at no less than the frequency specified below:

Discharge Point	Monitoring Location	Minimum Frequency
001 and 002	EFF-001	Once per calendar year

The samples shall be analyzed for the priority pollutants listed in Attachment G, Table C, except for those priority pollutants with effluent limitations where the MRP already requires more frequent monitoring and except for those priority pollutants for which there are no water quality criteria (see Fact Sheet Table F-6). Compliance with this requirement shall be achieved in accordance with Attachment G sections III.A.1 and III.A.2.

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

b. Reporting Requirements

i. Routine Reporting. The Discharger shall, within 45 days of receipt of analytical results, report the following in the transmittal letter for the appropriate self-monitoring report:

(a) Indication that a sample for this characterization study was collected; and

(b) Identity of priority pollutants detected at or above applicable water quality criteria (see Fact Sheet Table F-7 for the criteria) and the detected concentrations of those pollutants.

ii. Annual Reporting. The Discharger shall summarize the annual data evaluation and source investigation in its annual self-monitoring report.

iii. Final Report. The Discharger shall submit a final report that presents all these data with its application for permit reissuance.

3. Pollutant Minimization Program

a. The Discharger shall continue to improve its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the Facility and therefore to the receiving waters.

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

i. Brief description of treatment plant. The description shall include the service area and treatment plant processes.

ii. Discussion of current pollutants of concern. Periodically, the Discharger shall analyze its circumstances to determine which pollutants are currently a problem and

which pollutants may be potential future problems. This discussion shall include the reasons for choosing the pollutants.

iii. **Identification of sources for pollutants of concern.** This discussion shall include how the Discharger intends to estimate and identify pollutant sources. The Discharger shall include sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.

iv. **Identification of tasks to reduce the sources of pollutants of concern.** This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks by itself or participate in group, regional, or national tasks that address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that address its pollutants of concern whenever it is efficient and appropriate to do so. An implementation timeline shall be included for each task.

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

vi. **Continuation of Public Outreach Program.** The Discharger shall prepare a pollution prevention public outreach program for its service area. Outreach may include participation in existing community events, such as county fairs; initiating new community events, such as displays and contests during Pollution Prevention Week; conducting school outreach programs; conducting plant tours; and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, or web sites. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.

vii. **Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness.** The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This discussion shall identify the specific criteria used to measure the effectiveness of each task in Provisions VI.C.3.b.iii, iv, v, and vi.

viii. **Documentation of efforts and progress.** This discussion shall detail all of the Discharger's Pollutant Minimization Program activities during the reporting year.

ix. **Evaluation of Pollutant Minimization Program and task effectiveness.** This Discharger shall use the criteria established in Provision VI.C.3.b.vii to evaluate the program and task effectiveness.

x. **Identification of specific tasks and timelines for future efforts.** Based on the evaluation, the Discharger shall explain how it intends to continue or change its tasks to more effectively reduce the amount of pollutants flowing to the Facility and subsequently in its effluent.

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

i. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or

ii. A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL, using definitions in Attachment A and reporting protocols described in the MRP.

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

i. Annual review and semi-annual monitoring of potential sources of the reportable priority pollutants, which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures when source monitoring is unlikely to produce useful analytical data;

ii. Quarterly monitoring for the reportable priority pollutants in the influent to the Facility. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;

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

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

v. Inclusion of the following specific items within the annual report required by Provision VI.C.3.b above:

(a) All Pollutant Minimization Program monitoring results for the previous year;
(b) List of potential sources of the reportable priority pollutants;
(c) Summary of all actions undertaken pursuant to the control strategy; and
(d) Description of actions to be taken in the following year.

4. Special Provisions for Municipal Facilities

a. Sludge and Biosolids Management

i. All sludge and biosolids shall be disposed of, managed, or reused in a municipal solid waste landfill; through land application; as a Class A compost; through a waste-to-

energy facility or another recognized and approved technology; in a sludge-only landfill; or in a sewage sludge incinerator in accordance with 40 C.F.R. part 503.

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

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

iv. Sludge or biosolids disposed in a municipal solid waste landfill shall meet the requirements of 40 C.F.R. part 258. In the annual self-monitoring report, the Discharger shall provide the amount of sludge or biosolids disposed and indicate the landfill to which it was sent.

v. This Order does not authorize permanent on-site sludge or biosolids storage or disposal. A Report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity.

b. Collection System Management. The Discharger shall properly operate and maintain its entire collection system (see Attachment D section I.D). The Discharger shall report any noncompliance (see Attachment D sections V.E.1 and V.E.2) and mitigate any discharge from its collection system that violates this Order (see Attachment D section I.C).

The *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (General Collection System WDRs), State Water Board Order No. 2006-0003 DWQ, as amended by State Water Board Order No. WQ 2013-0058-EXEC, has requirements for operation and maintenance of separate sanitary sewer collection systems, and for reporting and mitigating sanitary sewer overflows from the separate sanitary sewer portion of the Discharger's collection system. While the Discharger must comply with both the General Collection System WDRs and this Order, the General Collection System WDRs more clearly and specifically stipulate requirements for operation and maintenance, and for reporting and mitigating sanitary sewer overflows. Implementation of the General Collection System WDRs for proper operation and maintenance and mitigation of sanitary sewer overflows will satisfy the corresponding federal NPDES requirements specified in Attachment D (as supplemented by Attachment G). Following the notification and reporting requirements in the General Collection System WDRs will satisfy the corresponding NPDES reporting requirements specified in Attachment D (as supplemented by Attachment G) for sanitary sewer overflows from the separate sanitary sewer portion of the collection system.

5. Other Special Provisions

a. Reliability Assurance Plan and Status Report

i. The Discharger shall evaluate the reliability of its treatment systems and submit a Reliability Assurance Plan by April 1, 2016. At a minimum, the plan shall include the following elements:

(a) Review incidents involving the release of inadequately-treated wastewater during the previous order term.

(b) Identify current and future reliability concerns, including, but not limited to, safeguards for critical process units, sea level rise, and cyber security.

(c) Describe measures or safeguards in place (e.g., treatment and storage, critical system redundancies, spare parts, warning alarms, etc.) to ensure the reliability of the system in preventing inadequately-treated wastewater from being discharged.

(d) Identify appropriate reliability improvement actions and establish a timeline for completion.

ii. The Discharger shall maintain the Reliability Assurance Plan in usable condition and have it available for reference and use by all relevant personnel.

iii. The Discharger shall regularly (at least annually) review, revise, or update, as necessary, the Reliability Assurance Plan to ensure that the document remains useful and relevant to current equipment and operations. For any significant changes in equipment or operational practices, the Discharger shall revise the plan as soon as practicable.

iv. The Discharger shall submit a report describing the current status of its Reliability Assurance Plan, including any recommended or planned actions and the timeline for completion, by February 1 each year. The report shall discuss in detail incidents, if any, involving the release of inadequately treated wastewater during the previous calendar year.

b. Corrective Measures to Minimize Blending

The Discharger shall implement the following tasks to reduce blending:

Table 5. Tasks to Reduce Blending

Task	Compliance Date
1. Develop and Implement Updated Wet Weather Improvement Plan. The Discharger shall develop an updated Wet Weather Improvement Plan that takes into account the alternatives identified in the 2012 Brown and Caldwell study and the corrective measures identified, but not yet completed, in the Discharger's Wet Weather Improvements Report (dated May 1, 2010) and Wet Weather Improvements Workplan (dated August 1, 2010). The Plan shall establish measurable goals to minimize and eventually eliminate blending due to wet weather events. The Plan shall specify measures to be implemented at the plant and wastewater collection system and shall identify their costs, implementation schedules, and proposed funding mechanisms. These measures shall include, but are not limited to, the following: **a.** Implementation of collection system capital improvement projects at a rate consistent with industry standards based on the condition of the system; **b.** Feasible reduction of rainwater inflow from known sources, including residential swimming pools, runoff from the Guide Dogs for the Blind facility, and runoff from the treatment plant grounds that is captured and returned to the plant headworks; **c.** Construction of an additional secondary clarifier; **d.** Construction of a flow equalization system; **e.** Construction of new activated sludge basins or other secondary treatment capacity enhancements. The Plan may include alternatives to items c, d, and e above that provide an equivalent means of achieving the blending reduction goals. The Discharger shall identify in the Plan the measures to be undertaken during the term of this Order. The Discharger shall describe the extent to which implementing these measures will improve wet weather management. The Discharger shall incorporate feedback, if any, from the Executive Officer and begin implementation of the Plan by the date specified.	November 1, 2015
2. Report Progress on Implementing Wet Weather Improvement Plan. The Discharger shall evaluate and report on the implementation and effectiveness of its Wet Weather Improvement Plan annually.	Annually, with Annual Self-Monitoring Report due February 1
3. Complete Implementation of Updated Wet Weather Improvement Plan. The Discharger shall implement wet weather improvement measures in accordance with the schedules proposed in its updated Wet Weather Improvement Plan. Any changes shall be subject to Executive Officer approval.	April 30, 2020
4. Develop Private Sewer Lateral Ordinance. The Discharger shall review the ordinances of Bay Area communities that have successfully adopted measures requiring inspection of private sewer laterals (e.g., upon ownership change). The Discharger shall develop a lateral inspection ordinance appropriate for its service area and present it to its governing board for consideration. The Discharger shall report the status of the proposed lateral inspection ordinance as part of the Wet Weather Improvement Plan progress report.	Annually, with Annual Self-Monitoring Report due February 1

Task	Compliance Date
5. Prepare No Feasible Alternatives Analysis (Utility Analysis). If the Discharger seeks to continue to bypass peak wet weather flows around the secondary treatment units based on 40 C.F.R. section 122.41(m)(4)(i)(A)-(C), it shall conduct a Utility Analysis that contains all elements described in U.S. EPA's proposed guidance *NPDES Permit Requirements for Peak Wet Weather Discharges from Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems* (December 2005, or the most recent version). The analysis shall account for efforts to reduce inflow and infiltration. In addressing the elements in the guidance, the analysis shall specifically contain an alternatives analysis for blending reduction to evaluate strategies to further reduce blending through capital improvements. The analysis shall identify all feasible alternatives and explain why infeasible alternatives are infeasible. The Discharger shall select feasible actions based on factors including, but not limited to, the need to blend (considering the effectiveness of the collection system and treatment plant improvement projects), the foreseeable impact on the need to blend, and estimated costs relative to the Discharger's ability to finance the costs. (One means to assess a community's ability to fund wet weather improvements is to consult U.S. EPA's *CSO Guidance for Financial Capability Assessment and Schedule Development*, EPA Publication No. 832-B-97-004.) The Utility Analysis shall include a timeline for implementation of feasible actions.	With Report of Waste Discharge due July 1, 2019
6. Develop and Implement Public Notification Protocol. The Discharger shall develop and implement a public notification protocol to alert the public of any bypass, including blending. The protocol shall provide a mechanism to notify the public within 24 hours of the start of a blending incident and provide an approximate duration and volume for the incident within 48 hours of it ending.	November 1, 2015

c. Copper Action Plan. The Discharger shall continue to implement source control and pollution prevention for copper in accordance with the following tasks and time schedule:

Table 6. Copper Action Plan

Task	Compliance Date
1. Review Potential Copper Sources The Discharger shall submit an inventory of potential copper sources to the Facility.	Completed (submitted December 28, 2009)
2. Implement Copper Control Program The Discharger shall submit a plan for and begin implementation of a program to reduce copper sources identified in Task 1. The plan shall consist, at a minimum, of the following elements: **a.** Provide education and outreach to the public (e.g., focus on proper pool and spa maintenance and plumbers' roles in reducing corrosion); **b.** If corrosion is determined to be a significant copper source, work cooperatively with local water purveyors to reduce and control water corrosivity, as appropriate, and ensure that local plumbing contractors implement best management practices to reduce corrosion in pipes; and	Completed plan (submitted as part of 2009 Annual Pollution Prevention Report on February 28, 2010, and updated annually) with implementation ongoing

Task	Compliance Date
c. Educate plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharges.	
3. Implement Additional Measures If the Regional Water Board notifies the Discharger that the three-year rolling mean copper concentration in San Pablo Bay exceeds 3.0 µg/L, then within 90 days of the notification, the Discharger shall evaluate the effluent copper concentration trend and, if it is increasing, develop and begin implementation of additional measures to control copper discharges. The Discharger shall report on the progress and effectiveness of actions taken, and provide a schedule for actions to be taken in the next 12 months.	If required, progress report with next annual pollution prevention report due February 28 (at least 90 days following notification)
4. Undertake Studies to Reduce Copper Pollutant Impact Uncertainties The Discharger shall submit an updated study plan and schedule to conduct or cause to be conducted technical studies to investigate possible copper sediment toxicity and to investigate sub-lethal effects on salmonids. Specifically, the Discharger shall include the manner in which the above will be accomplished and describe the studies to be performed with an implementation schedule. To satisfy this requirement, the Discharger may collaborate and conduct these studies as a group.	Completed (submitted January 6, 2011 by Bay Area Clean Water Agencies)
5. Report Status of Copper Control Program The Discharger shall submit an annual report documenting copper control program implementation and addressing the effectiveness of the actions taken, including any additional copper controls required by Task 3 above, and provide a schedule for actions to be taken in the next 12 months. Additionally, the Discharger shall report the findings and results of the studies completed, planned, or in progress under Task 4. Regarding Task 4 studies, dischargers may collaborate and provide this information in a single report to satisfy this requirement for an entire group.	With annual pollution prevention report due February 28 each year

d. Cyanide Action Plan. The Discharger shall implement monitoring and surveillance, source control and pollution prevention for cyanide in accordance with the following tasks and time schedule:

Table 7. Cyanide Action Plan

Task	Compliance Date
1. Review Potential Cyanide Sources The Discharger shall submit an inventory of potential cyanide sources to the Facility. If no cyanide sources are identified, tasks 2 and 3 are not required, unless the Discharger receives a request to discharge detectable levels of cyanide to the sewer. If so, the Discharger shall notify the Executive Officer and implement tasks 2 and 3.	Completed; no source identified (submitted March 1, 2010)
2. Implement Cyanide Control Program The Discharger shall continue to implement its program to minimize cyanide discharges to its treatment plant consisting, at a minimum, of the following elements: **a.** Inspect each potential source to assess the need to include that source in the control program.	Completed (submitted March 1, 2010)

Task	Compliance Date
b. Inspect contributing sources included in the control program annually. Inspection elements may be based on U.S. EPA guidance, such as *Industrial User Inspection and Sampling Manual for POTWs* (EPA 831-B-94-01). **c.** Develop and distribute educational materials to sources and potential sources regarding the need to prevent cyanide discharges. **d.** Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. For purposes of this Order, a "significant cyanide discharge" is occurring if cyanide is found in the plant's influent above 18 µg/L.	
3. Implement Additional Measures If the Regional Water Board notifies the Discharger that ambient monitoring shows cyanide concentrations are 1.0 µg/L or higher in the main body of San Francisco Bay, then within 90 days of the notification, the Discharger shall commence actions to identify and abate cyanide sources responsible for the elevated ambient concentrations and shall report on the progress and effectiveness of actions taken and provide a schedule for actions to be taken in the next 12 months.	If required, with next annual pollution prevention report due February 28 (at least 90 days following notification)
4. Report Status of Cyanide Control Program The Discharger shall submit an annual report documenting cyanide control program implementation and addressing the effectiveness of actions taken, including any additional cyanide controls required by Task 3, above, and provide a schedule for actions to be taken in the next 12 months.	With annual pollution prevention report due February 28 each year

e. Standard Operating Procedures for Resource Recovery (Optional)

If the Discharger receives hauled-in anaerobically-digestible material for injection into an anaerobic digester, the Discharger shall notify the Regional Water Board and develop and implement Standard Operating Procedures for this activity. The Standard Operating Procedures shall be developed prior to initiation of hauling. The Standard Operating Procedures shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion, and transportation; spill prevention; spill response; avoidance of the introduction of materials that could cause interference, pass through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Discharger shall train its staff on the Standard Operating Procedures and maintain records for a minimum of three years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of three years for the disposition, location, and quantity of cumulative pre-digestion segregated solid waste hauled offsite.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)
Also called the average, 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
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
Known to cause cancer in living organisms.

Coefficient of Variation
Measure of data variability calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge
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 is considered the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
Sample result less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit
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 by conducting a mixing zone study or modeling the discharge and receiving water.

Effluent Concentration Allowance (ECA)
Value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the CV 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 U.S. EPA guidance (*Technical Support Document For Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bay
Indentation along the coast that encloses an area of oceanic water within a 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
Concentration that results from the confirmed detection of the substance below the ML value by the analytical method.

Estuaries
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 are considered estuaries. Estuarine waters are considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in 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
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
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)
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
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 n/2 and n/2+1).

Method Detection Limit (MDL)
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 in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)
Concentration at which the entire analytical system gives 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
Limited volume of receiving water allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

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

Persistent Pollutants
Substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program
Program of 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 Pollutant Minimization Program is to reduce all potential sources of a priority pollutant 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. Cost effectiveness may be considered when establishing the requirements of a Pollutant Minimization Program. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), is considered to fulfill Pollutant Minimization Program requirements.

Pollution Prevention
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 Water Board or Regional Water Board.

Reporting Level (RL)
ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. 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 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) Appendix 4 in accordance with SIP section 2.4.2 or established in accordance with SIP section 2.4.3. 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.

Source of Drinking Water
Any water designated as having a municipal or domestic supply (MUN) beneficial use.

Standard Deviation (σ)
Measure of variability calculated as follows:

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

where:

x is the observed value;

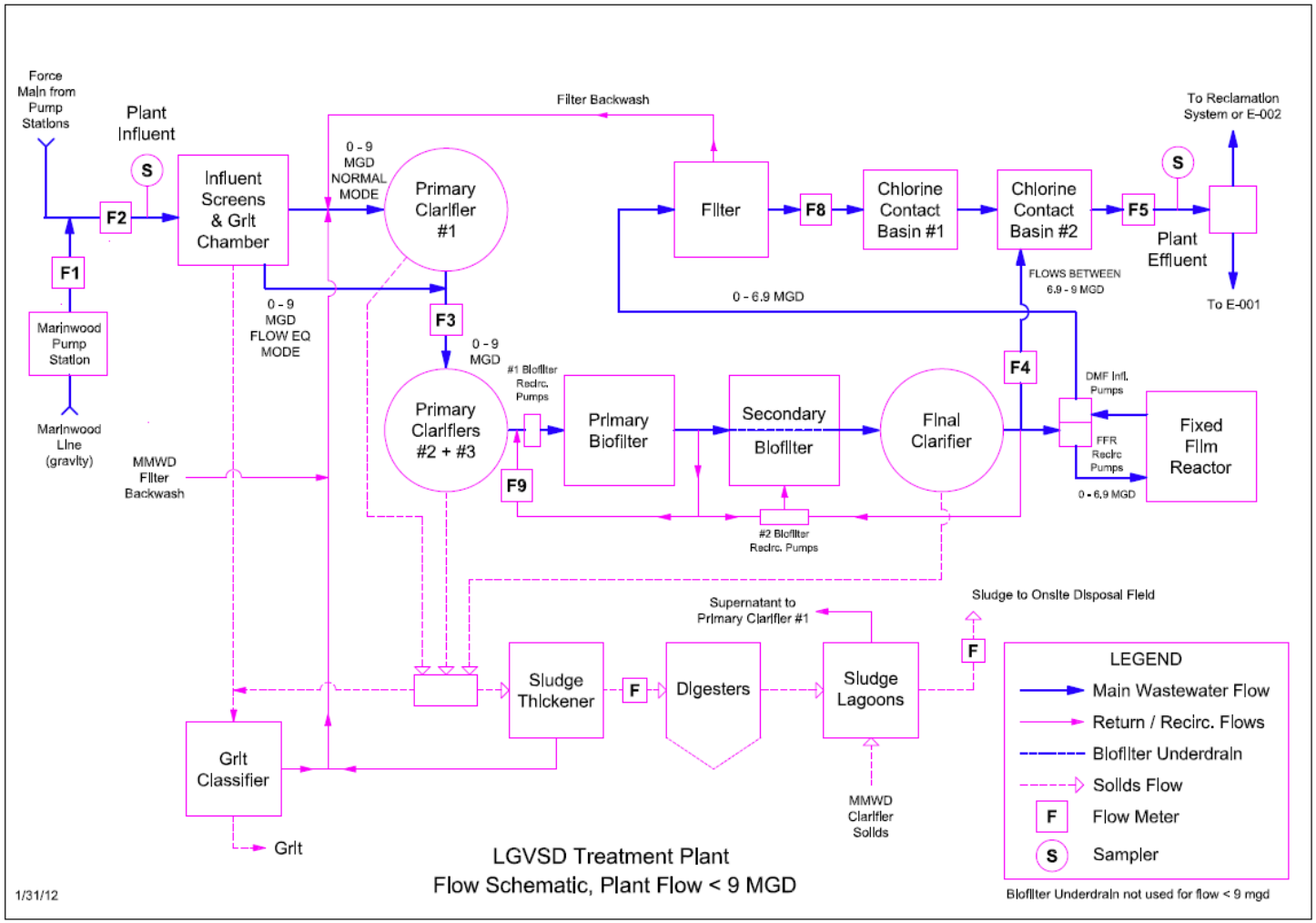
μ is the arithmetic mean of the observed values; and

n is the number of samples.

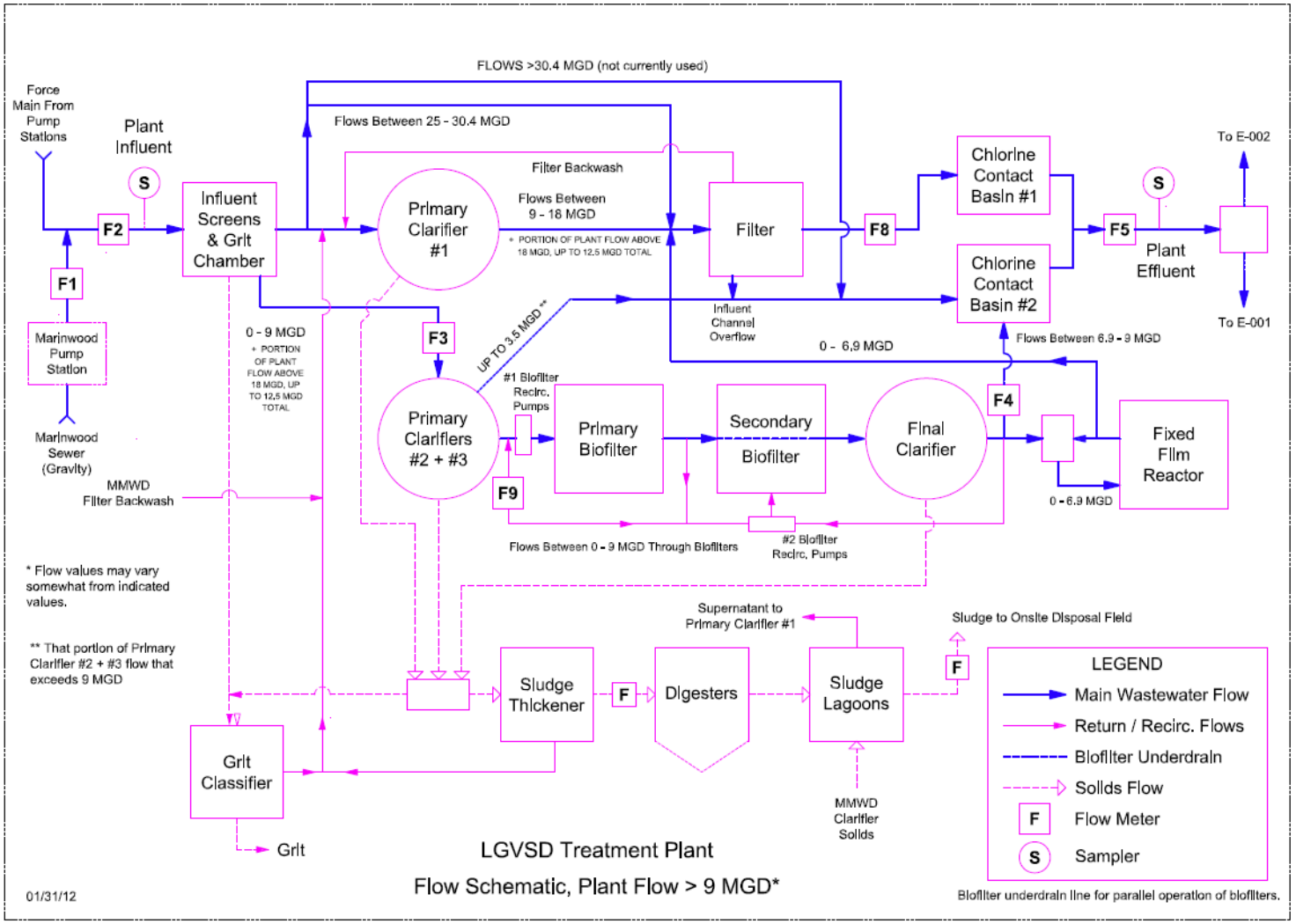
Toxicity Reduction Evaluation (TRE)
Study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of 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 chemicals responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

ATTACHMENT B – FACILITY MAP

ATTACHMENT C1 – PROCESS FLOW DIAGRAM (FLOWS < ~9 MGD)



ATTACHMENT C2 – PROCESS FLOW DIAGRAM (FLOWS > ~9 MGD)



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, U.S. EPA, 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 (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 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 (33 U.S.C. § 1318(a)(4)(B)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); 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. (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, 13267, 13383.)

G. Bypass

1. Definitions

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

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

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

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

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

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of

equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

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

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

5. Notice

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

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

H. Upset

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

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

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

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

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

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

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

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

II. STANDARD PROVISIONS—PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

B. Monitoring results must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analysis of pollutants unless another method is required under 40 C.F.R. subchapters N or O. In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. §§ 122.41(j)(4), § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS—RECORDS

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

B. Records of monitoring information shall include the following:

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

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

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

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

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

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

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

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

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

V. STANDARD PROVISIONS—REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA 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 U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

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

2. For a corporation, all permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

For a partnership or sole proprietorship, all permit applications shall be signed by a general partner or the proprietor, respectively. (40 C.F.R. § 122.22(a)(2).)

For a municipality, State, federal, or other public agency, 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 U.S. EPA). (40 C.F.R. § 122.22(a)(3).).

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

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

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

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

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

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

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

C. Monitoring Reports

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

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

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

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

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

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

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

F. Planned Changes

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

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

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (Alternatively, for an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a), this notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 C.F.R. section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1).) (40 C.F.R. § 122.41(l)(1)(ii).)

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

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Regional Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS—NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):
   - **a.** 100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));
   - **b.** 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));
   - **c.** Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or
   - **d.** The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):
   - **a.** 500 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(2)(i));
   - **b.** 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));
   - **c.** Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or
   - **d.** The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

B. Publicly-Owned Treatment Works (POTWs)

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

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Contents

Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Clean Water Act section 308 and 40 C.F.R. sections 122.41(h), 122.41(j)-(l), 122.41(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State laws and regulations.

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. sections 122.62, 122.63, and 124.5. If any discrepancies exist between this MRP and the "Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits" (Attachment G), this MRP shall prevail.

B. The Discharger shall conduct all monitoring in accordance with Attachment D, section III, as supplemented by Attachment G. Equivalent test methods must be more sensitive than those specified in 40 C.F.R. section 136 and must be specified in this permit.

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-1. Monitoring Locations

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description [1]
Influent	INF-001	Any point in the plant's headworks at which all waste tributary to treatment is present and preceding any phase of treatment.
Effluent	EFF-001	Any point in the discharge pipeline from the plant to Miller Creek (via either Discharge Point No. 001 or 002) where wastewater treatment is complete (i.e., after chlorination and dechlorination) and all flow tributary to the outfall is present.
Effluent	EFF-001B (blending)	Any point in the discharge pipeline from the plant to Miller Creek (via either Discharge Point No. 001 or 002) where all blended wastewater (i.e., fully-treated and primary-treated effluent combined) flow tributary to the outfall is present (may be the same as Monitoring Location No. EFF-001).
Effluent	REC-001	Any point in the discharge pipelines from the plant where wastewater treatment, including disinfection, is complete, and all flow tributary to water recycling facilities is represented (may be a calculated total from flow meters on individual recycled water streams).
Biosolids	BIO-001	Facility biosolids
Receiving Water	RSW-001 (formerly C-2)	A point in Miller Creek within 20 feet downstream of Discharge Point No. 002.
Receiving Water	RSW-002 (formerly C-3)	A point in Miller Creek within 1,000 feet upstream of Discharge Point No. 001 and representative of background water quality.

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor influent at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	MGD	Continuous	Continuous/D
Biochemical Oxygen Demand (5-day @ 20°C)(BOD_5)	mg/L	C-24	1/Week
Total Suspended Solids (TSS)	mg/L	C-24	1/Week
Cyanide, Total	µg/L	Grab	2/Year

Unit Abbreviations:

MGD = million gallons per day
mg/L = milligrams per liter
µg/L = micrograms per liter

Sample Types:

Continuous = measured continuously
C-24 = 24-hour composite sample
Grab = grab sample

Sampling Frequency:

Continuous/D = measured continuously, and recorded and reported daily
1/Week = once per week
2/Year = twice per year

Footnote:

[1] Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:
- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Maximum and minimum daily average flow rates (MGD)

IV. EFFLUENT MONITORING REQUIREMENTS

A. Effluent Monitoring (Monitoring Locations EFF-001 and REC-001)

The Discharger shall monitor effluent at Monitoring Location EFF-001 as follows when discharging to Miller Creek (except when blending). Flow shall be monitored year round; effluent flows directed to all onsite and offsite water recycling facilities shall be reported separately under Monitoring Location REC-001. For necessary EFF-001 discharges during the non-discharge season (June 1 to October 31), the Discharger shall monitor flow, BOD_5, TSS, pH, chlorine residual, enterococcus bacteria, ammonia, and cyanide. Monitoring the other parameters is not required.

Table E-3. Effluent Monitoring (Monitoring Location EFF-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	MGD and MG	Continuous	Continuous/D
Temperature	°C	Grab	1/Day
BOD_5	mg/L	C-24	1/Week
TSS	mg/L	C-24	1/Week
Oil and Grease [2]	mg/L	Grab	1/Quarter
pH [3]	standard units	Continuous or Grab	Continuous/D or 1/Day

Parameter	Units	Sample Type	Minimum Sampling Frequency
Chlorine Residual [4]	mg/L	Continuous/H	Continuous/H
Enterococcus Bacteria	MPN/100mL [10]	Grab	1/Week
Ammonia, Total [5]	mg/L as N	C-24	1/Month
Copper	µg/L	C-24	1/Month
Nickel	µg/L	C-24	1/Month
Cyanide	µg/L	Grab	1/Month
Bis(2-Ethylhexyl)Phthalate [6]	µg/L	Grab	1/Month
Dioxin-TEQ	µg/L	Grab	1/Year
Acute Toxicity [7]	% survival	Flow through	1/Quarter
Chronic Toxicity [8]	TU_c	C-24	1/Quarter
Standard observations [9]	--	Observation	1/Month

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
% survival = percent survival
TU_c = chronic toxicity units, equal to 100/NOEL, where NOEL = IC_{25}, EC_{25}, or NOEC
ºC = degrees Celsius
MPN/100 mL = most probable number per 100 mL

Sample Type:

Continuous = measured continuously
Continuous/H = measured continuously (or, if infeasible, at least hourly), and recorded and reported daily
C-24 = 24-hour composite sample
Grab = grab sample
Flow through = test organisms are exposed to continuous effluent flow

Sampling Frequency:

Continuous/D = measured continuously, and recorded and reported daily
1/Hour = once per hour
1/Day =once per day
1/Week = once per week
1/Month = once per month
1/Quarter = once per quarter
1/Year = once per year

Footnotes:

[1] The effluent flow shall be the sum of the discharge flows at Discharge Point Nos. 001 and 002. Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:

- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Estimated monthly flow volume (MG) at each discharge point
- Maximum and minimum daily average flow rates (MGD)

During dry weather months or the non-discharge season, flow shall be adjusted to prevent double counting of plant recycle flows.

[2] Each oil and grease sampling and analysis event shall be conducted in accordance with U.S. EPA Method 1664A.

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

[4] Effluent residual chlorine concentrations shall be monitored continuously or, at a minimum, every hour. The Discharger shall describe all excursions of the chlorine limit in the transmittal letter of self-monitoring reports as required by Attachment G section V.C.1.a. If monitoring continuously, the Discharger shall report through data upload to CIWQS, from discrete readings of the continuous monitoring every hour on the hour, the maximum for each day and any other discrete hourly reading that exceeds the effluent limit, and, for the purpose of mandatory minimum penalties required by Water Code section 13385(i), compliance shall be based only on these discrete readings. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.

The Discharger may elect to use a continuous on-line monitoring system for determining that residual dechlorinating agent is present. This monitoring system may be used to prove that anomalous residual chlorine exceedances measured by on-line chlorine analyzers are false positives and are invalid total residual chlorine detections because it is chemically improbable to have chlorine present in the presence of sodium bisulfite. If Regional Water Board staff finds convincing evidence that chlorine residual exceedances are false positives, the exceedances are not violations of this Order's total chlorine residual limit.

[5] Effluent ammonia samples shall be collected on the same day as receiving water ammonia samples.

[6] If after one full discharge season (November through May) the Discharger has demonstrated full compliance with the bis(2-ethylhexyl)phthalate effluent limitation, the minimum monitoring frequency shall be reduced to twice per year. If the bis(2-ethylhexyl)phthalate effluent limitation is later exceeded, the Discharger shall return to sampling once per month for at least six consecutive months. If full compliance is demonstrated at the end of the six-month period, the Discharger may return to sampling just twice per year.

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

[8] Critical life stage toxicity tests shall be performed in accordance with MRP section V.B.

[9] Standard observations are specified in Attachment G section III.C.

[10] The Enterolert method may be used to demonstrate compliance. Results may be reported as Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.

B. Effluent Monitoring (Monitoring Locations EFF-001B)

When blending, the Discharger shall monitor effluent at Monitoring Location EFF-001B as follows when discharging to Miller Creek:

Table E-4. Effluent Monitoring (Monitoring Location EFF-001B)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	MG	Continuous	Continuous/D
Volume of partially treated wastewater[1]	MG	Calculated	1/Event
Duration of blending event [2]	hours	Calculated	1/Event
TSS	mg/L	C-24	1/Day
Enterococcus Bacteria [3]	MPN/100mL	Grab	1/Day
Chlorine Residual [4]	mg/L	Continuous/H	Continuous/H
BOD_5	mg/L	Grab or C-24	1/Year [6]
pH [5]	standard units	Continuous or Grab	1/Year [6]
Ammonia, Total	mg/L as N	Grab or C-24	1/Year [6]
Copper	µg/L	Grab or C-24	1/Year [6]
Nickel	µg/L	Grab or C-24	1/Year [6]
Cyanide	µg/L	Grab	1/Year [6]
Bis(2-Ethylhexyl)Phthalate	µg/L	Grab	1/Year [6]

Unit Abbreviations:

MG = million gallons
mg/L = milligrams per liter
mg/L as N = milligrams per liter as nitrogen
µg/L = micrograms per liter

Sample Type:

Continuous = measured continuously
Continuous/H =measured continuously (or, if infeasible, at least hourly), and recorded and reported daily
C-24 = 24-hour composite sample
Grab = grab sample

Sampling Frequency:

Continuous/D = measured continuously, and recorded and reported daily
1/Event = once per blending event
1/Day = once per day

1/Year = once per year

Footnotes:

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

[2] For each blending event, the Discharger shall report the date and time each event starts and ends.

[3] The Enterolert method may be used to demonstrate compliance. Results may be reported as Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFR/100 mL.

[4] Effluent residual chlorine concentrations shall be monitored continuously or, at a minimum, every hour. The Discharger shall describe all excursions of the chlorine limit in the transmittal letter of self-monitoring reports as required by Attachment G section V.C.1.a. If monitoring continuously, the Discharger shall report through data upload to CIWQS, from discrete readings of the continuous monitoring every hour on the hour, the maximum for each day and any other discrete hourly reading that exceed the effluent limit, and, for the purpose of mandatory minimum penalties required by Water Code section 13385(i), compliance shall be based only on these discrete readings. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.

The Discharger may elect to use a continuous on-line monitoring system for determining that residual dechlorinating agent is present. This monitoring system may be used to prove that anomalous residual chlorine exceedances measured by on-line chlorine analyzers are false positives and are invalid total residual chlorine detections because it is chemically improbable to have chlorine present in the presence of sodium bisulfite. If Regional Water Board staff finds convincing evidence that chlorine residual exceedances are false positives, the exceedances are not violations of this Order's total chlorine residual limit.

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

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

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor whole effluent acute and chronic toxicity at Monitoring Location EFF-001 as follows when discharging to Miller Creek:

A. Whole Effluent Acute Toxicity

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

2. Test organisms shall be rainbow trout (*Onchorhynchus mykiss*). The Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.

3. All bioassays shall be performed according to the most up-to-date protocols in 40 C.F.R. part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,* 5th Edition (EPA-821-R-02-012).

4. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment. The Discharger may manually adjust the pH of whole effluent acute toxicity samples prior to performing bioassays to minimize ammonia toxicity interference.

5. Bioassay water monitoring shall include, on a daily basis, pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If final or intermediate results of an acute bioassay test indicate a violation or threatened

violation (e.g., the percentage of surviving test organisms is less than 70 percent), the Discharger shall initiate a new test as soon as practical and shall investigate the cause of the mortalities and report its findings in the next self-monitoring report. The Discharger shall repeat the test 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. Monitoring Requirements

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

b. Test Species. The test species shall be *Mysidopsis bahia*. If using this species proves unworkable, the Executive Officer may specify a different species in writing upon the Discharger's request with justification

The Discharger shall conduct a screening chronic toxicity test as described in Appendix E-1, or as described in applicable State Water Board plan provisions that become effective after adoption of this Order, following any significant change in the nature of the effluent. If there is no significant change in the nature of the effluent, the Discharger shall conduct a screening test and submit the results with its application for permit reissuance.

c. Frequency. Chronic toxicity monitoring shall be as specified below:

i. The Discharger shall monitor routinely once per quarter.

ii. The Discharger shall conduct a toxicity identification evaluation (TIE) when there is an exceedance of the chronic toxicity limitation.

iii. The Discharger shall accelerate monitoring to monthly if the TIE indicates that a pollutant or pollutants other than pyrethroids causes or contributes to the toxicity and routine monitoring exceeds either a three-sample median of 1 chronic toxicity unit (TU_c) or a single-sample maximum of 2 TU_c. Based on the TU_c results, the Executive Officer may specify a different frequency for accelerated monitoring to ensure that accelerated monitoring provides useful information.

iv. The Discharger shall return to routine monitoring if accelerated monitoring does not exceed either trigger in iii, above.

v. If accelerated monitoring confirms consistent toxicity in excess of either trigger in iii, above, the Discharger shall initiate toxicity reduction evaluation (TRE) procedures in accordance with section V.B.3, below.

vi. The Discharger shall return to routine monitoring after implementing appropriate elements of the TRE, and either the toxicity drops below both triggers in iii, above, or, based on the TRE results, the Executive Officer determines that accelerated monitoring would no longer provide useful information.

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

d. Methodology. Sample collection, handling, and preservation shall be in accordance with U.S. EPA 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). If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the chronic toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment.

e. Dilution Series. The Discharger shall conduct tests at 100%, 70%, 40%, 20%, 10%, and 5%. The "%" represents percent effluent as discharged. Test sample pH may be controlled to the level of the effluent sample as received prior to being salted up.

2. Reporting Requirements

a. The Discharger shall provide toxicity test results for the current reporting period in the self-monitoring report and shall include the following, at a minimum, for each test:

i. Sample date

ii. Test initiation date

iii. Test species

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

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

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

vii. TU_c values (100/NOEL, where NOEL = IC_{25}, EC_{25}, or NOEC)

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

ix. IC_{50} or EC_{50} values for reference toxicant tests

x. Available water quality measurements for each test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, and ammonia)

b. The Discharger shall provide the results of the most recent three chronic toxicity tests and the three-sample median in the self-monitoring report.

3. Toxicity Reduction Evaluation (TRE)

a. 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 so that it remains current and applicable to the discharge and discharge facilities.

b. Within 30 days of exceeding either chronic toxicity trigger in section V.B.1.c.iii, above, the Discharger shall submit a TRE work plan, which shall be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.

c. Within 30 days of completing an accelerated monitoring test observed to exceed either trigger in section V.B.1.c.iii, above, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.

d. The TRE shall be specific to the discharge and be in accordance with current technical guidance and reference materials, including U.S. EPA guidance materials. The Discharger shall conduct the TRE as a tiered evaluation as summarized below:

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

ii. Tier 2 shall consist of evaluation of treatment process optimization, including operational practices and in-plant process chemicals.

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

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

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

vi. Tier 6 shall consist of implementation of selected toxicity control measures and followup monitoring and confirmation of implementation success.

e. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity above the triggers in section V.B.1.c.iii, above.

f. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. The Discharger shall employ all reasonable efforts using currently available TIE methodologies.

g. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the toxic substances from the discharge. The Discharger shall take all reasonable steps to reduce toxicity to levels below the chronic toxicity limit.

h. Many recommended TRE elements parallel required or recommended efforts related to source control, pollution prevention, and stormwater control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to demonstrate compliance with TRE requirements.

VI. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall continue to participate in the Regional Monitoring Program, which collects data on pollutants and toxicity in San Francisco Bay's water, sediment, and biota. The Discharger shall monitor receiving waters at Monitoring Locations RSW-001 and RSW-002 as follows when discharges to Miller Creek are occurring:

Table E-5. Receiving Water Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	1/Month
Temperature	°C	Grab	1/Month
Hardness	mg/L as $CaCO_3$	Grab	1/Month
Salinity	ppt	Grab	1/Month
Total Ammonia	mg/L as nitrogen	Grab	1/Month
Standard observations [1]	---	Observations	1/Month

Unit Abbreviations:

°C = degrees Celsius
mg/L= milligrams per liter
ppt = parts per thousand

Sample Type:

Grab= Grab sample

Sampling Frequency:

1/Month = once per month

Footnote:

[1] Standard observations are specified in Attachment G section III.C.

VII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

B. Self-Monitoring Reports (SMRs)

1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Web site (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS website will provide additional information for SMR submittal in the event of a planned service interruption for electronic submittal.

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

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

   Monthly SMRs shall include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

   b. **Annual SMR —** Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the items described in sections V.C.1.f of Attachment G. See also Provisions VI.C.2 (Effluent and Receiving Water Characterization Study and Report) and VI.C.4.a (Sludge and Biosolids Management) of the Order for requirements to submit reports with the annual SMR.

   c. **Specifications for Submitting SMRs to CIWQS —** The Discharger shall submit analytical results and other information using one of the following methods:

Table E-6. CIWQS Reporting

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	**Attached File**
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)	Required for all results	
Dissolved Oxygen Temperature	Required for monthly maximum and minimum results only [1]	Discharger may use this method for all results or keep records

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	**Attached File**
Antimony Arsenic Beryllium Cadmium Chromium Copper Cyanide Lead Mercury Nickel Selenium Silver Thallium Zinc Dioxins and Furans (by U.S. EPA Method 1613) Other Pollutants (by U.S. EPA methods 601, 602, 608, 610, 614, 624, and 625)	Required for all results [2]	
Volume and Duration of Blended Discharge [3]	Required for all blended effluent discharges	
Analytical Method	Not required (Discharger may select "data unavailable") [1]	
Collection Time Analysis Time	Not required (Discharger may select "0:00") [1]	

Footnotes:

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

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

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

The Discharger shall arrange all reported data in a tabular format and summarize data to clearly illustrate whether the Facility is operating in compliance with effluent limitations. The Discharger is not required to duplicate the submittal of data 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, the Discharger shall electronically submit the data in a tabular format as an attachment.

3. **Monitoring Periods.** Monitoring periods for all required monitoring shall be as set forth below unless otherwise specified:

Table E-7. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On[1]…	Monitoring Period
Continuous	Permit effective date	All
1/Hour	Permit effective date	Hourly
1/Day	Permit effective date	Midnight through 11:59 p.m.
1/Week	Sunday following (or on) permit effective date	Sunday through Saturday

Sampling Frequency	Monitoring Period Begins On[1]…	Monitoring Period
1/Month	First day of calendar month following (or on) permit effective date	First day of calendar month through last day of calendar month
1/Quarter	Closest November 1 or February 1 before or after permit effective date	November 1 through January 31 February 1 through April 30 May 1 through October 31 (if discharging)
1/Year	Closest January 1 before or after permit effective date	January 1 through December 31
2/Year	Closest November 1 or February 1 before or after permit effective date	November 1 through January 31 February 1 through April 30
1/5 Years	Permit effective date	Once during Order term no more than 12 months prior to applying for permit reissuance.

Footnote:

[1] Monitoring performed during the previous order term may be used to satisfy monitoring required by this Order.

4. **Reporting Level (RL) and Method Detection Limit (MDL) Reporting.** The Discharger shall report with each sample result the RL and MDL as determined by the procedure in 40 C.F.R. 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 RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

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

   For purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+/- a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

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

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

5. **Compliance Determination**

   Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in the Fact Sheet and Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, 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).

C. Discharge Monitoring Reports (DMRs)

1. The State Water Board has notified the Discharger to electronically submit DMRs. If such notification is rescinded, the Discharger shall submit DMRs in accordance with the requirements described below.

2. The Discharger shall submit hard copy DMRs. The Discharger shall sign and certify DMRs as Attachment D requires. The Discharger shall submit DMRs to one of the addresses listed below:

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

3. All discharge monitoring results shall be reported on official U.S. EPA pre-printed DMR forms (EPA Form 3320-1) or self-generated forms that follow the exact same format as EPA Form 3320-1.

VIII. MODIFICATIONS TO ATTACHMENT G

This MRP modifies Attachment G as indicated below:

A. Attachment G section V.C.1.c.2 is revised as follows:

2) When determining compliance with an average monthly effluent limitation or maximum daily effluent limitation, 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 nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

   If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in

the effluent above an effluent limitation and the Discharger conducts a Pollutant Minimization Program, the Discharger shall not be deemed out of compliance.

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

f. Annual self-monitoring report requirements

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

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

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

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

4) List of approved analyses, including the following:

(i) List of analyses for which the Discharger is certified;

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

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

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

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

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

g. Report submittal

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

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

h. Reporting data in electronic format – *Deleted*

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

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants[1]

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

a. Two (2)-Hour Notification

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

1) Incident description and cause;

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

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

3) Date and time the unauthorized discharge started;

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

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

6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification – *Deleted*

c. 5-day Written Report

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

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

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

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

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

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

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

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

d. Communication Protocol – *Deleted*

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 U.S. EPA's Bootstrap Procedure.

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

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

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

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

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

1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables.

2. Two stages:

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

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

3. Appropriate controls.

4. Concurrent reference toxicant tests.

5. Dilution series of 100%, 50%, 25%, 12.5%, 6.25%, and 0 %, where "%" is percent effluent as discharged, or as otherwise approved the Executive Officer if different dilution ratios are needed to reflect discharge conditions.

C. The Discharger shall submit a screening phase proposal. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharger 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 Larval development	1 hour 72 hour	2
Shrimp	*(Americamysis bahia)*	Percent survival; growth	7 days	3
Shrimp	*(Holmesimysis costata)*	Percent survival; growth	7 days	2
Topsmelt	*(Atherinops affinis)*	Percent survival; growth	7 days	2
Silversides	*(Menidia beryllina)*	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.

2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.

3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/821/R-02/014. October 2002.

Table AE-2. Critical Life Stage Toxicity Tests for Fresh Waters

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

Toxicity Test Reference:

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

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

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

[1] (a) Marine refers to receiving water salinities greater than 1 part per thousand (ppt) at least 95 percent of the time during a normal water year.
(b) Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.
(c) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.

[2] The freshwater species may be substituted with marine species if:
(a) The salinity of the effluent is above 1 ppt greater than 95 percent of the time, or
(b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

ATTACHMENT F - FACT SHEET

Contents

Tables

ATTACHMENT F – FACT SHEET

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order. As described in section II.B of the Order, the Regional Water Board incorporates this Fact Sheet as its findings supporting the issuance of the Order.

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
Facility Name	Las Gallinas Valley Sanitary District Sewage Treatment Plant and its wastewater collection system
Facility Address	300 Smith Ranch Road San Rafael, CA 94903 Marin County
Facility Contact, Title, 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
Facility Type	Publicly-Owned Treatment Works (POTW)
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	No
Reclamation Requirements	Order Nos. 89-127, 92-064, and 96-011
Mercury and PCBs Requirements	NPDES Permit No. CA0038849
Nutrients Requirements	NPDES Permit No. CA0038873
Permitted Flow	2.92 million gallons per day (MGD)
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	Estuarine

A. The Las Gallinas Valley Sanitary District (Discharger) is the owner and operator of the Las Gallinas Valley Sanitary District Sewage Treatment Plant and its wastewater collection system (collectively, the Facility), which provide secondary treatment of the wastewater collected from its service area. During the wet season, the Facility discharges treated effluent to Miller Creek, a water of the United States within the San Pablo Bay watershed. During the dry season, the Discharger stores effluent onsite or reclaims it (i.e., does not discharge it to Miller Creek).

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

B. The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037851. It was previously subject to Order No. R2-2009-0070 (previous order), which was adopted on October 14, 2009, expired on November 30, 2014, and was administratively extended by operation of law. The Discharger was also subject to Cease and Desist Order No. R2-2009-0071, which addressed the Discharger's inability to comply with the previous order's copper effluent limits.

C. The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its WDRs and NPDES permit on June 3, 2014.

D. The Discharger is also regulated under Water Reuse Order No. 89-127, Water Reuse Order No. 92-064, and General Water Reuse Order No. 96-011, which establish requirements on water reclamation and reuse. This Order does not affect those orders.

E. The discharge is also regulated under NPDES Permit Nos. CA0038849 and CA0038873, which establish requirements on mercury and polychlorinated biphenyls (PCBs), and nutrients. This Order does not affect those permits.

II. FACILITY DESCRIPTION

A. Wastewater and Biosolids Treatment and Controls

1. **Location and Service Area.** The treatment plant is located at 300 Smith Ranch Road in San Rafael. It provides primary and secondary treatment of domestic wastewater collected from the northern area of the City of San Rafael and unincorporated portions of Marin County. The service area population is approximately 30,000. Attachment B provides a map of the area around the Facility.

2. **Collection System.** The collection system consists of 105 miles of gravity-flow sanitary sewer lines and 6.7 miles of pressure sewers, which range in diameter from 6 to 30 inches. There are 28 lift stations. Several small satellite collection systems connect to the Facility. The largest are two mobile home parks that contribute approximately 2.6 percent and 2.0 percent of the treatment plant flow. The remaining satellite systems are much smaller.

3. **Wastewater Treatment.** The plant has a dry weather flow design capacity of 2.92 million gallons per day (MGD) and can treat up to approximately 9 MGD with full secondary treatment (although its reliable process capacity is 8 MGD). From December 2009 through October 2014, the average dry weather effluent flow was 2.11 MGD (determined from July through September) and its average wet weather effluent flow was 3.23 MGD (determined from November through April). The maximum daily effluent flow was 12.36 MGD.

   Treatment processes include two mechanically-cleaned fine screens, two aerated grit chambers, one 80-foot diameter primary clarifier/flow equalization basin, two 65-foot diameter primary clarifiers, two trickling filters, a secondary clarifier, a fixed film reactor for nitrification, eight coarse media (anthracite) deep-bed filters, and two underground chlorine contact basins.

Disinfection occurs using sodium hypochlorite and dechlorination using sodium bisulfite. Treated effluent is discharged to Miller Creek during the wet season. During the dry season, treated effluent is routed to an onsite reclamation system and re-used (see Fact Sheet section II.A.4). In the event of high wastewater flows resulting from early or late season storms, treated and dechlorinated effluent may be discharged to Miller Creek. Attachment C provides Facility flow schematics.

Due to high inflow and infiltration during wet weather, the Discharger sometimes blends primary-treated wastewater with secondary-treated wastewater prior to discharge. Flows up to 8 MGD (and potentially up to 9 MGD) receive full secondary treatment. Any additional flows are diverted around the secondary treatment units and blended with secondary-treated effluent. After disinfection, the blended flow is dechlorinated prior to discharge. The following summarizes operations at varying influent flows:

a. Flows up to approximately 6.9 MGD receive secondary treatment, plus nitrification, deep bed filtration, and disinfection. (The maximum flow rate through the deep bed filters can be less than 6.9 MGD depending on loads and other operating conditions.)

b. Flows above approximately 6.9 MGD and up to 8 MGD (and possibly 9 MGD) receive secondary treatment and disinfection.

c. Flows above 8 or 9 MGD and up to 21.6 MGD receive primary treatment, and partial deep bed filtration, and disinfection before blending with secondary-treated flows.

d. Flows above 21.6 and up to 25 MGD (the plant's peak hydraulic capacity) receive primary treatment and disinfection before blending.

4. **Water Recycling Activities**. During dry weather (June through October, plus May when conditions allow), treated effluent is reclaimed onsite in accordance with Order No. 92-064. The onsite reclamation system consists of two 20-acre storage ponds, a 20-acre freshwater marsh/wildlife pond, and 200 acres of irrigated pasture. The storage ponds dechlorinate the effluent through natural processes. The Discharger returns surplus water remaining in the storage ponds at the end of the reclamation season to the plant for treatment before discharge to Miller Creek.

   Plant effluent and water from the storage ponds are also used by the Marin Municipal Water District as feedstock in its recycled water plant, which produces disinfected tertiary recycled water during summer for distribution throughout its northern San Rafael service area. The recycled water is used for landscape irrigation and other approved uses. From 2010 through 2013, the average effluent volume recycled was 170 million gallons per year, approximately 16.5 percent of the Discharger's annual effluent volume. The recycled water project is permitted under Water Reuse Order No. 89-127, issued jointly to the Marin Municipal Water District and the Discharger.

   Since 2012, the Discharger has begun operating its own onsite water recycling facility. The Las Gallinas Recycled Water Facility produces disinfected tertiary recycled water by further treating the secondary effluent using ultrafiltration and ultraviolet disinfection. The North Marin Water District transmits and distributes this recycled water for irrigation in the southern Novato area. During 2013, the first full year of its operation, 47 million gallons of the effluent (4.6 percent of annual effluent volume) was recycled through the North Marin Water District system. The

Discharger and the North Marin Water District are permitted separately (as producer and distributor) under General Reuse Order No. 96-011.

5. **Sludge and Biosolids Management.** Grit, screenings, and a portion of the skimmed material is placed in the Redwood Sanitary Landfill. Other solids are treated by gravity thickening and anaerobic digestion in primary and secondary digesters and then pumped to three sludge storage lagoons. Solids from the Marin Municipal Water District recycled water plant are also pumped through the plant or directly to the sludge storage lagoons. The sludge storage lagoons are double-lined and have a total capacity of approximately 3.2 million gallons. Biosolids are ultimately disposed of onsite at the Discharger's 9-acre land disposal site.

6. **Stormwater Management**. All stormwater within the plant boundaries, excluding the reclamation area, is directed to the plant headworks; therefore, coverage under the statewide permit for discharge of stormwater associated with industrial activities (NPDES General Permit No. CAS000001) is not required. Stormwater accumulated in the storage ponds at the reclamation area may be recycled as described above or routed to the headworks. Direct discharge to Miller Creek is prohibited (see Discharge Prohibition III.B).

B. Discharge Points and Receiving Waters

There are two discharge points (001 and 002) to Miller Creek, which flows to San Pablo Bay. The plant is located slightly over 1 mile upstream from San Pablo Bay. Under normal conditions, plant effluent is split between Discharge Point Nos. 001 and 002, with the majority discharged at Discharge Point No. 002, which is located about 1,200 feet downstream of Discharge Point No. 001 and 4,600 feet upstream from San Pablo Bay. Under higher flow conditions, the majority of treated effluent is discharged at Discharge Point No. 001.

C. Summary of Existing Requirements and Monitoring Data

Effluent limitations contained in the previous order and representative monitoring data from the previous order term are presented below:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Period	Effluent Limitations			Monitoring Data (12/09–05/14)		
			Monthly Average	Weekly Average	Daily Maximum	Highest Average Monthly	Highest Average Weekly	Highest Daily Discharge
Biochemical Oxygen Demand, 5-day @ 20°C (BOD_5)	mg/L	November – April	30	45	---	11	16	---
		May	20	25	30	9	19	24
Total Suspended Solids (TSS)	mg/L	November – April	30	45	---	8.5	16	---
		May	15	18	20	6.2	13	18
Oil and Grease	mg/L	November – April	10	---	20	4.8 [1]	---	4.8 [1]
		May	5	---	15	<5	---	<5
Ammonia	mg/L as N	November – April	10	---	18	7.9	---	11
		May	6	---	---	3	---	---

Parameter	Units	Period	Effluent Limitations			Monitoring Data (12/09–05/14)		
			Monthly Average	Weekly Average	Daily Maximum	Highest Average Monthly	Highest Average Weekly	Highest Daily Discharge
BOD_5 Percent Removal	%	November – May	85 (minimum)	---	---	93	---	---
TSS Percent Removal	%		85 (minimum)	---	---	94	---	---
pH	s.u.		6.5 – 8.5 [2]			---	---	6.5 (min) 8.1 (max)
Chlorine Residual	mg/L		0.0 [3]			---	---	0
Enterococcus Bacteria	MPN/ 100 mL		35[4]	---	---	8	---	---
Copper	µg/L		---	---	14[5]	9.4	---	9.7
Lead	µg/L		4.1	---	7.1	0.7	---	0.9
Nickel	µg/L		11	---	18	5.9	---	7.5
Selenium	µg/L		3.6	---	9.2	0.60	---	0.74
Cyanide	µg/L		6.9	---	14	6.2	---	9.4
Dioxin-TEQ	µg/L		$1.4x10^{-8}$	---	$2.8x10^{-8}$	$2.6 x10^{-9}$	---	$2.6 x10^{-9}$
Acute Toxicity	% survival		70[6]	---	90[6]	---	---	100
Chronic Toxicity	TU_c		--- [7]			---	---	8

Unit Abbreviations:

mg/L = milligrams per liter
µg/L = micrograms per liter
s.u. = standard units
MPN/100 mL = most probable number per 100 milliliters
mg/L as N = milligrams per liter as nitrogen
% = percent
TU_c = chronic toxicity units, equal to 100/NOEL, where NOEL = IC_{25}, EC_{25}, or NOEC

Footnotes:

[1] Estimated value.

[2] Instantaneous minimum and maximum.

[3] Instantaneous maximum.

[4] Five-sample median.

[5] Interim copper effluent limit pursuant to Cease and Desist Order No. R2-2009-0071 (previous order's copper effluent limits were an average monthly limit of 8.6 µg/L and a maximum daily limit of 11 µg/L).

[6] The limitations were an 11-sample median greater than 90% survival, and an 11-sample 90^{th} percentile greater than 70% survival.

[7] The limitation was "no chronic toxicity in the discharge."

D. Compliance Summary

The Discharger violated its effluent limitation once during the previous order term on November 30, 2013, when it reported an instantaneous maximum total residual chlorine concentration of 0.13 mg/L that lasted no more than three minutes due to flow spiking and bisulfite analyzer malfunctioning. The effluent limitation was 0.0 mg/L. The Regional Water Board will consider an appropriate enforcement for this violation, which will include at a minimum a mandatory minimum penalty of $3,000.

As a result of observed chronic toxicity, the Discharger accelerated monitoring and conducted toxicity identification evaluations as required by the previous order. Further details of the results

of these efforts as well as the Discharger's actions in response are provided in section III.C.1.e.ii, below.

To the extent that some sanitary sewer overflows (SSOs) reached waters of the U.S., the Discharger would have violated Prohibition III.D of the Order. The table below shows the Discharger's SSO rates (total SSOs per 100 miles of collection system for each of the past three years) and other information together with those for the county and region:

Table F-3. Collection System and SSO Rates (SSOs/100 miles)
(Values based on CIWQS data analysis completed in January 2014)

	Length (miles)	Average Age (years)	2011	2012	2013
Las Gallinas Valley Sanitary District	111.7	52	1.8	7.2	2.7
Marin County median of 4 large systems (≥100 miles)	173	55	11.5	12.4	7.4
San Francisco Bay Region median of 45 large systems (≥100 miles)	230	50	5.1	5.0	4.5
San Francisco Bay Region median of all 132 systems	41	45	4.0	4.6	4.5

The SSO rate of the Discharger's collection system is, by and large, low when compared to Marin County and the San Francisco Bay Region medians. During the previous order term, the Discharger spent approximately $4.8 million in collection system capital projects, which rehabilitated approximately 3 miles, or 2.7 percent, of the Discharger's 111.7-mile system. The Discharger plans to budget $1.5-2 million annually over the next five years for collection system improvements. Because of the average age of the system, Regional Water Board staff will be monitoring the adequacy of the Discharger's collection system capital improvement activities yearly during this Order's term.

E. Planned Changes

The Discharger is in the process of implementing treatment alternatives it envisioned in 2012 to reduce blending during wet weather. The conceptual design is still in progress, but the alternatives will likely include construction of an additional secondary clarifier, a flow equalization basin (1.0 to 1.2 million gallons), and an activated sludge process unit. The new facilities would be at a higher elevation than the existing facilities in anticipation of sea-level rise. These projects, with an anticipated cost of $30 million, will not affect the discharge location or quantity, or decrease discharge quality.

F. Blending Summary

Blending occurred 51 times over the previous order term, totaling approximately 138 million gallons or 4.6 percent of total influent flow during the last five years. Based on available data, no violation of effluent limitations occurred when blending.

In compliance with the previous order, the Discharger implemented various corrective measures identified in its May 1, 2010, *Wet Weather Improvement Report* to reduce blending, including the following:

- Conversion and rehabilitation of two existing intermediate clarifiers to serve as parallel primary clarifiers #2 and #3, increasing the secondary treatment capacity from 8 MGD to approximately 9 MGD (completed in 2012);

- Rehabilitation of over three miles of sewer mains and associated manholes and lower laterals, providing in-system storage and reducing inflow and infiltration (additional rehabilitation ongoing);

- Implementation of the *Capacity, Management, Operation and Maintenance (CMOM) Program*, including video inspections (112 miles between 2009-2013) and smoke testing (>15 miles) of sewer mains (project ongoing);

- Creation of the *Private Sewer Lateral Rehabilitation Assistance Program* through the adoption of Ordinance No. 153 (completed in 2012).

In 2012, the Discharger retained the consulting firm Brown and Caldwell to perform a broader evaluation of future secondary treatment alternatives and to develop a preferred path to minimize blending. Provision VI.C.5.b of the Order and Fact Sheet section VI.C.5.b describes activities the Regional Water Board deems feasible to be undertaken within the term of this Order to improve management of wet weather flows and reduce blending.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements in this Order are based on the requirements and authorities described below:

A. Legal Authorities

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

B. California Environmental Quality Act

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act, Public Resources Code division 13, chapter 3 (commencing with § 21100).

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, this Order implements State Water Board Resolution No. 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on Miller Creek, total dissolved solids levels commonly exceed 3,000 mg/L; therefore, these waters meet an exception to State Water Board Resolution No. 88-63. The Basin Plan identifies the beneficial uses of Miller Creek as follows:

Table F-4. Beneficial Uses

Discharge Points	Receiving Water	Beneficial Uses
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) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD)

2. **Thermal Plan.** The State Water Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) on January 7, 1971, and amended this plan on September 18, 1975. This plan contains temperature objectives for surface waters. Under the Thermal Plan, the discharge is considered an existing estuarine discharge of elevated temperature waste. Requirements of this Order implement the Thermal Plan.

3. **Sediment Quality.** The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* on September 16, 2008, and it became effective on August 25, 2009. This plan supersedes other narrative sediment quality objectives, and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries. This Order implements the sediment quality objectives of this plan.

4. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.

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

6. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 requires that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, "*Statement of Policy with Respect to Maintaining High Quality of Waters in California*," which is deemed to incorporate the federal antidegradation policy where

the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

7. **Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

8. **Endangered Species Act Requirements.** 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 §§ 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 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, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable endangered species act requirements.

9. **Recycled Water Policy.** The State Water Board adopted Resolution No. 2009-0011 on February 3, 2009, titled *Policy for Water Quality Control for Recycled Water*, which is intended to promote sustainable local water supplies by increasing acceptance and promoting the uses of recycled water. The policy sets a goal to increase the use of recycled water statewide by at least one million acre feet per year over 2002 levels by 2020 and by at least two million acre feet per year by 2030. The policy also requires Regional Water Boards to exercise their authority to the fullest extent possible to encourage the use of recycled water and to develop watershed-based salt and nutrient management plans to ensure the use of recycled water does not degrade groundwater resources.

D. Impaired Waters on CWA 303(d) List

In October 2011, U.S. EPA approved a revised list of impaired waters prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt 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 water quality standards for the impaired waters.

Miller Creek is a tributary to San Pablo Bay, which in turn is part of San Francisco Bay. San Francisco Bay is listed as impaired by chlordane, DDT, dieldrin, dioxins and furans, exotic species, mercury, PCBs and dioxin-like PCBs, selenium, and nickel. On February 12, 2008, U.S. EPA approved a TMDL for mercury in San Francisco Bay. On March 29, 2010, U.S. EPA approved a TMDL for PCBs in San Francisco Bay. The TMDLs for mercury and PCBs are incorporated into the Basin Plan and apply to this discharge; however, mercury and PCBs discharges are not covered by this Order. Instead, they are regulated under NPDES Permit No. CA0038849.

Miller Creek is listed as impaired by diazinon, a pesticide found in urban runoff. Basin Plan section 7.1.1 contains a TMDL for diazinon and pesticide-related toxicity in urban creeks, including Miller Creek. The TMDL does not apply to the Facility because the Facility does not discharge urban runoff.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of receiving waters.

A. Discharge Prohibitions

1. Prohibitions in this Order

a. Discharge Prohibition III.A (No discharge other than as described in this Order): This prohibition is based on 40 C.F.R. section 122.21(a) and Water Code section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the application and Report of Waste Discharge, and subsequently in this Order, are prohibited.

b. Discharge Prohibition III.B (Discharge to Miller Creek is prohibited from June 1 through October 31): The Basin Plan (Chapter 4, Table 4-1, Discharge Prohibition No. 1) prohibits discharges not receiving a minimum 10:1 initial dilution or to dead-end sloughs. Miller Creek is a tidally-influenced perennial stream. While there may be some dilution of the discharge from tidal flushing, the Discharger has not demonstrated that the discharge receives 10:1 initial dilution. Moreover, during the dry season, dilution would be lower because of low creek flows. Therefore, this Order prohibits discharges to Miller Creek during this period with the exception of discharges that are necessary as a result of wet weather that would also increase ambient flows in the creek. As explained in Fact Sheet section IV.A.2 below, this Order grants an exception to Discharge Prohibition No. 1 for wet weather discharges.

c. Discharge Prohibition III.C (No bypass of untreated wastewater): This prohibition is based on 40 C.F.R. section 122.41(m) (see Attachment D section I.G). This Order allows bypass of secondary treatment when the influent flow exceeds 8 MGD (the reliable process capacity of the secondary treatment system) and onsite storage and equalization facilities have been optimized. Under such conditions, excess flows are permitted to bypass secondary (biological) treatment and be blended with the secondary-treated flow. All flows must be disinfected prior to discharge and comply with all effluent limitations. Such blending is allowed because the Discharger has shown through a *No Feasible Alternatives Analysis*, dated June 3, 2014, that it meets the three criteria specified in 40 C.F.R. section 122.41(m)(4)(i)(A)-(C):

i. *Bypass is unavoidable to prevent loss of life, personal injury, or severe property damage.* The reliable process capacity of the secondary treatment system is 8 MGD. Above 8 MGD, washout of microbial populations critical to complying with secondary treatment standards is possible. Blending also prevents sewer backups and overflows in basements and streets.

ii. *There are no feasible alternatives to the bypass.* The Discharger has no feasible alternative at this time but to continue wet weather blending. During the previous order term, the Discharger implemented feasible measures to reduce the volume, duration, and occurrence of wet weather blending events (see Fact Sheet section II.F). The Discharger has evaluated the following alternatives for future actions:

(a) Reduce peak flows to less than 8 MGD by reducing inflow and infiltration to the collection system;

(b) Construct new secondary treatment facilities with capacity up to 18 MGD;

(c) Construct a 1.2 million-gallon onsite flow equalization basin; and

(d) Continue ongoing collection system improvements.

The first alternative is infeasible because it would involve replacing thousands of privately-owned sewer laterals at a cost of approximately $30 million to $50 million with uncertain results. The other alternatives are feasible; therefore, the Discharger will increase the plant's flow equalization capacity and secondary treatment capacity and continue its collection system improvement projects. These actions are expected to cost $30 million to $40 million or more. Provision VI.C.5.b of this Order sets forth specific requirements to accomplish these actions.

iii. *The Discharger submitted notice at least ten days before the date of the bypass.* The Discharger provided notice of its ongoing need to blend during wet weather with its Report of Waste Discharge and *No Feasible Alternatives Analysis*. It provided these documents more than ten days prior to any bypass subject to this Order.

d. Discharge Prohibition III.D (Average dry weather influent flow not to exceed dry weather design capacity of 2.92 MGD): This prohibition is based on the plant's design treatment capacity. Exceeding the average dry weather design capacity could lower the reliability of complying with this Order's requirements.

e. Discharge Prohibition III.E (No sewer overflows): The CWA and Basin Plan (Chapter 4, Table 4-1, Discharge Prohibition No. 15) prohibit the discharge of wastewater to surface waters, except as authorized under an NPDES permit. Publicly-owned treatment works must achieve secondary treatment standards at a minimum and any more stringent limitations necessary to meet water quality standards (33 U.S.C. § 1311[b][1][B] and [C]). A sanitary sewer overflow that results in the discharge of raw sewage or wastewater not meeting this Order's effluent limitations to surface waters is therefore prohibited under the CWA and the Basin Plan.

2. Exception to Shallow Water Discharge Prohibition

The Basin Plan (Chapter 4, Table 4-1, Discharge Prohibition 1) prohibits discharges not receiving a minimum initial dilution of at least 10:1 and discharges into shallow waters or dead-end sloughs. Basin Plan section 4.2 provides for exceptions under certain circumstances:

- 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;
- A discharge is approved as part of a reclamation project;
- Net environmental benefits will be derived as a result of the discharge; or
- A discharge is approved as part of a groundwater cleanup project.

The Basin Plan 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 consequence of such discharges.

This Order continues to grant an exception to Basin Plan Discharge Prohibition 1 during the wet season (and wet weather conditions) based on the following:

a. Moving the Discharger's outfall to deep water (i.e., offshore into San Pablo Bay at a depth adequate to achieve 10:1 initial dilution) would be an inordinate burden because such relocation would require pipeline construction through wetlands, which would not only be costly but would also inevitably disturb the wetland habitats.

b. From November through April, the Discharger provides an equivalent level of environmental protection by providing advanced secondary treatment through nitrification and deep bed filtration. During authorized wet weather discharge events outside November through April, the Discharger meets more stringent ammonia limits, and more stringent biochemical oxygen demand (BOD) and total suspended solids (TSS) limits than federal secondary treatment standards require. Moreover, Provision VI.C.5.a of this Order provides additional assurance by requiring the Discharger to develop and maintain a Facility Reliability Assurance Plan that describes, among other things, measures or safeguards in place to ensure the reliability of the system in preventing inadequately treated wastewater from being discharged.

The Discharger continues to reduce the discharges by maintaining and implementing various water reclamation and recycling projects.

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

Table F-5. Secondary Treatment Requirements

Parameter	Monthly Average	Weekly Average
BOD_5[1]	30 mg/L	45 mg/L
$CBOD_5$[1]	25 mg/L	40 mg/L
TSS	30 mg/L	45 mg/L
pH	6.0 – 9.0 standard units	

Unit Abbreviation:

mg/L= milligrams per liter

Footnote:

[1] $CBOD_5$ effluent limitations may be substituted for BOD_5 limitations.

2. Effluent Limitations

a. BOD_5 and TSS. BOD_5 and TSS effluent limitations between November and April, including the 85 percent removal requirements, are based on the secondary treatment standards and Basin Plan Table 4-2. BOD_5 and TSS effluent limitations for May and other wet weather periods are more stringent than those that the federal secondary treatment standards and Basin Plan require. They represent advanced secondary treatment and serve as a basis for this Order's exception to Basin Plan Discharge Prohibition 1 (see Fact Sheet section IV.A.2). They are unchanged from the previous order.

b. Oil and Grease. The oil and grease effluent limitations between November and April are based on Basin Plan Table 4-2. Those for May and other wet weather periods are more stringent than those the Basin Plan requires. They represent a higher level of treatment and serve as a basis for this Order's exception to Basin Plan Discharge Prohibition 1 (see Fact Sheet section IV.A.2). They are unchanged from the previous order.

c. pH. The pH effluent limitations are based on the Basin Plan Table 4-2 for discharge to shallow water.

d. Chlorine Residual. The chlorine residual effluent limitation is based on Basin Plan Table 4-2. The MRP provides an allowance for determining false positives when using continuous devices based on the fact that continuous instruments occasionally have anomalous spikes and it is chemically improbable to have free chlorine present in the presence of sulfur dioxide.

e. Enterococcus. The enterococcus effluent limitation is based on Basin Plan Table 4-2A.

f. Ammonia. The total ammonia effluent limitations are retained from the previous order to avoid backsliding and to ensure that the Discharger maintains its nitrification performance. They serve as a basis for this Order's exception to Basin Plan Discharge Prohibition 1 (see Fact Sheet section IV.A.2).

C. Water Quality-Based Effluent Limitations

1. Scope and Authority

For toxic pollutants, this Order contains Water Quality Based Effluent Limitations (WQBELs) that implement water quality objectives that protect beneficial uses. CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards. According to 40 C.F.R. section 122.44(d)(1)(i), permits must include effluent limitations for all pollutants that are or may be discharged at levels that have a 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, WQBELs must be established using (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting a narrative criterion, supplemented with relevant information (40 C.F.R. § 122.44[d][1][vi]). The process for determining reasonable potential and calculating WQBELs is intended to achieve applicable water quality objectives and criteria and protect designated beneficial uses of receiving waters as specified in the Basin Plan. This Order imposes numeric effluent limitations for toxic pollutants with reasonable potential to cause or contribute to exceedances of water quality standards.

2. Water Quality Criteria and Objectives

a. Basin Plan Objectives. The Basin Plan specifies numeric water quality objectives for 10 priority pollutants and narrative water quality objectives for toxicity and bioaccumulation. The narrative toxicity objective states, "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The narrative bioaccumulation objective states, "Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

b. CTR Criteria. The CTR specifies numeric aquatic life and human health criteria for numerous priority pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries. Some human health criteria are for consumption of "water and organisms" and others are for consumption of "organisms only." The criteria applicable to "organisms only" apply to Miller Creek and San Pablo Bay because these waters do not support the MUN beneficial use (i.e., they are not drinking water sources).

c. NTR Criteria. The NTR establishes numeric aquatic life and human health criteria for a number of toxic pollutants for San Francisco Bay waters upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. The NTR criteria apply to Miller Creek and San Pablo Bay.

d. Sediment Quality Objectives. The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* contains a narrative water quality objective: "Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California." This objective is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment chemistry. The policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this objective, it is to impose the objective as a receiving water limit.

e. Receiving Water Salinity. Basin Plan section 4.6.2 (like the CTR and NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining the applicable water quality objectives. Freshwater criteria apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities between these two categories, or tidally-influenced freshwaters that support estuarine beneficial uses, the water quality objectives are the lower of the salt or freshwater objectives (the latter calculated based on ambient hardness) for each substance.

San Pablo Bay is an estuarine environment based on salinity data generated through the Regional Monitoring Program (RMP). Salinity data collected at the BD20 sampling location between 1993 and 2001 indicate that the salinity was greater than 10 ppt 68 percent of the time. San Pablo Bay is therefore classified as estuarine.

Miller Creek is also an estuarine environment based on the Discharger's *Receiving Water Ammonia Characterization Study Final Report*, dated August 28, 2012, which indicates that Miller Creek has an average salinity of 2.7 ppt at receiving water monitoring location RSW-001, located 20 feet downstream from Discharge Point No. 002; and an average salinity of 8.7 ppt at the PG&E Bridge receiving water station, located approximately 4,000 feet downstream from Discharge Point No. 002.

Because both San Pablo Bay and Miller Creek are estuarine waters, the reasonable potential analysis and WQBELs are based on the lower of the freshwater and saltwater criteria and objectives.

f. Site-Specific Metals Translators. Effluent limitations for metals must be expressed as total recoverable metal (40 C.F.R. § 122.45[c]). Since the water quality objectives for metals are typically expressed as dissolved metal, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. The CTR contains default translators; however, site-specific conditions, such as water temperature, pH, suspended solids, and organic carbon may affect the form of metal (dissolved, non-filterable, or otherwise) present and therefore available to cause toxicity. In general, dissolved metals are more available and more toxic to aquatic life than other forms. Site-specific translators can account for site-specific conditions, thereby preventing overly stringent or under-protective water quality objectives. This Order incorporates site-specific translators for copper, nickel and zinc based on the Discharger's *Translator Study Report*, dated November 14, 2001, and *Zinc Translator Study Data Update*, dated

May 21, 2002. The following table shows these translators; default CTR translators were used for all other metals:

Table F-6. Site-Specific Translators

Pollutant	Acute	Chronic
Copper	0.83	0.56
Nickel	0.82	0.56
Zinc	0.80	0.44

g. Receiving Water Hardness. Ambient hardness values are used to calculate freshwater criteria and objectives that are hardness dependent. The objectives for this Order are based on a hardness value of 240 mg/L as $CaCO_3$. This is the geometric mean of 61 hardness values obtained from Miller Creek monitoring locations RSW-001 and RSW-002 from December 2009 through March 2014. The data were censored by capping 19 hardness values above 400 mg/L at 400 mg/L.

3. Need for Water Quality-Based Effluent Limitations (Reasonable Potential Analysis)

a. Available Information. The reasonable potential analysis for this Order is based on effluent monitoring data the Discharger collected from December 2009 through April 2014 (for copper, monitoring data from October 2010 through April 2014 were used because corrective measures to improve copper removal efficiency, in compliance with Order No. R2-2009-0071, were not implemented until October 2010). For ambient background data, the RMP database was queried on August 15, 2014, to obtain the most up-to-date RMP data. The reasonable potential analysis is based on the data collected at the San Pablo Bay RMP station (BD20) from 1993 through 2001, and additional Bay Area Clean Water Agencies data from *San Francisco Bay Ambient Water Monitoring Interim Report* (2003) and *Ambient Water Monitoring: Final CTR Sampling Update* (2004). These reports contain monitoring results from 2002 and 2003 for priority pollutants the RMP did not monitor at the time. For ammonia, the ambient concentration data from the Discharger's *Receiving Water Ammonia Characterization Study Final Report (2012)* were used.

In some cases, reasonable potential cannot be determined because effluent data are limited or ambient background concentrations are unavailable. Provision VI.C.2 of the Order requires the Discharger to continue monitoring for these constituents in its effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether numeric effluent limitations are necessary.

b. Toxic Pollutants

i. Methodology. SIP section 1.3 sets forth the methodology used for this Order to assess whether a toxic pollutant has reasonable potential to exceed a water quality objective. The analysis begins with identifying the maximum effluent concentration (MEC) observed for each pollutant based on available effluent concentration data and the ambient background concentration (B). SIP section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean

of observed concentrations. There are three triggers in determining reasonable potential:

- **Trigger 1** is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective (MEC ≥ water quality objective).

- **Trigger 2** is activated if the ambient background concentration observed in the receiving water is greater than the water quality objective (B > water quality objective) *and* the pollutant is detected in any effluent sample.

- **Trigger 3** is activated if a review of other information indicates that a WQBEL is needed to protect beneficial uses.

ii. Analysis. The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the analysis are presented in the following table, along with the reasonable potential analysis results (yes or no) for each pollutant. Reasonable potential was not determined for all pollutants because there are not water quality objectives for all pollutants.

Cyanide and bis(2-ethylhexyl)phthalate exhibit reasonable potential by Trigger 1. Basin Plan section 4.7.2.2 also requires cyanide WQBELs for individual NPDES permits for all municipal and most industrial wastewater treatment facilities. Copper, nickel, and dioxin-TEQ exhibit reasonable potential by Trigger 2 (see Fact Sheet section IV.C.3.c for further discussion of dioxin-TEQ). Basin Plan section 4.7.2.1 also requires copper WQBELs for all individual NPDES permits for municipal wastewater treatment facilities.

Table F-7. Reasonable Potential Analysis

CTR #	Priority Pollutant	Governing WQC (µg/L)	MEC or Minimum DL [1] (µg/L)	B or Minimum DL [1] (µg/L)	RPA Result [2]
1	Antimony	4,300	0.22	1.8	No
2	Arsenic	36	1.3	4.6	No
3	Beryllium	No Criteria	< 0.041	0.22	U
4	Cadmium	2.3	0.05	0.23	No
5a	Chromium (total)	424	0.4	41	No
5b	Chromium (VI)	11	< 0.6	41	No
6	**Copper**	**10.7**	**9.7**	**14**	**Yes**
7	Lead	8.5	0.9	6.5	No
8	Mercury (303(d) listed) [3]	---	---	---	---
9	**Nickel**	**15**	**7.5**	**30**	**Yes**
10	Selenium (303(d) listed)	5.0	0.74	0.33	No
11	Silver	2.2	0.11	0.059	No
12	Thallium	6.3	< 0.07	0.39	No
13	Zinc	113	77	35	No
14	**Cyanide**	**2.9**	**9.1**	**< 0.4**	**Yes**
16	2,3,7,8-TCDD (303(d) listed)	1.40×10^{-8}	$< 7.5 \times 10^{-7}$	8.0×10^{-9}	No
	Dioxin-TEQ (303(d) listed)	**1.40×10^{-8}**	**2.6×10^{-9}**	**7.1×10^{-8}**	**Yes**
17	Acrolein	780	< 1.7	< 0.5	No
18	Acrylonitrile	0.66	< 0.69	0.03	No

CTR #	Priority Pollutant	Governing WQC (µg/L)	MEC or Minimum DL [1] (µg/L)	B or Minimum DL [1] (µg/L)	RPA Result [2]
19	Benzene	71	< 0.18	< 0.05	No
20	Bromoform	360	1.2	< 0.5	No
21	Carbon Tetrachloride	4.4	< 0.16	0.06	No
22	Chlorobenzene	21,000	< 0.18	< 0.5	No
23	Chlorodibromomethane	34	9.0	< 0.05	No
24	Chloroethane	No Criteria	< 0.38	< 0.5	U
25	2-Chloroethylvinyl ether	No Criteria	< 0.28	< 0.5	U
26	Chloroform	No Criteria	19	< 0.5	U
27	Dichlorobromomethane	46	17	< 0.05	No
28	1,1-Dichloroethane	No Criteria	< 0.19	< 0.05	U
29	1,2-Dichloroethane	99	< 0.18	0.04	No
30	1,1-Dichloroethylene	3.2	< 0.21	< 0.5	No
31	1,2-Dichloropropane	39	< 0.18	< 0.05	No
32	1,3-Dichloropropylene	1,700	< 0.16	---	No
33	Ethylbenzene	29,000	< 0.26	< 0.5	No
34	Methyl Bromide	4,000	< 0.17	< 0.5	No
35	Methyl Chloride	No Criteria	< 0.23	< 0.5	U
36	Methylene Chloride	1,600	< 0.2	22	No
37	1,1,2,2-Tetrachloroethane	11	< 0.1	< 0.05	No
38	Tetrachloroethylene	8.9	< 0.19	< 0.5	No
39	Toluene	200,000	< 0.19	< 0.3	No
40	1,2-Trans-Dichloroethylene	140,000	< 0.22	< 0.5	No
41	1,1,1-Trichloroethane	No Criteria	< 0.19	< 0.5	U
42	1,1,2-Trichloroethane	42	< 0.16	< 0.05	No
43	Trichloroethylene	81	< 0.2	< 0.5	No
44	Vinyl Chloride	525	< 0.25	< 0.5	No
45	2-Chlorophenol	400	< 0.98	< 1.2	No
46	2,4-Dichlorophenol	790	< 0.99	< 1.3	No
47	2,4-Dimethylphenol	2,300	< 0.87	< 1.3	No
48	2-Methyl- 4,6-Dinitrophenol	765	< 0.91	< 1.2	No
49	2,4-Dinitrophenol	14,000	< 0.83	< 0.7	No
50	2-Nitrophenol	No Criteria	< 0.89	< 1.3	U
51	4-Nitrophenol	No Criteria	< 0.83	< 1.6	U
52	3-Methyl 4-Chlorophenol	No Criteria	< 0.91	< 1.1	U
53	Pentachlorophenol	7.9	< 0.81	< 1.0	No
54	Phenol	4,600,000	< 0.69	< 1.3	No
55	2,4,6-Trichlorophenol	6.5	< 0.97	< 1.3	No
56	Acenaphthene	2,700	0.03	0.007	No
57	Acenaphthylene	No Criteria	0.04	0.00069	U
58	Anthracene	110,000	< 0.03	0.0023	No
59	Benzidine	0.00054	< 5	< 0.0015	No
60	Benzo(a)Anthracene	0.049	< 0.03	0.0064	No
61	Benzo(a)Pyrene	0.049	< 0.03	0.0094	No
62	Benzo(b)Fluoranthene	0.049	< 0.03	0.01838	No
63	Benzo(ghi)Perylene	No Criteria	< 0.03	0.0093	U
64	Benzo(k)Fluoranthene	0.049	< 0.03	0.0051	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	< 0.93	< 0.3	U
66	Bis(2-Chloroethyl)Ether	1.4	< 0.95	< 0.3	No
67	Bis(2-Chloroisopropyl)Ether	170,000	< 0.81	---	No
68	**Bis(2-Ethylhexyl)Phthalate**	**5.9**	**59**	**0.091**	**Yes**
69	4-Bromophenyl Phenyl Ether	No Criteria	< 0.97	< 0.23	U
70	Butylbenzyl Phthalate	5,200	< 0.98	0.0056	No
71	2-Chloronaphthalene	4,300	< 0.98	< 0.3	No

CTR #	Priority Pollutant	Governing WQC (µg/L)	MEC or Minimum DL [1] (µg/L)	B or Minimum DL [1] (µg/L)	RPA Result [2]
72	4-Chlorophenyl Phenyl Ether	No Criteria	< 0.99	< 0.3	U
73	Chrysene	0.049	< 0.03	0.0086	No
74	Dibenzo(a,h)Anthracene	0.049	< 0.03	0.0026	No
75	1,2-Dichlorobenzene	17,000	< 0.27	< 0.8	No
76	1,3-Dichlorobenzene	2,600	< 0.18	< 0.8	No
77	1,4-Dichlorobenzene	2,600	< 0.18	< 0.8	No
78	3,3 Dichlorobenzidine	0.077	< 5	< 0.001	No
79	Diethyl Phthalate	120,000	< 0.86	< 0.24	No
80	Dimethyl Phthalate	2,900,000	< 0.97	< 0.24	No
81	Di-n-Butyl Phthalate	12,000	< 0.91	0.016	No
82	2,4-Dinitrotoluene	9.1	< 0.83	< 0.27	No
83	2,6-Dinitrotoluene	No Criteria	< 0.98	< 0.29	U
84	Di-n-Octyl Phthalate	No Criteria	< 0.92	< 0.38	U
85	1,2-Diphenylhydrazine	0.54	< 0.9	0.0037	No
86	Fluoranthene	370	< 0.03	0.022	No
87	Fluorene	14,000	< 0.03	0.01	No
88	Hexachlorobenzene	0.00077	< 0.004	0.00007	No
89	Hexachlorobutadiene	50	< 0.92	< 0.3	No
90	Hexachlorocyclopentadiene	17,000	< 0.9	< 0.31	No
91	Hexachloroethane	8.9	< 0.94	< 0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	< 0.03	0.012	No
93	Isophorone	600	< 0.93	< 0.3	No
94	Naphthalene	No Criteria	< 0.03	0.0016	U
95	Nitrobenzene	1,900	< 0.95	< 0.25	No
96	N-Nitrosodimethylamine	8.1	1.1	< 0.3	No
97	N-Nitrosodi-n-Propylamine	1.4	< 0.97	< 0.001	No
98	N-Nitrosodiphenylamine	16	< 0.83	< 0.001	No
99	Phenanthrene	No Criteria	< 0.03	0.0078	U
100	Pyrene	11,000	< 0.03	0.03	No
101	1,2,4-Trichlorobenzene	No Criteria	< 0.19	< 0.3	U
102	Aldrin	0.00014	< 0.004	0.00000014	No
103	Alpha-BHC	0.013	< 0.005	0.0008	No
104	Beta-BHC	0.046	< 0.003	0.000635	No
105	Gamma-BHC	0.063	< 0.004	0.00079	No
106	Delta-BHC	No Criteria	< 0.004	0.00015	U
107	Chlordane (303(d) listed)	0.00059	< 0.005	0.00034	No
108	4,4'-DDT (303(d) listed)	0.00059	< 0.004	0.000075	No
109	4,4'-DDE (linked to DDT)	0.00059	< 0.003	0.000693	No
110	4,4'-DDD	0.00084	< 0.004	0.000313	No
111	Dieldrin (303d listed)	0.00014	< 0.004	0.000237	No
112	Alpha-Endosulfan	0.0087	< 0.004	0.000035	No
113	beta-Endosulfan	0.0087	< 0.005	0.000059	No
114	Endosulfan Sulfate	240	< 0.005	0.000143	No
115	Endrin	0.0023	< 0.005	0.000073	No
116	Endrin Aldehyde	0.81	< 0.005	---	No
117	Heptachlor	0.00021	< 0.003	0.00003	No
118	Heptachlor Epoxide	0.00011	< 0.005	0.000121	No
119-125	PCBs sum (303(d) listed) [3]	---	---	---	---
126	Toxaphene	0.0002	< 0.004	---	No
	Tributyltin	0.0074	< 0.005	0.002	No

Abbreviations:

WQC = water quality objective
MEC = maximum effluent concentration

B = ambient background concentration
RPA = reasonable potential analysis

Footnotes:

[1] The maximum effluent concentration (MEC) and ambient background concentration (B) are the actual detected concentrations unless preceded by a "<" sign, in which case the value shown is the minimum detection level (DL).

[2] RPA Results = Yes, if MEC ≥ WQC, B > WQC and MEC is detected, or Trigger 3
= No, if MEC and B are < WQC or all effluent data are undetected
= Unknown or Cannot Determine (U), if no criteria have been promulgated or data are insufficient.

[3] SIP section 1.3 excludes from its reasonable potential analysis procedure priority pollutants for which a TMDL has been developed. TMDLs have been developed for mercury and PCBs in San Francisco Bay. Mercury and PCBs from wastewater discharges are regulated by NPDES Permit No. CA0038849, which implements the San Francisco Bay Mercury and PCBs TMDLs.

c. Dioxin-TEQ

i. Water Quality Objective. The Basin Plan narrative water quality objective for bioaccumulative substances states, "Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

Because it is the consensus of the scientific community that dioxins and furans associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms, the Basin Plan's narrative bioaccumulation water quality objective applies to these pollutants. Elevated levels of dioxins and furans in San Francisco Bay fish tissue demonstrate that the narrative bioaccumulation water quality objective is not being met. U.S. EPA has therefore placed San Francisco Bay on its 303(d)-list of receiving waters where water quality objectives are not being met after imposition of applicable technology-based requirements.

When the CTR was promulgated, U.S. EPA stated its support of the regulation of dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs). U.S. EPA stated, "For California waters, 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. 31695-31696, May 18, 2000). This Order uses a TEQ scheme based on a set of toxicity equivalency factors (TEFs) the World Health Organization developed in 1998, and a set of bioaccumulation equivalency factors (BEFs) U.S. EPA developed for the Great Lakes region (40 C.F.R. part 132, Appendix F) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD). Although the 1998 World Health Organization scheme includes TEFs for dioxin-like PCBs, they are not included in this Order's TEQ scheme. The CTR has established a specific water quality criterion for PCBs, and dioxin-like PCBs are included in the analysis of total PCBs.

The CTR establishes a numeric water quality objective for 2,3,7,8-TCDD of 1.4×10^{-8} µg/L for the protection of human health when aquatic organisms are consumed. 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.

ii. Analysis. TEFs and BEFs were used to express measured concentrations of 17 dioxin congeners in effluent and background samples as equivalent 2,3,7,8-TCDD concentrations. For each sample, the sum of these equivalent concentrations is the dioxin-TEQ concentration. This Order establishes dioxin-TEQ WQBELs because the site-specific ambient background receiving water dioxin-TEQ concentration (5.3×10^{-8} µg/L) exceeds the CTR numeric criterion for 2,3,7,8-TCDD (1.4×10^{-8} µg/L) and San Pablo Bay is listed as an impaired water body pursuant to CWA section 303(d). Moreover, dioxin-TEQ was detected in the effluent, demonstrating reasonable potential by Trigger 2.

d. Ammonia

i. Methodology. Ammonia is a toxic pollutant but not a priority pollutant as defined by the CTR; therefore, the procedure outlined in the *Technical Support Document for Water Quality-based Toxics Control* (Technical Support Document) (EPA/505/2-90-001, March 1991) is used to determine if ammonia in the discharge has a reasonable potential to cause water quality objectives to be exceeded in the receiving water. The Technical Support Document allows the use of measured receiving water concentrations or receiving water concentrations projected from effluent data to perform reasonable potential analyses. The following summarizes the steps using effluent data:

Step 1. Determine the number of 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 $n \geq 10$, the CV is calculated as the standard deviation divided by the mean.

Step 3. Determine an appropriate ratio, R, 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%. This Order is based on the 95% confidence interval.

$$P_n = (1 - \text{confidence interval})^{1/n}$$

C_{Pn} and $C_{\text{upper bound}}$ corresponding to the MEC percentile (P_n) and the selected upper bound percentile (typically 99th percentile) are calculated using the following equation:

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

In this equation, $\sigma^2 = \ln(CV^2+1)$, p is the percentile (upper bound or p_n), and Z_p is the standard normal distribution value for the percentile p (available from statistical references).

The ratio, R, is then determined as follows:

$$R = C_{upperbound}/C_{Pn}$$

Step 4. Multiply the MEC by the ratio, R, determined in Step 3, and use this value with the appropriate dilution to project the receiving water concentration (RWC):

$$RWC = MEC \times R / \text{dilution ratio}$$

Step 5. Compare the projected receiving water concentration to the applicable water quality objective. If a receiving water concentration is greater than or equal to the objective, then there is reasonable potential.

ii. Analysis

(a) Water Quality Objective. Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L as an annual median and 0.16 mg/L as a maximum for San Francisco Bay north of the Golden Gate Channel.

(b) Ammonia Data Translation. Effluent and receiving water data are available for total ammonia, but not un-ionized ammonia because (1) sampling and laboratory methods are unavailable to analyze for un-ionized ammonia, and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on pH, salinity, and temperature. Total ammonia concentrations (as nitrogen) were translated into un-ionized ammonia concentrations for comparison with the Basin Plan un-ionized objectives based on the following equations (U.S. EPA, 1989, *Ambient Water Quality Criteria for Ammonia (Saltwater)*–1989, EPA Publication 440/5-88-004):

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

Where:

pK = 9.245 + 0.116(I) + 0.0324*(298-T) + 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 Order, paired salinity data were unavailable. The effluent was assumed to be freshwater, and the equation for waters of salinity less than 1 ppt was used.

(c) Dilution. For purpose of this analysis, no dilution was assumed, and the receiving water concentration was assumed to be the same as the projected upper bound concentration, i.e., RWC = MEC x R (see Step 4 above).

(d) Two Approaches. According to the Technical Support Document, the reasonable potential analysis can be performed based on the receiving water concentration projected using effluent data (the steps summarized above) or actual measured receiving concentrations. Both values may be compared directly with the Basin Plan un-ionized objectives:

(1) Analysis Based on Effluent Data. Effluent data do not indicate reasonable potential. There were 107 effluent sample results for un-ionized ammonia from December 4, 2009, through April 10, 2014. The MEC was 0.070 mg/L expressed as un-ionized ammonia (as nitrogen). The confidence interval was set at 95%. The percentile represented by the MEC (P_n) was calculated to be 0.972, indicating that the MEC represented the 97.2th percentile of all observed ammonia effluent data. With the upper bound set at the 99th percentile, the R value was determined to be 1.3 (C_{Pn} was 3.0 and $C_{upper\ bound}$ was 3.9), and the projected receiving water concentration was 0.093 mg/L, which is less than the Basin Plan's acute un-ionized ammonia objective of 0.16 mg/L.

The annual medians of the effluent data were used for direct comparison with the annual median chronic objective. The highest running annual median from the effluent data was calculated and compared with the annual median objective. No projection is needed to establish the central tendency of the data. The maximum annual median, 0.0073 mg/L, is less than the annual median objective of 0.025 mg/L.

(2) Analysis Based on Receiving Water. There is no reasonable potential for ammonia based on Miller Creek receiving water data. The Discharger submitted a report titled *Receiving Water Ammonia Characterization Study – Final Report* on August 28, 2012. The study examined receiving water data collected between April 2010 and May 2012 from four monitoring stations in Miller Creek, including monitoring locations RSW-002 (located 1,900 feet upstream of Discharge Point No. 002, the main discharge point), RSW-001 (20 feet downstream from Discharge Point No. 002), C-2A (500 feet downstream from Discharge Point No. 002), and PG&E Bridge (approximately 4,000 feet downstream from Discharge Point No. 002). The highest un-ionized ammonia concentration observed in the vicinity of the outfall was 0.09 mg/L (as nitrogen) at monitoring location RSW-001, which was less than the maximum water quality objective of 0.16 mg/L. The highest annual median observed was 0.011 mg/L, also at monitoring location C-2, which was less than the annual median water quality objective of 0.025 mg/L.

This analysis does not include receiving water data collected on April 27, 2011, during a mechanical failure of the plant's fixed film reactor because: (1) the data is not representative of the plant's typical operating condition and (2) the Discharger has since installed an on-line ammonia analyzer to provide

an immediate measure of nitrification performance and allow it to avoid discharging inadequately-treated effluent. In addition, this analysis does not include receiving water data collected on November 15, 2011, during the plant's discharge of surplus water from the reclamation storage ponds. The Discharger has ceased discharging from the storage ponds to Miller Creek. Going forward, all surplus water remaining in the storage ponds at the end of the reclamation season will be returned to the plant for treatment before discharge (see Fact Sheet section II.A.4).

iii. Potential Changes to Ammonia Analysis as an Outgrowth of Nutrients Regulation. The Regional Water Board issued a watershed permit (NPDES Permit No. CA0038873) for all municipal wastewater dischargers to San Francisco Bay, including the Discharger, as an element of its San Francisco Bay Nutrient Management Strategy. This strategy addresses growing concerns about nutrients in the San Francisco Bay estuary. The strategy's goal is nutrient numeric endpoints that will inform WQBELs that the Regional Water Board may impose through NPDES Permit No. CA0038873.

e. Whole Effluent Chronic Toxicity

i. Water Quality Objective. Basin Plan section 3.3.18 contains the following water quality objective for toxicity: "All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms... . 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. Attainment of this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, or toxicity tests…, or other methods selected by the Water Board."

For this Order, this narrative objective is translated into a numeric criterion of 1.0 chronic toxicity unit (TU_c). At 1.0 TU_c, there is no observable detrimental effect when the indicator organism is exposed to 100 percent effluent; therefore, 1.0 TU_c is a direct translation of the narrative objective into a number. Moreover, in the *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001) (see section 3.3.3, "Step 3: Decision Criteria for Permit Limit Development"), U.S. EPA recommends that 1.0 TU_c be used as a criterion continuous concentration (typically a four-day average). It further states that reasonable potential is shown where an effluent is projected to cause an excursion above the criterion continuous concentration. The Technical Support Document is applicable here as guidance because it directly addresses effluent characterization for whole effluent toxicity.

ii. Analysis. The previous order required quarterly chronic toxicity tests using *Mysidopsis bahia*. Throughout most of the previous order term, the Discharger regularly observed some chronic toxicity. Out of 27 chronic toxicity tests, one exceeded 2 TU_c. That result was 8 TU_c and occurred on November 13, 2013. Twenty-one out of the 27 tests (78%) found chronic toxicity greater than 1 TU_c.

The Discharger conducted toxicity identification evaluation (TIE) work in 2011, which identified pyrethroid pesticides as the likely toxicity source. Followup investigations failed to identify any potential sources but determined that permethrin (one type of pyrethoid) was often present at very low concentrations in the wastewater, including wastewater from residential areas. This finding is consistent with U.S. EPA studies (http://www.epa.gov/oppsrrd1/reevaluation/pyrethroids-pyrethrins.html) that document that pyrethoids are widely used in consumer products, such as mosquito resistant clothing and pet and pharmaceutical shampoos. The Discharger has since engaged in public outreach efforts aiming to limit pyrethroid discharges to the sanitary sewer. The Discharger also joined the Pyrethoids Working Group, sponsored by the California Association of Sanitation Agencies. As a participant, the Discharger conducts periodic pyrethoid sampling and shares its results with the group, which helps to inform the California Department of Pesticides Registration and the U.S.EPA Office of Pesticide Programs (the agencies responsible for regulating pesticide use) of the presence of pyrethoids in municipal wastewater.

Although the Discharger has been engaging in community outreach to reduce pyrethoids in plant influent, there remains a reasonable potential for the discharge to cause chronic toxicity in the receiving water during discharge because toxicity has been observed in the discharge repeatedly in the recent past. (Discharge is generally prohibited from June through October when receiving water flows are low.)

Using the reasonable potential analysis methodology of the Technical Support Document (described in Fact Sheet section IV.C.3.d) results in the same conclusion. The effluent has reasonable potential for chronic toxicity because the projected maximum toxicity expected in the effluent when discharged is 15 TU_c. Allowing for a mixing zone and dilution credit as described in Fact Sheet section IV.C.4.c (3.25:1), the projected toxicity in the receiving water at the edge of the mixing zone would be 4.5 TU_c. Both values are above the numeric criterion of 1.0 TU_c (Liao, M. April 15, 2015, *Chronic Toxicity Reasonable Potential Analysis Using the Technical Support Document Approach, Las Gallinas Valley Sanitary District*).

f. Temperature

i. Water Quality Objectives. The Basin Plan lists Miller Creek as supporting the cold freshwater habitat beneficial use. The Basin Plan requires that the temperature of cold freshwater habitat not be increased by more than 5°F above the natural receiving water temperature. The Thermal Plan objectives for existing discharges to estuaries include the following:

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

(b) Discharges, either individually or combined, shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.

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

ii. Analysis. There is no reasonable potential for temperature to exceed water quality objectives based on data the Discharger provided in its *Miller Creek Temperature Study—Final Report*, dated December 31, 2013. The report contains temperature data collected between January 2010 and December 2013 for the discharge and Miller Creek receiving water upstream (monitoring location RSW-002) and downstream (monitoring location RSW-001) of the discharge and at two other farther downstream locations (monitoring locations C-2A and PG&E Bridge). The maximum difference in temperature between the discharge and the upstream natural receiving water at monitoring location RSW-002 was 14°F, which is less than the Thermal Plan objective of 20°F. The average temperature differences between the downstream and the upstream receiving water were 0.4°F (monitoring location RSW-001 versus monitoring location RSW-002), 0.8°F (monitoring location C-2A versus monitoring location RSW-002), and -1°F (monitoring location PG&E Bridge versus monitoring location RSW-002), which were all less than the Thermal Plan objective of 4°F.

The thermal objective applicable to major river channels does not apply to Miller Creek because Miller Creek is not a river, much less a major river. It measures no more than 10 feet across in the vicinity of the discharge outfalls.

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

4. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs were developed for the pollutants or pollutant parameters determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. The WQBELs are based on the procedures in SIP section 1.4. Average monthly effluent limitations (AMELs) and maximum daily effluent limitations (MDELs) were calculated as shown in the table below.

This Order does not contain WQBELs for constituents that do not demonstrate reasonable potential; however, Provision VI.C.2 of the Order still requires monitoring for those pollutants. If concentrations are found to have increased significantly, Provision VI.C.2 of the Order requires the Discharger to investigate the sources of the increases and implement remedial measures if the increases pose a threat to receiving water quality.

a. Need for Numeric Chronic Toxicity WQBELs. This Order contains numeric WQBELs for chronic toxicity. Numeric WQBELs are necessary and appropriate because the chemical-specific WQBELs and narrative chronic toxicity WQBEL (with triggers for prescriptive accelerated monitoring and toxicity reduction evaluation) in the previous order were insufficient to attain and maintain the narrative chronic toxicity water quality objective, as evidenced by the regularly observed chronic toxicity in the discharge during the previous order term and described in the reasonable potential analysis above. Numeric WQBELs are consistent with the intent of the federal regulations requiring whole effluent toxicity effluent limitations at 40 C.F.R. section 122.44(d). As set forth in the preamble to these regulations, "A limit on whole effluent toxicity refers to a *numeric* effluent limitation expressed in terms such as toxic units, no observed effect level (NOEL), LC_{50}, or percent mortality." (54 Fed. Reg. 23871, emphasis added). Numeric toxicity WQBELs are an efficient and effective regulatory tool because the measurement of compliance is clearly defined.

State Water Board Order Nos. WQ 2003-0012 and 2003-0013 do not preclude the Regional Water Board from imposing numeric effluent limitations for chronic toxicity. In those orders, the State Water Board questioned the propriety of numeric chronic toxicity effluent limitations in NPDES permits for publicly-owned treatment works that discharge into inland waters and decided to address the issue by modifying the SIP within one year. It expressly declined to determine the propriety of final numeric effluent limitations for chronic toxicity for the permits under review (Order No. WQ 2003-0012, p. 9). Pending SIP modification, it replaced the numeric toxicity effluent limitations of the specific permits under review with narrative ones similar to those in the previous Las Gallinas order. Almost 12 years have passed and the State Water Board has not modified the SIP. Meanwhile, notwithstanding the narrative chronic toxicity effluent limitations, discharges that do not ensure compliance with the narrative toxicity water quality objective continue. Based on these developments and differing facts since adoption of the State Water Board orders, the Regional Water Board exercises its own discretion and finds that numeric chronic toxicity WQBELs are necessary and appropriate at this time and that they are consistent with federal regulations as they apply to whole effluent toxicity. Moreover, U.S. EPA has indicated its intent to object to reissuance of this permit if there is reasonable potential for chronic toxicity to exceed water quality standards and the Order does not contain WQBELs as stringent as necessary to meet water quality standards, including numeric WQBELs as needed (Jane Diamond, U.S. EPA, January 15, 2015).

b. WQBEL Expression. NPDES regulations at 40 C.F.R. section 122.45(d) require that permit limits for publicly-owned treatment works be expressed as average weekly and average monthly limits, unless impracticable. This Order contains MDELs instead of weekly limits because MDELs better protect against acute water quality effects and are necessary to prevent fish kills or mortality to aquatic organisms. Weekly limits could allow acute and chronic toxicity to occur over shorter periods (acute and chronic aquatic life criteria are typically expressed as one-hour and four-day averages).

Daily WQBELs are appropriate for chronic toxicity. U.S.EPA discusses permit limit expression for chronic toxicity in *EPA Regions 8, 9 and 10 Toxicity Training Tool* (January 2010). It acknowledges that NPDES regulations at 40 C.F.R. section 122.45(d) require weekly limits for publicly-owned treatment works but indicates that weekly limits

are inappropriate for toxic pollutants and water quality permitting. According to U.S. EPA, the requirement for weekly limits is based on the secondary treatment requirements, which are unrelated to water quality. Section 5.2.3 of the *Technical Support Document for Water Quality-based Toxics Control* (Technical Support Document), (EPA/505/2-90-001, March 1991) also states that weekly limits are inappropriate for whole effluent toxicity. In lieu of weekly limits, U.S. EPA recommends daily limits. Since chronic toxicity tests may take several takes to complete, Table 4 of the Order contains a note indicating that the maximum daily WQBEL is to be interpreted as the maximum test result for the month, as U.S. EPA recommends in Technical Support Document section 5.2.3.

c. Mixing Zones and Dilution Credits. The Discharger's effluent is discharged to Miller Creek, a shallow water discharge. Due to the tidal nature of the creek, and limited upstream freshwater flows, no dilution credit (D=0) was used to calculate WQBELs for most pollutants with the exception of cyanide and chronic toxicity. Cyanide attenuates in receiving waters due to both degradation and dilution. For discharges to Miller Creek, Basin Plan Table 4-6 allows a cyanide dilution credit of 3.25:1 (D=2.25). For chronic toxicity, Basin Plan 4.5.5.3.2 states, "[allow] credit for dilution comparable to those allowed for numeric chemical specific objectives, effluent variability, and intent to protect against consistent chronic toxicity and severe episodic toxic events." For this reason, and as discussed below, this Order authorizes a mixing zone for chronic toxicity that also corresponds to a dilution credit of 3.25:1.

Miller Creek discharges are tidally-influenced at the discharge points. Data from November 2009 through April 2010 (selected to represent a typical discharge season) indicates that the mixing zone corresponding to 3.25:1 dilution extended less than one third mile downstream from the discharge points. During a dry or "drought" year (such as from November 2011 through April 2012), the mixing zone could extend as much as one mile downstream from the discharge points.

The mixing zone protects against chronic toxicity and severe episodic toxic events in the receiving water because it would not allow any of the following to occur:

i. Compromise the integrity of the entire water body. The mixing zone will not compromise the integrity of the entire water body because it extends one third mile, or up to one mile during drought years, between the discharge points and San Pablo Bay. Miller Creek extends upstream from the discharge points for about another eight miles. Moreover, this Order prohibits most dry season discharges, preserving the integrity of the entire water body during those periods.

ii. Cause acute toxicity to aquatic life passing through the mixing zone. The mixing zone will not cause acutely toxic conditions to aquatic life passing through it because the mixing zone relates to chronic toxicity, not acute toxicity. Section IV.D of this Order contains acute toxicity limits that reflect no mixing zone and no dilution credit.

iii. Restrict the passage of aquatic life. The mixing zone will not restrict passage of aquatic life because it relates to chronic toxicity, not acute toxicity. Aquatic life will be able to pass through the mixing zone before any chronic effects can occur.

Moreover, the mixing zone will not create a physical or visual barrier that could restrict the passage of aquatic life.

iv. **Adversely impact biologically-sensitive or critical habitats.** The mixing zone will not adversely affect any biologically-sensitive or critical habitats because it is confined to a stretch of Miller Creek and is unlikely to harm special-status species living in or around the creek. Two protected birds may occupy saltwater marshes adjacent to (but not within) the mixing zone: the State and federally-endangered California clapper rail, and the State-threatened California black rail. Other sensitive birds nearby include the San Pablo song sparrow. The State and federally-endangered saltmarsh harvest mouse may also occupy nearby saltwater marshes (http://marinwatersheds.org/miller_creek.html). None of these species is likely to spend significant time within the mixing zone.

Steelhead trout, a federally-threatened aquatic species, has been observed within the Miller Creek watershed (http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEAnimals.pdf). Steelhead trout is likely to migrate through the mixing zone quickly on route to upstream spawning beds. Steelhead trout would not attempt to spawn inside the mixing zone because the stream bed there is smooth mud containing no gravel appropriate for spawning. Exposure would be limited to short periods. The Discharger conducts acute toxicity tests in 100 percent effluent using rainbow trout and results consistently show no acute toxicity. Steelhead trout are the anadromous form of rainbow trout.

v. **Produce undesirable or nuisance aquatic life.** The mixing zone will not produce undesirable or nuisance aquatic life because this Order specifically prohibits bottom deposits or aquatic growths in the receiving water to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.

vi. **Result in floating debris, oil, or scum.** The mixing zone will not result in floating debris, oil, or scum because this Order specifically prohibits floating debris, oil, or scum in the receiving water. The plant is equipped with scum and debris collection devices that remove these materials.

vii. **Produce objectionable color, odor, taste, or turbidity.** The mixing zone will not produce objectionable color, odor, taste, or turbidity because the plant provides advanced secondary treatment and disinfects effluent prior to discharge. Advanced secondary treatment generally addresses objectionable odor, taste, and turbidity through the biological degradation of organic compounds and clarification. Moreover, this Order specifically prohibits alteration of color or turbidity beyond natural background levels. The Discharger conducts regular effluent monitoring that includes standard observations to ensure that objectionable color, odor, and turbidity are not present.

viii. **Cause objectionable bottom deposits.** The mixing zone will not cause objectionable bottom deposits because the plant provides advanced secondary treatment, which biologically degrades and removes suspended particles that could contribute to receiving water bottom deposits. Moreover, this Order specifically

prohibits bottom deposits or aquatic growths in the receiving water to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.

ix. Cause nuisance. The mixing zones will not cause a nuisance because the effluent receives advanced secondary treatment and is disinfected prior to discharge. Moreover, this Order specifically prohibits discharges from causing a nuisance. The Discharger conducts regular effluent monitoring that includes standard observations to confirm that nuisance conditions are not present.

x. Overlap a mixing zone from a different outfall. The mixing zone does not overlap any other mixing zone because the Regional Water Board has not established any other mixing zone nearby.

xi. Exist at or near any drinking water intake. The mixing zone is not located near any drinking water intake because no such intake is nearby. The receiving water is a marine environment not generally suitable as a drinking water supply.

d. WQBEL Calculations. The following table shows the WQBEL calculations. Calculations for chemical-specific pollutants are in accordance with the SIP. Calculations for chronic toxicity use the SIP methodology as guidance because U.S. EPA recommends that toxicity WQBELs be derived using a statistical approach (see Technical Support Document, section 5.4.2), and the SIP-based procedure is one such approach.

Table F-8. WQBEL Calculations

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Dioxin-TEQ	Bis (2-Ethylhexyl) Phthalate	Chronic Toxicity
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**TU_c**
Basis and Criteria type	Basin Plan SSO	Basin Plan SSO	Basin Plan SSO	Basin Plan Narrative	CTR HH	Basin Plan Narrative
Criteria -Acute	-----	74	----	----	----	----
Criteria -Chronic	-----	8.2	----	-----	----	1.0
SSO Criteria -Acute	9.4	-----	9.4	----	----	----
SSO Criteria -Chronic	6.0	-----	2.9	----	----	----
Water Effects ratio (WER)	1	1	1	1	1	1
Lowest WQO	11	15	2.9	1.4E-08	5.9	1.0
Site Specific Translator - MDEL	0.83	0.82	-----	-----	----	-----
Site Specific Translator - AMEL	0.56	0.56	-----	-----	----	-----
Dilution Factor (D) (if applicable)	0	0	2.25	0	0	2.25
No. of samples per month	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	N	N	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y	Y	N
Applicable Acute WQO	11	90	9.4	----	----	----
Applicable Chronic WQO	11	15	2.9	----	----	1.0
HH criteria	----	4.6E+03	2.2E+05	1.4E-08	5.9	----

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Dioxin-TEQ	Bis (2-Ethylhexyl) Phthalate	Chronic Toxicity
Background (Maximum Conc for Aquatic Life calc)	14.3	30	0.4	----	----	0.0
Background (Average Conc for Human Health calc)	----	9.1	0.4	7.1E-08	0.5	----
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	N	Y	N	N
ECA acute	11.3	90	30	----	----	----
ECA chronic	10.7	15	8.5	----	----	3.3
ECA HH	----	4.6E+03	7.1E+05	1.4E-08	6	----
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	Y	Y	N/A
Avg of effluent data points	6.4	4.0	2.2	----	----	----
Std Dev of effluent data points	1.2	1.2	2.0	----	----	----
CV calculated	0.18	0.30	0.89	N/A	N/A	N/A
CV (Selected) - Final	0.18	0.30	0.89	0.6	0.6	0.6
ECA acute mult99	0.66	0.52	0.23	----	----	----
ECA chronic mult99	0.81	0.71	0.41	----	----	0.53
LTA acute	7.52	47	6.7	-----	-----	----
LTA chronic	8.68	10	3.5	----	----	1.7
minimum of LTAs	7.52	10	3.5	-----	-----	1.7
AMEL mult95	1.2	1.3	1.8	1.6	1.6	1.6
MDEL mult99	1.5	1.9	4.4	3.1	3.1	3.1
AMEL (aq life)	8.7	13	6.4	----		2.7
MDEL(aq life)	11	20	15	----		5.3
MDEL/AMEL Multiplier	1.3	1.5	2.4	2.0	2.0	2.0
AMEL (human hlth)	----	4.6E+03	7.1E+05	1.4E-08	6	----
MDEL (human hlth)	----	----	1.7E+06	2.8E-08	12	----
minimum of AMEL for Aq. life vs HH	8.7	13	6.4	1.4E-08	5.9	2.7
minimum of MDEL for Aq. Life vs HH	11	20	15	2.8E-08	12	5.3
Previous order limit (AMEL)	8.6	11	6.9	1.4E-08	----	narrative
Previous order limit (MDEL)	11	18	14	2.8E-08	----	narrative
Final limit - AMEL	8.6	11	6.4	1.4E-08	5.9	2.7
Final limit - MDEL	11	18	14	2.8E-08	12	5.3

Unit Abbreviations:

µg/L = micrograms per liter
TU_c = chronic toxicity units, equal to 100/NOEL, where NOEL = IC_{25}, EC_{25}, or NOEC

e. Feasibility of Compliance with Copper WQBELs. The Water Board adopted Cease and Desist Order No. R2-2009-0071 because the Discharger could not comply with the copper WQBELs in the previous order. In compliance with Order No. R2-2009-0071, the Discharger implemented several measures aimed at reducing copper concentrations in plant effluent, including installation of a polymer feed system to the secondary clarifier to enhance copper removal before the beginning of the 2010-2011 discharge season. From October 2010 through April 2014, the 95th percentile of the effluent copper concentration, 8.5 µg/L, was less than this Order's AMEL, 8.6 µg/L, and the 99th percentile of the effluent copper concentration, 9.6 µg/L, was less than this Order's MDEL, 11 µg/L, indicating that the Discharger is able to comply with this Order's WQBELs. Therefore, Cease and Desist Order No. R2-2009-0071 is unnecessary and may be rescinded.

5. Whole Effluent Acute Toxicity

This Order includes effluent limitations for whole effluent acute toxicity based on Basin Plan Table 4-3. All bioassays are to be performed according to the U.S. EPA approved method in 40 C.F.R. section 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 5th Edition (EPA-821-R-02-012). The approved test species specified in the Monitoring and Reporting Program (MRP) is rainbow trout (*Onchorhynchus mykiss*).

Based on Basin Plan section 3.3.20, if the Discharger can demonstrate that ammonia causes acute toxicity in excess of the acute toxicity limitations in this Order and that the ammonia in the discharge complies with the ammonia effluent limitations in this Order, then such toxicity does not constitute a violation of the effluent limitations for whole effluent acute toxicity.

D. Effluent Limitation Considerations

1. Anti-backsliding. This Order complies with the anti-backsliding provisions of CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l), which generally require effluent limitations in a reissued permit to be as stringent as those in the previous permit. Newly calculated copper, nickel, and cyanide limits are less stringent than those in the previous order; therefore, this Order retains the previous limits to avoid backsliding.

This Order does not retain lead and selenium limits from the previous order because data no longer indicate that these pollutants have reasonable potential to exceed water quality objectives. This is consistent with State Water Board Order WQ 2001-16.

2. Antidegradation. This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. It continues the status quo with respect to the level of discharge authorized in the previous order, which is the baseline by which to measure whether degradation will occur. This Order does not allow for a reduced level of treatment or increase effluent limitations relative to those in the previous order.

3. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. This

Order's technology-based requirements implement minimum, applicable federal technology-based requirements. In addition, this Order contains more stringent effluent limitations as necessary to meet water quality standards. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement CWA requirements.

This Order's WQBELs have been derived to implement water quality objectives that protect beneficial uses. The beneficial uses and water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating these WQBELs are based on the CTR, as implemented in accordance with the SIP, which U.S. EPA approved on May 18, 2000. U.S. EPA approved most Basin Plan beneficial uses and water quality objectives prior to May 30, 2000. Beneficial uses and water quality objectives submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 C.F.R. section 131.21(c)(1). U.S. EPA approved the remaining beneficial uses and water quality objectives so they are applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations in sections V.A and V.B of the Order are based on Basin Plan narrative and numeric water quality objectives. The receiving water limitation in section V.C of the Order requires compliance with federal and State water quality standards.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Attachment D contains standard provisions that apply to all NPDES permits in accordance with 40 C.F.R. section 122.41 and additional conditions applicable to specific categories of permits in accordance with 40 C.F.R. section 122.42. The Discharger must comply with these provisions. The conditions set forth in 40 C.F.R. sections 122.41(a)(1) and (b) through (n) apply to all state-issued NPDES permits and must be incorporated into the permits either expressly or by reference.

In accordance with 40 C.F.R. section 123.25(a)(12), states may omit or modify conditions to impose more stringent requirements. Attachment G contains standard provisions that supplement the federal standard provisions in Attachment D.

This Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the State's enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates Water Code section 13387(e) by reference.

B. Monitoring and Reporting

CWA section 308 and 40 C.F.R. sections 122.41(h), 122.41(j)-(l), 122.44(i), and 122.48 require that NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry,

reporting, and recordkeeping requirements. The Monitoring and Reporting Program (Attachment E) of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. For more background regarding these requirements, see Fact Sheet section VII.

C. Special Provisions

1. Reopener Provisions

These provisions are based on 40 C.F.R. sections 122.62 and 122.63 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new and relevant information that may become available in the future, and other circumstances as allowed by law.

2. Effluent Characterization Study and Report

This Order does not include effluent limitations for priority pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the MRP and Attachment G. Monitoring data are necessary to verify that the "no" and "cannot determine" reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to Water Code section 13267 and is necessary to inform the next permit reissuance and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality during the term of this Order.

3. Pollutant Minimization Program

This provision is based on Basin Plan section 4.13.2 and SIP section 2.4.5.

4. Special Provisions for Municipal Facilities

a. Sludge and Biosolids Management. Provision VI.C.4.a of the Order is based on Basin Plan section 4.17 and 40 C.F.R. parts 257 and 503. "Sludge" refers to the solid, semisolid, and liquid residue removed during primary, secondary, and advanced wastewater treatment processes. "Biosolids" refers to sludge that has been treated and may be beneficially reused.

b. Collection System Management. Provision VI.C.4.b of the Order explains this Order's requirements as they relate to the Discharger's collection system, and promotes consistency with the State Water Board's *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (General Collection System WDRs), Order No. 2006-0003-DWQ, as amended by Order No. WQ 2013-0058-EXEC. The General Collection System WDRs require 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 Collection System WDRs. The General Collection System WDRs contain requirements for collection system operation and maintenance, and for reporting and mitigating sanitary sewer overflows. They also require agencies to develop sanitary sewer management plans and report all sanitary sewer overflows. The Discharger must comply with both the General Collection System WDRs and this Order.

5. Other Special Provisions

a. Reliability and Assurance Plan and Status Report. Provision VI.C.5.a of the Order is required to justify an exception to Basin Plan Discharge Prohibition 1 (see Fact Sheet section IV.A.2). Basin Plan Discharge Prohibition 1 is intended to protect shallow waters from the effects of abnormal discharges caused by temporary upsets and malfunctions.

b. Corrective Measures to Minimize Blending. This provision is based on 40 C.F.R. section 122.41(m) and guidance provided by U.S. EPA's proposed Peak Wet Weather Policy (December 2005). The previous order required the Discharger to submit a No Feasible Alternatives Analysis. Table 5 of this Order contains specific tasks to reduce blending, which, in part, are tasks the Discharger identified in its No Feasible Alternative Analysis, dated June 3, 2014. These tasks are feasible for the Discharger to undertake within the term of this Order to improve wet weather management and reduce blending.

This provision requires the Discharger to submit a new No Feasible Alternatives Analysis (Utility Analysis) with its application for permit reissuance. The primary purposes of the Utility Analysis are to demonstrate that there are currently no feasible alternatives to blending (i.e., all feasible actions that could have been implemented have been implemented) and to identify all feasible actions that can be implemented within the next permit reissuance cycle. U.S. EPA's Proposed Wet Weather Policy suggests specific analyses for the Discharger to complete in order to determine whether its peak wet weather flow blending discharges should be approved under 40 C.F.R. section 122.41(m) and whether any feasible alternatives to blending are available. These analyses are intended to address the criteria for approving a bypass under 40 C.F.R. section 122.41(m)(4)(i)(A)-(C). The Utility Analysis may be used to review and approve or deny future wet weather blending-related bypasses. If these criteria are met and no feasible alternative exists, the Regional Water Board may approve peak wet weather flow diversions around secondary treatment units as an anticipated bypass under 40 C.F.R. section 122.41(m)(4)(ii).

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

d. Cyanide Action Plan. This provision is based on Basin Plan section 4.7.2.2 and is necessary to ensure that use of cyanide site-specific objectives is consistent with antidegradation policies. The threshold for considering influent cyanide concentrations to indicate a possible "significant cyanide discharge" in the Discharger's service area is set at 18 µg/L. This concentration is about 1.5 times the maximum cyanide concentration (12 µg/L) found in the plant's influent during the previous order term. Because the Discharger has not observed influent cyanide concentrations greater than12 µg/L, if influent concentrations 1.5 times this level were observed, there could be a significant cyanide source.

e. Standard Operating Procedures for Resource Recovery (Optional). Standard Operating Procedures are required for dischargers that accept hauled waste fats, oil, and grease for injection into anaerobic digesters. The development and implementation of Standard Operating Procedures for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt operations from separate and redundant permitting programs. If the Discharger does not accept fats, oil, and grease for resource recovery purposes, it is not required to develop and implement Standard Operating Procedures.

VII. MONITORING AND REPORTING PROGRAM (MRP)

Attachment E contains the MRP for this Order. It specifies sampling stations, pollutants to be monitored (including all parameters for which effluent limitations are specified), monitoring frequencies, and reporting requirements. The following provides the rationale for the MRP requirements.

A. MRP Requirements Rationale

1. **Influent Monitoring.** Influent flow monitoring is necessary to understand facility operations. BOD_5 and TSS monitoring is necessary to evaluate compliance with this Order's 85 percent removal requirement. Basin Plan section 4.7.2.2 requires cyanide monitoring because this Order is based on site-specific cyanide water quality objectives.

2. **Effluent Monitoring.** Effluent flow monitoring is necessary to evaluate compliance with Prohibition III.D (average dry weather flow) and to understand facility operations. Effluent monitoring at Monitoring Locations EFF-001 and EFF-001B (if blending) is necessary to evaluate compliance with this Order's effluent limitations and to support the reasonable potential analysis and development of effluent limitations for the next permit reissuance. Provision VI.C.2.a of the Order requires monitoring for priority pollutants for which there are no effluent limits to inform the next permit reissuance (e.g., to support the reasonable potential analysis) and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality.

3. **Whole Effluent Toxicity Testing**. Acute and chronic whole effluent toxicity tests are necessary to evaluate compliance with the acute and chronic toxicity effluent limitations. Chronic toxicity tests are also necessary to evaluate whether chronic toxicity triggers the need for accelerated monitoring and a Toxicity Reduction Evaluation. The accelerated monitoring triggers are based on Basin Plan Table 4-5, except that accelerated monitoring is not triggered if future monitoring continues to show that toxicity is due only to pyrethroids because such accelerated monitoring would not provide useful information regarding the Discharger's ongoing efforts to reduce pyrethroids.

   The MRP requires the Discharger to conduct a chronic toxicity screening phase study prior to permit reissuance to ensure that chronic toxicity tests are conducted on the most sensitive species possible. The Discharger's May 2014 *Chronic Toxicity Screening Study*, supplemented by its July 2014 *Addendum to Effluent Chronic Toxicity Screening Study*, concluded that red abalone (*Haliotis rufescens*) was the most sensitive species. However, abalone is highly sensitive to zinc, a substance usually present in plant influent red abalone's

No Observed Effect Level (NOEC) concentration of 32 ug/L. The Marin Municipal Water District, the water purveyor for the plant service area, uses zinc orthophosphate as a corrosion inhibitor, a practice over which the Discharger has no control. The Discharger removes about 70 percent of the zinc present in its influent, and Table F-7 demonstrates that there is no reasonable potential for effluent zinc to exceed the water quality objectives. Therefore, the Discharger will use *Mysidopsis bahia*, the most sensitive test species not subject to zinc interference, for chronic toxicity monitoring.

4. **Receiving Water Monitoring.** The Discharger is required to continue participating in the RMP, which involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. This monitoring is necessary to characterize the receiving water and the effects of the discharges authorized in this Order. The Discharger is also required to monitor receiving waters at monitoring locations RSW-001 and RSW-002 to provide data necessary for reasonable potential analysis for ammonia and temperature. Monitoring location RSW-001 is the point where the highest un-ionized ammonia would be expected based on the Discharger's *Receiving Water Ammonia Characterization Study – Final Report*, dated August 28, 2012. Monitoring location RSW-002 is upstream of both Discharge Point Nos. 001 and 002, and represents ambient Miller Creek conditions.

B. Monitoring Requirements Summary. The table below summarizes this Order's monitoring requirements. This table is for informational purposes only. The actual requirements are specified in the MRP and elsewhere in this Order:

Table F-9. Monitoring Requirements Summary

Parameter	Influent INF-001	Effluent[1] EFF-001	Effluent EFF-001B (Blending)	Sludge and Biosolids BIO-001	Receiving Water RSW-001 RSW-002
Flow	Continuous/D	Continuous/D	Continuous/D		
Volume of partially treated wastewater			1/Event		
Duration of blending event			1/Event		
BOD_5	1/Week	1/Week	1/Year		
TSS	1/Week	1/Week	1/Day		
Oil and Grease		1/Quarter	1/Year		
pH		Continuous or 1/Day	1/Year		1/Month
Chlorine Residual		Continuous or 1/Hour	1/Year		
Enterococcus Bacteria		1/Week	1/Day		Support RMP
Acute Toxicity		1/Quarter			Support RMP
Chronic Toxicity		1/Quarter			Support RMP
Ammonia, Total		1/Month	1/Year		1/Month
Arsenic				See Att.G section III.B.2	
Chromium				See Att.G section III.B.2	

Parameter	Influent INF-001	Effluent[1] EFF-001	Effluent EFF-001B (Blending)	Sludge and Biosolids BIO-001	Receiving Water RSW-001 RSW-002
Copper		1/Month	1/Year		Support RMP
Nickel		1/Month	1/Year	See Att.G section III.B.2	Support RMP
Cyanide	2/Year	1/Month	1/Year		Support RMP
Bis(2-EthylHexyl)Phthalate		1/Month	1/Year		Support RMP
Dioxin-TEQ		1/Year			Support RMP
Other Priority Pollutants		1/Year			
Temperature		1/Day			1/Month
Hardness					1/Month
Salinity					1/Month
Standard Observations					1/Month
Metric tons/year				See Att. G section III.B.1	
Paint filter test				See Att.G section III.B.2	

[1] Flow shall be monitored year round. For necessary discharges during the non-discharge season (June 1 to October 31), the Discharger shall monitor for flow, BOD_5, TSS, pH, chlorine residual, enterococcus bacteria, ammonia, and cyanide. Monitoring the other parameters is not required.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through Marin Independent Journal. The public had access to the agenda and any changes in dates and locations through the Regional Water Board's website at http://www.waterboards.ca.gov/sanfranciscobay.

B. Written Comments. Interested persons were invited to submit written comments concerning the tentative WDRs as explained through the notification process. Comments were due either in person or by mail at the Regional Water Board office at 1515 Clay Street, Suite 1400, Oakland, California 94612, to the attention of Marcia Liao.

For full staff response and Regional Water Board consideration, the written comments were due at the Regional Water Board office by 5:00 p.m. on **March 9, 2015**.

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

Date: May 13, 2015
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: Marcia Liao, (510) 622-2377, Marcia.Liao@waterboards.ca.gov

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested to be in writing.

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

D. Reconsideration of Waste Discharge Requirements. Any aggrieved person may petition the State Water Board to review the Regional Water Board decision regarding the final WDRs. The State Water Board must receive the petition at the following address within 30 calendar days of the Regional Water Board action:

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

For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

E. Information and Copying. The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the address above at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling (510) 622-2300.

F. Register of Interested Persons. Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the 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 Marcia Liao at (510) 622-2377 or Marcia.Liao@waterboards.ca.gov.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ATTACHMENT G

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

For

NPDES WASTEWATER DISCHARGE PERMITS

March 2010

Contents

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

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

FOR

NPDES WASTEWATER DISCHARGE PERMITS

APPLICABILITY

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

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

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

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

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

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

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

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

c. Provisions of emergency standby power.

d. Protection against vandalism.

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

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

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

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

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

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

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

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

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

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

2. Wastewater Facilities Status Report - The Discharger shall regularly review, revise, or update, as necessary, its Wastewater Facilities Status Report. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

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

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

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

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

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

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

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

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

1. Storm water Pollution Prevention Plan (SWPP Plan)

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

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

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

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

2. Source Identification

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

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

b. A site map showing the following:

1) Storm water conveyance, drainage, and discharge structures;

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

3) Paved areas and buildings;

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

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

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

7) Vehicle service areas.

c. A narrative description of the following:

1) Wastewater treatment process activity areas;

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

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

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

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

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

3. Storm water Management Controls

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

a. Storm water pollution prevention personnel

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

b. Good housekeeping

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

c. Spill prevention and response

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

d. Source control

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

e. Storm water management practices

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

f. Sediment and erosion control

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

g. Employee training

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

h. Inspections

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

i. Records

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

4. Annual Verification of SWPP Plan

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

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

1. Use of Certified Laboratories

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

2. Use of Appropriate Minimum Levels

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

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

3. Frequency of Monitoring

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

a. Timing of Sample Collection

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

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

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

4) Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay test the MRP requires. During the course of the test, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event a bioassay test does

not comply with permit limits, the Discharger shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limits.

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

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

b. Conditions Triggering Accelerated Monitoring

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

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

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

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

5) When a bypass occurs (except one subject to provision III.A.3.b.6 below), the Discharger shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the duration of the bypass (including acute toxicity using static renewals), except chronic toxicity, unless otherwise stipulated by the MRP.

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

TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass discharge event for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

c. Storm water Monitoring

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

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

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

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

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

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

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

d. Receiving Water Monitoring

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

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

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

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

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

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

1. Biosolids Monitoring Frequency

Biosolids disposal must be monitored at the following frequency:

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

(Metric tons are on a dry weight basis)

2. Biosolids Pollutants to Monitor

Biosolids shall be monitored for the following constituents:

- Land Application: Arsenic, cadmium, copper, mercury, molybdenum, nickel, lead, selenium, and zinc
- Municipal Landfill: Paint filter test (pursuant to 40 CFR 258)
- Biosolids-only Landfill or Surface Disposal Site (if no liner and leachate system): arsenic, chromium, and nickel

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

1. Receiving Water Observations

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

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

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

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

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

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

f. *Weather conditions*:

1) Air temperature; and

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

2. Wastewater Effluent Observations

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

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

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

3. Beach and Shoreline Observations

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

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

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

4. Land Retention or Disposal Area Observations

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

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

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

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

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

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

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

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

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

IV. STANDARD PROVISIONS – RECORDS

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

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

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

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

1. Analytical Information

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

2. Flow Monitoring Data

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

a. Total volume for each day; and

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

3. Wastewater Treatment Process Solids

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

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

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

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

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

2) Solids content of the dewatered biosolids; and

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

4. Disinfection Process

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

a. For bacteriological analyses:

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

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

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

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

2) Chlorine dosage (kg/day); and

3) Dechlorination chemical dosage (kg/day).

5. Treatment Process Bypasses

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

a. Identification of the treatment process bypassed;

b. Dates and times of bypass beginning and end;

c. Total bypass duration;

d. Estimated total bypass volume; and

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

6. Treatment Facility Overflows

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

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

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

1. Self Monitoring Reports

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

a. Transmittal letter

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

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

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

3) Causes of violations;

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

5) Data invalidation (Data should not be submitted in an SMR if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate any measurement after it was submitted in an SMR, a letter shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. This request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation [e.g., laboratory sheet, log entry, test results, etc.], and discussion of the

corrective actions taken or planned [with a time schedule for completion] to prevent recurrence of the sampling or measurement problem.);

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

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

b. Compliance evaluation summary

Each report shall include a compliance evaluation summary. This summary shall include each parameter for which the permit specifies effluent limits, the number of samples taken during the monitoring period, and the number of samples that exceed applicable effluent limits.

c. Results of analyses and observations

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

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

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

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

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

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

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

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

Table A

Minimum Levels, Toxicity Equivalency Factors,
and Bioaccumulation Equivalency Factors

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

d. Data reporting for results not yet available

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

e. Flow data

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

f. Annual self monitoring report requirements

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

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

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

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

4) List of approved analyses, including the following:

(i) List of analyses for which the Discharger is certified;

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

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

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

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

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

g. Report submittal

The Discharger shall submit SMRs to:

California Regional Water Quality Control Board

San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Wastewater Division

h. Reporting data in electronic format

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

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

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

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

D. Compliance Schedules – Not supplemented

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

1. Spill of Oil or Other Hazardous Material Reports

a. Within 24 hours of becoming aware of a spill of oil or other hazardous material that is not contained onsite and completely cleaned up, the Discharger shall report by telephone to the Regional Water Board at (510) 622-2369.

b. The Discharger shall also report such spills to the State Office of Emergency Services [telephone (800) 852-7550] only when the spills are in accordance with applicable reporting quantities for hazardous materials.

c. The Discharger shall submit a written report to the Regional Water Board within five working days following telephone notification unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:

1) Date and time of spill, and duration if known;

2) Location of spill (street address or description of location);

3) Nature of material spilled;

4) Quantity of material involved;

5) Receiving water body affected, if any;

6) Cause of spill;

7) Estimated size of affected area;

8) Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);

9) Corrective actions taken to contain, minimize, or clean up the spill;

10) Future corrective actions planned to be taken to prevent recurrence, and schedule of implementation; and

11) Persons or agencies notified.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants [1]

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and are consistent with and supercede requirements imposed on the Discharger by the Executive Officer by letter of May 1, 2008, issued pursuant to California Water Code Section 13383.

a. Two (2)-Hour Notification

For any unauthorized discharges that result in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services (telephone 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. The notification to the Regional Water Board shall be via the Regional Water Board's online reporting system at www.wbers.net, and shall include the following:

1) Incident description and cause;

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

3) Date and time the unauthorized discharge started;

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

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

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

6) Identity of the person reporting the unauthorized discharge.

b. 24-hour Certification

Within 24 hours, the Discharger shall certify to the Regional Water Board, at www.wbers.net, that the State Office of Emergency Services and the local health officers or directors of environmental health with jurisdiction over the affected water bodies have been notified of the unauthorized discharge.

c. 5-Day Written Report

Within five business days, the Discharger shall submit a written report, via the Regional Water Board's online reporting system at www.wbers.net, that includes, in addition to the information required above, the following:

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

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

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

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

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

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

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

d. Communication Protocol

To clarify the multiple levels of notification, certification, and reporting, the current communication requirements for unauthorized discharges from municipal wastewater treatment plants are summarized in Table B that follows.

Table B

Summary of Communication Requirements for Unauthorized Discharges[1] from Municipal Wastewater Treatment Plants

Discharger is required to:	Agency Receiving Information	Time frame	Method for Contact
1. Notify	California Emergency Management Agency (Cal EMA)	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Telephone – (800) 852-7550 (obtain a control number from Cal EMA)
	Local health department	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Depends on local health department
	Regional Water Board	As soon as possible, but not later than **2 hours** after becoming aware of the unauthorized discharge.	Electronic[2] www.wbers.net
2. Certify	Regional Water Board	As soon as possible, but not later than **24 hours** after becoming aware of the unauthorized discharge.	Electronic[3] www.wbers.net
3. Report	Regional Water Board	Within **5 business days** of becoming aware of the unauthorized discharge.	Electronic[4] www.wbers.net

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

[2] In the event that the Discharger is unable to provide online notification within 2 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the notification information into the Regional Water Board's online system in electronic format.

[3] In most instances, the 2-hour notification will also satisfy 24-hour certification requirements. This is because the notification form includes fields for documenting that OES and the local health department have been contacted. In other words, if the Discharger is able to complete all the fields in the notification form within 2 hours, certification requirements are also satisfied. In the event that the Discharger is unable to provide online certification within 24 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the certification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the certification information into the Regional Water Board's online system in electronic format.

[4] If the Discharger cannot satisfy the 5-day reporting requirements via the Regional Water Board's online reporting system, it shall submit a written report (preferably electronically in pdf) to the appropriate Regional Water Board case manager. In cases where the Discharger cannot satisfy the 5-day reporting requirements via the online reporting system, it must still complete the Regional Water Board's online reporting requirements within 15 calendar days of becoming aware of the unauthorized discharge.

F. Planned Changes – Not supplemented

G. Anticipated Noncompliance – Not supplemented

H. Other Noncompliance – Not supplemented

I. Other Information – Not supplemented

VI. STANDARD PROVISION – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

VIII. DEFINITIONS – This section is an addition to Standard Provisions (Attachment D)

More definitions can be found in Attachment A of this NPDES Permit.

1. Arithmetic Calculations

   a. Geometric mean is the antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

   $$\text{Geometric Mean} = Anti\log\left(\frac{1}{N}\sum_{i=1}^{N} Log(C_i)\right)$$

   or

   $$\text{Geometric Mean} = (C_1 * C_2 * \ldots * C_N)^{1/N}$$

   Where "N" is the number of data points for the period analyzed and "C" is the concentration for each of the "N" data points.

   b. Mass emission rate is obtained from the following calculation for any calendar day:

   $$\text{Mass emission rate (lb/day)} = \frac{8.345}{N}\sum_{i=1}^{N} Q_i C_i$$

   $$\text{Mass emission rate (kg/day)} = \frac{3.785}{N}\sum_{i=1}^{N} Q_i C_i$$

   In which "N" is the number of samples analyzed in any calendar day and "Q_i" and "C_i" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" grab samples that may be taken in any calendar day. If a composite sample is taken, "C_i" is the concentration measured in the composite sample and "Q_i" is the average flow rate occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

Cd = Average daily concentration = $\frac{1}{Q_t}\sum_{i=1}^{N} Q_i C_i$

In which "N" is the number of component waste streams and "Q" and "C" are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the "N" waste streams. "Q_t" is the total flow rate of the combined waste streams.

c. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the formulas in the paragraph above, using the effluent concentration limit specified in the permit for the period and the specified allowable flow.

d. POTW removal efficiency is the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

Removal Efficiency (%) = 100 × [1-(Effluent Concentration/Influent Concentration)]

2. Biosolids means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from or created in wastewater by the unit processes of a treatment system. It also includes, but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow and underflow in the solids handling parts of the wastewater treatment system.

3. Blending is the practice of recombining wastewater that has been biologically treated with wastewater that has bypassed around biological treatment units.

4. Bottom sediment sample is (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters, or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertebrates.

5. Composite sample is a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow rate of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative sampling protocol for the given parameter subject to Executive Officer approval.

6. Depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled. The Discharger shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

7. Flow sample is an accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.

8. Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the wastewater is collected.

9. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.

10. Overflow is the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g., through manholes, at pump stations, and at collection points) upstream from the treatment plant headworks or from any part of a treatment plant facility.

11. Priority pollutants are those constituents referred to in 40 CFR Part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.

12. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

13. Toxic pollutant means any pollutant listed as toxic under federal Clean Water Act section 307(a)(1) or under 40 CFR 401.15.

14. Untreated waste is raw wastewater.

15. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in the permit. The requirements of the permit apply to the entire volume of water, and the material therein, that is disposed of to surface and ground waters of the State of California.

Table C

List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method [1]	Minimum Levels [2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1.	Antimony	204.2					10	5	50	0.5	5	0.5		1000
2.	Arsenic	206.3				20		2	10	2	2	1		1000
3.	Beryllium						20	0.5	2	0.5	1			1000
4.	Cadmium	200 or 213					10	0.5	10	0.25	0.5			1000
5a.	Chromium (III)	SM 3500												
5b.	Chromium (VI)	SM 3500				10	5							1000
	Chromium (total) [3]	SM 3500					50	2	10	0.5	1			1000
6.	Copper	200.9					25	5	10	0.5	2			1000
7.	Lead	200.9					20	5	5	0.5	2			10,000
8.	Mercury	1631 (note) [4]												
9.	Nickel	249.2					50	5	20	1	5			1000
10.	Selenium	200.8 or SM 3114B or C						5	10	2	5	1		1000
11.	Silver	272.2					10	1	10	0.25	2			1000
12.	Thallium	279.2					10	2	10	1	5			1000
13.	Zinc	200 or 289					20		20	1	10			
14.	Cyanide	SM 4500 CN^- C or I				5								
15.	Asbestos (only required for dischargers to MUN waters) [5]	0100.2 [6]												
16.	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613												
17.	Acrolein	603	2.0	5										
18.	Acrylonitrile	603	2.0	2										
19.	Benzene	602	0.5	2										
33.	Ethylbenzene	602	0.5	2										
39.	Toluene	602	0.5	2										
20.	Bromoform	601	0.5	2										
21.	Carbon Tetrachloride	601	0.5	2										
22.	Chlorobenzene	601	0.5	2										
23.	Chlorodibromomethane	601	0.5	2										
24.	Chloroethane	601	0.5	2										
25.	2-Chloroethylvinyl Ether	601	1	1										

[1] The suggested method is the U.S. EPA Method unless otherwise specified (SM = Standard Methods). The Discharger may use another U.S. EPA-approved or recognized method if that method has a level of quantification below the applicable water quality objective. Where no method is suggested, the Discharger has the discretion to use any standard method.

[2] Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., U.S. EPA 200.9); Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

[3] Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest hexavalent chromium criterion (11 ug/l).

[4] The Discharger shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 ug/l).

[5] MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

[6] Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, U.S. EPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method [1]	Minimum Levels [2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
26.	Chloroform	601	0.5	2										
75.	1,2-Dichlorobenzene	601	0.5	2										
76.	1,3-Dichlorobenzene	601	0.5	2										
77.	1,4-Dichlorobenzene	601	0.5	2										
27.	Dichlorobromomethane	601	0.5	2										
28.	1,1-Dichloroethane	601	0.5	1										
29.	1,2-Dichloroethane	601	0.5	2										
30.	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2										
31.	1,2-Dichloropropane	601	0.5	1										
32.	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2										
34.	Methyl Bromide or Bromomethane	601	1.0	2										
35.	Methyl Chloride or Chloromethane	601	0.5	2										
36.	Methylene Chloride or Dichlorormethane	601	0.5	2										
37.	1,1,2,2-Tetrachloroethane	601	0.5	1										
38.	Tetrachloroethylene	601	0.5	2										
40.	1,2-Trans-Dichloroethylene	601	0.5	1										
41.	1,1,1-Trichloroethane	601	0.5	2										
42.	1,1,2-Trichloroethane	601	0.5	2										
43.	Trichloroethene	601	0.5	2										
44.	Vinyl Chloride	601	0.5	2										
45.	2-Chlorophenol	604	2	5										
46.	2,4-Dichlorophenol	604	1	5										
47.	2,4-Dimethylphenol	604	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49.	2,4-Dinitrophenol	604	5	5										
50.	2-Nitrophenol	604		10										
51.	4-Nitrophenol	604	5	10										
52.	3-Methyl-4-Chlorophenol	604	5	1										
53.	Pentachlorophenol	604	1	5										
54.	Phenol	604	1	1		50								
55.	2,4,6-Trichlorophenol	604	10	10										
56.	Acenaphthene	610 HPLC	1	1	0.5									
57.	Acenaphthylene	610 HPLC		10	0.2									
58.	Anthracene	610 HPLC		10	2									
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61.	Benzo(a)Pyrene	610 HPLC		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene	610 HPLC		10	10									
63.	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64.	Benzo(k)Fluoranthene	610 HPLC		10	2									
74.	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86.	Fluoranthene	610 HPLC	10	1	0.05									
87.	Fluorene	610 HPLC		10	0.1									
92.	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100.	Pyrene	610 HPLC		10	0.05									
68.	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										

CTR No.	Pollutant/Parameter	Analytical Method [1]	Minimum Levels [2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
70.	Butylbenzyl Phthalate	606 or 625	10	10										
79.	Diethyl Phthalate	606 or 625	10	2										
80.	Dimethyl Phthalate	606 or 625	10	2										
81.	Di-n-Butyl Phthalate	606 or 625		10										
84.	Di-n-Octyl Phthalate	606 or 625		10										
59.	Benzidine	625		5										
65.	Bis(2-Chloroethoxy)Methane	625		5										
66.	Bis(2-Chloroethyl)Ether	625	10	1										
67.	Bis(2-Chloroisopropyl)Ether	625	10	2										
69.	4-Bromophenyl Phenyl Ether	625	10	5										
71.	2-Chloronaphthalene	625		10										
72.	4-Chlorophenyl Phenyl Ether	625		5										
73.	Chrysene	625		10	5									
78.	3,3'-Dichlorobenzidine	625		5										
82.	2,4-Dinitrotoluene	625	10	5										
83.	2,6-Dinitrotoluene	625		5										
85.	1,2-Diphenylhydrazine (note) [7]	625		1										
88.	Hexachlorobenzene	625	5	1										
89.	Hexachlorobutadiene	625	5	1										
90.	Hexachlorocyclopentadiene	625	5	5										
91.	Hexachloroethane	625	5	1										
93.	Isophorone	625	10	1										
94.	Naphthalene	625	10	1	0.2									
95.	Nitrobenzene	625	10	1										
96.	N-Nitrosodimethylamine	625	10	5										
97.	N-Nitrosodi-n-Propylamine	625	10	5										
98.	N-Nitrosodiphenylamine	625	10	1										
99.	Phenanthrene	625		5	0.05									
101.	1,2,4-Trichlorobenzene	625	1	5										
102.	Aldrin	608	0.005											
103.	α-BHC	608	0.01											
104.	β-BHC	608	0.005											
105.	γ-BHC (Lindane)	608	0.02											
106.	δ-BHC	608	0.005											
107.	Chlordane	608	0.1											
108.	4,4'-DDT	608	0.01											
109.	4,4'-DDE	608	0.05											
110.	4,4'-DDD	608	0.05											
111.	Dieldrin	608	0.01											
112.	Endosulfan (alpha)	608	0.02											
113.	Endosulfan (beta)	608	0.01											
114.	Endosulfan Sulfate	608	0.05											
115.	Endrin	608	0.01											
116.	Endrin Aldehyde	608	0.01											
117.	Heptachlor	608	0.01											
118.	Heptachlor Epoxide	608	0.01											

[7] Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 ug/l, then the Discharger shall analyze for 1,2-Diphenylhydrazine.

CTR No.	Pollutant/Parameter	Analytical Method [1]	Minimum Levels [2] (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126.	Toxaphene	608	0.5											

March 9, 2015

Via email to: mliao@waterboards.ca.gov
Cc: bwolfe@waterboards.ca.gov

Ms. Marcia Liao
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Comments on Tentative Order for Las Gallinas Valley Sanitary District

Dear Ms. Liao:

The Las Gallinas Valley Sanitary District (District) appreciates the opportunity to comment on the Tentative Order (TO) for the reissuance of the NPDES Permit for its wastewater treatment plant. The District provides wastewater collection and treatment services for approximately 30,000 residential and businesses customers in northern San Rafael and unincorporated areas of Marin County. The service area is primarily residential with a small amount of commercial development. The District is a leader in water recycling, providing treated effluent to two facilities that produce disinfected tertiary recycled water for distribution throughout the area. It also operates an on-site water reclamation system that includes constructed ponds and marshes maintained with recycled water that provides highly valued community open space for hiking and bird watching. The District's water recycling efforts enable it to divert plant effluent from the NPDES discharge outfalls to beneficial reuse for 6-7 months per year.

The District appreciates the efforts of Water Board staff to communicate with us throughout the permit development process and to take into consideration our concerns. Our major comments relate to the TO's chronic toxicity provisions and to the wording of the blending provisions. The remaining comments cover several minor issues and corrections.

1. CHRONIC TOXICITY

1.a *Effluent Limitations and Discharge Specifications - IV.A Table 4 "Effluent Limitations"*

The District believes that imposition of numeric effluent limitations for chronic toxicity is premature given that the State Board is in the process of developing a Statewide Toxicity Plan. We believe that the until a Statewide Plan exists to guide Regional Boards in this area, the permit

should not incorporate numeric limits, but should rather rely on the narrative limit in Section IV.D and the triggers specified in the Monitoring and Reporting section. This is consistent with several State Board Precedential Orders (Nos. WQ 2003-2012 and subsequent) directing Regional Water Boards not to include numeric limits but to include narrative toxicity limits with numeric triggers that when exceeded would require accelerated monitoring and rigorous TRE/TIE investigations.

The narrative limit and trigger approach has been used successfully in NPDES permits in this Region since the late 1990s to manage effluent toxicity as evidenced by the absence of detectable chronic toxicity in water column samples collected by the Regional Monitoring Program (RMP) for many years. Based on this absence of toxicity, the RMP reduced water column toxicity monitoring to "confirmatory" monitoring once every five years.

EPA has not previously objected to permits in this Region using the narrative toxicity approach with triggers. EPA, by letter dated June 25, 2003 described the conditions under which EPA would consider a narrative effluent limit valid, described in WQO 2003-2012 as "US EPA has also stated that if a narrative effluent is used, the permits must also contain (1) numeric benchmarks for triggering accelerate monitoring, (2) rigorous toxicity reduction evaluation (TRE)/toxicity investigation evaluation (TIE) conditions, and (3) a reopener to establish numeric effluent limitations for either chronic toxicity or the chemical(s) causing toxicity."

It is important to understand that toxicity is an "effect" not a pollutant. Chronic toxicity testing measures sublethal endpoints on test organisms (e.g., juvenile mysid shrimp) such as growth or reproduction. As discussed in the fact sheet, the results from chronic toxicity over the previous permit term demonstrates that the toxicity observed in the treatment plant effluent was at low levels (at or below 2.0 TUc, with most below 1.5 TUc) in all but one instance. The test has poor reproducibility at these low levels. The lowest level effect that can be measured is 1.0 TUc (equivalent to testing in 100% effluent). The three sample median trigger is set at this 1.0 TUc level for shallow water dischargers such as the District. Deepwater dischargers are allowed a 10 TUc trigger, effectively reflecting a 10:1 dilution factor.

Extensive TIE testing by the District, including the one result that exceeded 2 TUc, have pointed to pyrethroid pesticides as the likely source of this toxicity. Two toxicity laboratories widely recognized for their work on NPDES discharge toxicity have corroborated this finding. However, currently available TIE testing methods are limited in their ability to identify specific toxicants, or even classes of toxicants, when they are present at the very low levels seen in the District's effluent. TIE follow-up chemical specific effluent monitoring has detected pyrethroids in the extremely low but potentially toxic nanogram per liter range that has been reported in the literature as affecting sensitive test organisms such as the mysid shrimp (and *Ceriodaphnia*).

The District has ongoing public outreach efforts to raise public awareness of the issue, and participates in Statewide efforts to better characterize the nature of pyrethroids in wastewater. However, in the end, the District has no legal authority to control the public's use of registered pesticides. Only EPA and the California Department of Pesticide Regulation have authority to regulate pesticide usage. The District further notes that its efforts to discourage uses that can result in pyrethroids appearing in wastewater can even run counter to advice from other public agencies. A recent ad placed in the Marin Independent Journal by the Marin Sonoma Mosquito

and Vector Control District encouraged residents to treat clothing with the widely available pyrethroid Pemethrin as a means of combating mosquitos that carry the West Nile Virus. This illustrates the complex nature of the issue, and of limitations faced by a small wastewater district in attempting to change public behavior regarding the use of these products.

The District supports the position of statewide (CASA) and local (BACWA) organizations that believe the State Water Board should be allowed to complete the development of a Statewide Toxicity Plan, which will include methodologies for identifying reasonable potential and for deriving effluent limits for effluent toxicity that have been through a rigorous and transparent public review process. We therefore request that numeric limits for chronic toxicity be deferred until that time.

1.b *Attachment E, paragraph V.B.., Whole Effluent Toxicity Testing Requirements - Triggers*

If the final Tentative Order retains numeric limits for chronic toxicity, the District believes the MRP's provisions for chronic toxicity triggers are unnecessary. In the absence of effluent limits, triggers serve a reasonable role in supporting the narrative objective. With effluent limits, they are not needed to protect receiving water quality, as that role is served by the effluent limit. The District notes that no other effluent limitations in individual discharger permits are accompanied by effluent triggers. In rare cases where effluent triggers have been employed in an NPDES permit (e.g. the regional mercury permit) the numeric value of such triggers is a high percentage (>60%) of the effluent limit. EPA in their January 15, 2015 initial objection letter stated that "We are concerned that chronic WET is treated differently than chemical-specific pollutants …"While the District does not believe that this alone is a sound basis for requiring numeric limits, for the reasons described above, the District does believe that since chemical pollutant effluent limits do not have triggers associated with them that chronic toxicity limits should also not have triggers, if numeric limits are to be retained in the permit.

The retention of the previous permit's toxicity triggers will only perpetuate a cycle of expensive testing and investigations that provides minimal, if any, additional information or water quality benefit. The District was fortunate in that its TIE investigation was successful in having identified the likely source of toxicity (see previous comments on effluent limitations for chronic toxicity), in large part because one event included a toxicity "signal" that was sufficiently strong to support a successful investigation. (This result would have exceeded the T.O.'s proposed effluent limits and triggered follow-up actions). The more common experience for dischargers conducting TIE investigating in response to low level toxicity are results that are costly but inconclusive. It is no exaggeration to say that for a number of shallow water dischargers, accelerated monitoring and associated investigations in response to low-level chronic toxicity are the dischargers' most costly single laboratory expense, and certainly the most frustrating. A more appropriate and less wasteful regulatory approach, used for other effluent limitations, would be to require accelerated monitoring and/or follow-up investigations when actual limits are exceeded, or at some threshold that is reasonably proximate to the actual limits. The District therefore requests that the TO chronic toxicity trigger levels be eliminated or changed to more more appropriate levels.

Finally, since the likely source of toxicity has been identified and the District is taking all reasonable efforts to reduce impacts (including the diversion of discharge for from the receiving

water for up to seven months per year during low flow periods), the District requests that consideration be given in the next screening study to allowing use of a test species that is less sensitive to pyrethroid toxicity.

2. WATER QUALITY BASED EFFLUENT LIMITS (WQBEL) – CHRONIC TOXICITY

2.a *Fact Sheet IV.C.4.a. (p. F-29)*

The District strongly disagrees with the statement in the Fact Sheet attempting to justify inclusion of numeric chronic toxicity limits that states that "*Numeric WQBELs will further prompt the Discharger to take proactive measures to comply with the limitations and address toxicity in advance of violations that may affect aquatic life*." As explained above in this comment letter, and earlier in the Fact Sheet (p. F-27), the District has been extremely diligent investigating potential sources of the recurring low level toxicity. The most likely causative agent is EPA-regulated pyrethroid pesticides that the District has no legal authority to control. The District is conducting efforts over which is does have control, such as public education and outreach. However, the District cannot prevent residents from purchasing and using pyrethroid containing products, such as pet flea and tick shampoos or clothing treatments for mosquito-proofing that may enter household plumbing and from there the wastewater collection system. Exceedance of chronic toxicity WQBELs would allow the RWB to pursue discretionary enforcement and for third parties to file lawsuits for factors beyond the control of the District (i.e. pyrethroids). Having numeric effluent limits that merely result in the imposition of penalties does not remedy any potential water quality issues, it just penalizes the sampling results. The District requests that the above cited sentence be deleted.

2.b *Fact Sheet IV.C.3.e.ii (p. F-27)*

The District does not dispute the fact that during the prior Order term that there were recurring instances of low level (<2 TUc) chronic toxicity. The District is concerned about the use of an unspecified "presumptive" type reasonable potential analysis (RPA) for chronic toxicity for the first time, in this permit. Chronic toxicity is an effect, not a toxic priority pollutant. Therefore, as with ammonia, the RWB has discretion as to which RPA methodology to use (and per below which effluent limit calculation method to use) for chronic toxicity. Given the unique nature of chronic toxicity results, the District recommends before imposition of numeric WQBELs, that the RWB first collaborate with BACWA and other stakeholders to develop a technically sound and transparent RPA methodology for determining when numeric WQBELs are required to be included in permits and when, based on evidence of consistent compliance, those limits could be removed from permits, as is now done for chemical constituents.

2.c *Fact Sheet IV.C.3.e.i (p. F-26)*

The Fact Sheet is unclear about the process used to adopt a numeric chronic toxicity criterion into the Order, when there is not currently an applicable numeric criterion adopted by either the State or Regional Water Boards. The Fact Sheet states that "For this Order, this narrative objective is translated into a numeric criterion of 1.0 chronic toxicity unit (TUc)." The Fact Sheet does not specify what the regulatory basis is or the process used for this "translation." It appears to the District that this action is equivalent to adoption of a water quality objective and therefore

requests that the Order cite how the requirements of Water Code Section 13241 have been complied with.

2.d *Fact Sheet IV.C.4.c. & d. (p. F-30 - 33)*

Should the Regional Water Board decide to include a numeric limit in the revised Order, regardless of the reasons laid forth above by the District, then the calculation of the limit should be made in an appropriate matter. Comments submitted by BACWA critique the use of the SIP's statistical methodology to calculate the numeric limits. The District recommends a more straight-forward, albeit less statistically sophisticated, approach that is consistent with existing chronic toxicity monitoring triggers used in NPDES permits throughout the region: Simply multiply the water quality objective by an applicable dilution factor. This is the approach implied by the Basin Plan's use of 10 TUc as a monitoring trigger for chronic toxicity for deep water dischargers; deep water dischargers have dilution of 10:1 or greater. Using this approach, combined with a MDEL/AMEL multiplier of 2.0, results in an AMEL of 3.25 TUc and an MDEL of 6.5 TUc.

Consistent with the above recommendation, paragraph IV.C.4.c. & d, would be changed as follows:

> *WQBEL Calculations. The following table shows the WQBEL calculations. Calculations for chemical-specific pollutants are in accordance with the SIP. ~~Calculations for chronic toxicity use the SIP methodology as guidance.~~ Calculations for chronic toxicity assume that the water quality objective of 1.0 TUc will be met at the edge of the mixing zone, where the dilution factor is 3.25:1, or 30.7% effluent. This corresponds to a limit of 3.25 TUc for the average monthly effluent limitation, which corresponds to chronic conditions. An MDEL/AMEL multiplier of 2.0 was used, consistent with ratios between three-sample medians and single-sample maximums identified in Table 4-5 of the Basin Plan.*

Also Strike out last column of Table F-8.

In Table 4 of the permit, the corresponding change would be:

AMEL changes from 2.7 to 3.25 TUc

MDEL changes from 5.3 to 6.5 TUc

3. ACUTE TOXICITY

3a. *Permit Section IV. C. Whole Effluent Toxicity Effluent Limitations*

The District has a long history of nearly 100% compliance with the long-established acute toxicity effluent limitations. Chronic toxicity testing is a much more sensitive test than acute toxicity since it measures sublethal endpoints such as growth and reproduction versus only percent survival in the acute toxicity test. The District does not believe that acute toxicity testing provides useful or actionable information and requests that the effluent limits and monitoring requirements be removed from the Order. BACWA has compiled acute toxicity testing data from

other dischargers throughout the Region showing a similar history of long-term consistent compliance. The District believes that this request is consistent with the State Water Board's recent efforts to identify areas where the cost of compliance can be reduced without adversely impacting water quality.

In February 2015 the Los Angeles Regional Water Board reissued an NPDES permit for the San Jose Creek Water Reclamation Plant that removed that permit's acute toxicity effluent limitations, based on the fact that "*chronic toxicity is a more stringent requirement than acute toxicity. Removal of the numeric acute toxicity effluent limit from the 2009 permit does not constitute backsliding because of this*." (Fact Sheet p. F-69)

4. BLENDING

4.a *Provision V.I.C.5.b, Table 5 "Tasks to Reduce Blending"*

Consistent with this provision's requirements for an Updated Wet Weather Improvements Plan and the overall goal to reduce the use of blending as a wet weather flow management strategy, the District has selecting a qualified firm to prepare engineering plans and specifications for improvements to the plant's secondary treatment processes. These improvements will also consider possible future treatment needs and long-term challenges facing treatment plant (e.g., sea level rise). The cost for this design work is funded, however, funding for construction is expected to require a rate increase that has yet to be presented to or approved by ratepayers.

The wording for Task 1 specifies that certain specific improvements be incorporated into Plan, based on the previous version of the Wet Weather Improvements Plan - major elements of which have been implemented - and the 2012 predesign study by Brown & Caldwell. While the District believes that 2012 study provides a solid framework for future improvements, it is concerned that the Task 1 wording is overly prescriptive and may reduce the District's flexibility in allowing the selected design firm to propose alternative processes that would achieve the same design objectives. Finally, because the service area is subject to occasional extreme rainfall events, the complete elimination of blending under all circumstances may not be practicable. The District therefore request the wording for Task 1 in Table 5 be modified as follows (proposed wording is underlined):

> *1. Develop and Implement Updated Wet Weather Improvement Plan.*
>
> *The Discharger shall develop an updated Wet Weather Improvement Plan that takes into account the alternatives identified in the 2012 Brown and Caldwell study and the corrective measures identified, but not yet completed, in the Discharger's Wet Weather Improvements Report (dated May 1, 2010) and Wet Weather Improvements Workplan (dated August 1, 2010). The Plan shall establish measurable goals to minimize and eventually eliminate blending due to wet weather events <u>as a routine flow management strategy</u>. The Plan shall specify measures to be implemented at the plant and wastewater collection system, and identify their costs, implementation schedules, and proposed funding mechanisms. These measures shall include, but are not limited to, the following:*

a. *Implementation of collection system capital improvement projects at a rate consistent with industry standards based on the condition of the system;*

b. *Feasible reduction of rainwater inflow from known sources, including residential swimming pools, runoff from the Guide Dogs for the Blind facility, and runoff from the treatment plant grounds that is captured and returned to the plant headworks;*

c. *Construction of an additional secondary clarifier;*

d. *Construction of a flow equalization system ~~basin (approximately one million gallons)~~;*

e. *Construction of new activated sludge basins or other secondary treatment capacity enhancements.*

The Discharger's Plan may include alternatives to items c, d, and e above that provide an equivalent means of achieving the blending reduction goals.

The Discharger shall identify in the plan the measures to be undertaken during the term of this Order. The Discharger shall describe the extent to which implementing these measures will improve wet weather management. The Discharger shall incorporate feedbacks, if any, from the Executive Officer and begin implementation of the plan by the date specified.

4.b *Discharge Prohibitions III.C.*

For consistency with permit wording in other sections (e.g. Fact Sheet sections II.A.3 and IV.A.1.c), the District requests that the "reliable process capacity of the secondary treatment units" be identified as 8 mgd (rather than 8.0 mgd). Blending thresholds are controlled by weirs, which are typically not accurate to the level implied by 8.0 mgd.

In that same paragraph, the District requests that the words "as designed" be deleted. Many changes to the treatment plant have occurred since the original plant was designed in the 1950s. Plant operations have evolved according, and therefore may not always conform to the "as designed" standard (e.g., use of the main primary clarifier for flow equalization). Operational changes are captured in the plant O&M Manual and plant SOPs, and reference to these documents is appropriate.

5. OTHERT COMMENTS

5.1. *Fact Sheet – Permit Information I.B*

Reference to Water Reuse Order No. 02-064 should be Order 92-064

5.2 *Fact Sheet - Facility Description II.A.6 Stormwater Management*

Final sentence has a reference to a permit section that does not exist.

5.3 *Fact Sheet – Summary of Existing Requirements and Monitoring Data, Table F-2.*

For selenium, the Highest Monthly Average value was 0.60 ug/L. The Highest Daily Discharge was 0.74 ug/L, as indicated on Table F-7.

5.4 ***Fact Sheet – Water Quality Based Effluent Limitations, Chronic Toxicity, IV.C.3. e.ii.***

The District requests that the following be added to the final paragraph of this section: The potential impacts are mitigated in part by the fact that discharge to the receiving water is prohibited from June-October, when receiving water flows are at their lowest levels.

The District appreciates your consideration of the above comments. Please contact either me or Ray Goebel at EOA, Inc. if you have questions or need additional information.

Sincerely,

Mark R. Williams
General Manager

cc: Board of Directors, LGVSD

March 9, 2015

Marcia Liao
Water Resources Control Engineer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, 14th Floor
Oakland, CA 94612

Via email: mliao@waterboards.ca.gov

Subject: Comment Letter – Tentative Order for Las Gallinas Valley Sanitary District Sewage Treatment Plant (LGVSD) (NPDES No. CA0037851)

Dear Ms. Liao:

The Bay Area Clean Water Agencies (BACWA) appreciates the opportunity to comment on the Tentative Order for reissuance of the Las Gallinas Valley Sanitary District Sewage Treatment Plant (LGVSD) NPDES Permit. BACWA is a joint powers agency whose members own and operate publicly-owned treatment works (POTWs) and sanitary sewer systems that collectively provide sanitary services to over 6.5 million people in the nine county San Francisco Bay Area. BACWA members are public agencies, governed by elected officials and managed by professionals charged with protecting the environment and public health.

BACWA's comments pertain to the new numeric chronic toxicity limits in LGVSD's Tentative Order. LGVSD's current permit contains narrative toxicity limits, and numeric triggers that if exceeded lead to accelerated monitoring as well as a toxicity investigation/reduction evaluation (TIE/TRE). LGVSD periodically measures toxicity up to 2 TUc, exceeding its 3-sample median trigger of 1 TUc, and measured a single sample that was 8 TUc on November 13, 2013. LGVSD has been engaged in an ongoing TIE/TRE which has not yielded any actionable results, although LGVSD has detected low levels of a pesticide, permethrin, in its effluent. The Regional Water Board, at the behest of the USEPA[1], used the exceedance of its chronic toxicity triggers as a justification to find reasonable potential and establish numeric effluent limits. Because these numeric chronic toxicity limits are precedential in our Region, BACWA strongly recommends the Regional Water Board reconsider their adoption pending further discussion about the appropriate standards setting processes identified in this letter. BACWA's concerns and recommendations are described below.

1. **There is no regulation that establishes a methodology for reasonable potential determination and calculation of effluent limits for chronic toxicity.**

[1] Per the January 15, 2015 Pre-notice draft permit initial objection letter (Objection Letter) – NPDES permit for Las Gallinas Valley Sanitary District Sewage Treatment Plant (LGVSD) (NPDES No. CA0037851) sent to Bruce Wolfe, Regional Water Quality Control Board Executive Officer, from Jane Diamond, USEPA Region IX Water Division Direction

At this time there is no specific guidance on establishing numeric chronic toxicity limits in the San Francisco Bay Region. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) states, "Chronic toxicity effluent limits are derived for individual dischargers based upon Best Professional Judgment," and is silent on how to determine reasonable potential. The State Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) lays out a methodology for determining reasonable potential and calculating effluent limits for priority pollutants, but does not address methodologies for toxicity.

In the absence of regulation, which should be developed through a transparent public process, the USEPA is requiring the Regional Water Board to develop an *ad hoc* methodology for determining reasonable potential and setting chronic toxicity effluent limits in this permit. BACWA objects to this development of "policy by permit" and instead requests that the Regional Water Board work with stakeholders to develop a technically sound and robust approach for findings of reasonable potential and calculation of effluent limits.

BACWA RECOMMENDATION: Because of the precedential nature of these numeric chronic toxicity limits, BACWA urges the Regional Water Board to take this opportunity to develop a Regional toxicity strategy through a collaborative stakeholder process. BACWA encourages the Regional Water Board to consider a toxicity watershed permit which would holistically consider toxicity in effluent and receiving waters, set achievable limits and management objectives, and provide guidance for investigating measured toxic effects and conducting toxicity reduction evaluations. The Watershed Permit approach for monitoring potential toxicity of POTW discharges seems like a viable strategy given the robust whole effluent toxicity (WET) data from more than 25 years of effluent monitoring combined with receiving water WET monitoring under the Regional Monitoring Program (RMP) and the Surface Water Ambient Monitoring Program (SWAMP).

2. **Reasonable potential should not be based on trigger exceedances, since triggers do not constitute water quality objectives**

The LGVSD Tentative Order qualitatively determines reasonable potential based on exceedances of trigger levels set to initiate an investigation (not a limit based on a water quality objective). This action represents an *ad hoc* treatment of the triggers as established water quality objectives that are used for compliance purposes. If the Regional Water Board wishes to adopt chronic toxicity water quality objectives, it should be done officially, per Water Code Section 13241. Ideally, reasonable potential determinations should also consider whether measured toxic effect represents real toxicity or is related to the inherent variability of the test method.

BACWA RECOMMENDATION: The Regional Water Board should work with stakeholders to develop appropriate criteria for establishing reasonable potential to prompt setting of numeric chronic toxicity limits, and this process should also address removing these limits in subsequent permits when reasonable potential is not demonstrated.

3. **Where imposed, numeric chronic toxicity limits should replace triggers.**

If dischargers that are found to have reasonable potential are given numeric effluent limits, there is no longer a need for the triggers that are currently used in permits. The triggers, which are set

to lower levels since they do not incorporate dilution for shallow water dischargers, are an unnecessary level of protection when combined with numeric limits. Including both triggers and numeric limits would cause dischargers to waste resources on TIE/TRE investigations for a measured toxic effect that is low level, often nonpersistent and set at a level below the compliance threshold that is presumably protective of the Bay.

BACWA RECOMMENDATION: When dischargers are given numeric chronic toxicity limits, the triggers requiring TIE/TRE investigations should be removed from their permits.

4. **Calculation of effluent limits for toxicity do not make sense using the SIP procedure**

The approach to calculating chronic toxicity effluent limits in the Tentative Order, which closely follows the SIP and the other effluent limitations, is not appropriate for a statistical construct such as chronic toxicity units (TUc). By definition, the lowest observable value is "< 1 TUc," which corresponds to no effect at an effluent concentration of 100%. The background receiving waters cannot have a toxicity of "0.0 TUc" as listed in Table F-8, which mathematically corresponds to an effluent concentration of infinity. Unfortunately, the EPA's Technical Support Document for Water Quality-based Toxics Control contains the same logical error, and assigns "0 TUc" to receiving waters. Following the SIP methodology and using a value of 1.0 TUc as a background concentration produces a final average monthly effluent limit (AMEL) of 0.8 TUc, which is nonsensical.

BACWA RECOMMENDATION: Limits should be calculated using an approach that is consistent with how existing chronic toxicity monitoring triggers are calculated based on dilution in NPDES permits throughout the Region: Simply multiply the water quality objective by an applicable dilution factor. This approach is implied by the Basin Plan's use of 10 TUc as a monitoring trigger for chronic toxicity for deep water dischargers; deep water dischargers have dilution of 10:1 or greater. Using this approach for the LGVSD permit, combined with an assumed water quality objective of 1.0 TUc (actual WQO to be established per Water Code Section 13241) and a MDEL/AMEL multiplier of 2.0 results in an AMEL of 3.25 TUc and an MDEL of 6.5 TUc.

5. **Toxicity testing measures an effect, rather than a toxicant, and is inherently variable. Dischargers should be given the opportunity to investigate results and invalidate a spurious toxicity test result when identified.**

Toxicity testing measures a biological response, rather than directly measuring the presence of a toxicant. While biological inhibition may occur in response to a toxicant, it can also occur due to problems with the organisms' food or with the health of the organisms themselves. Other factors such as pathogens can influence organisms' response during toxicity testing. As such, measurements of toxic effect are inherently variable and subject to noise at low levels.

In Region 2, shallow water dischargers' chronic toxicity triggers do not account for dilution. Because of the lower validity of WET data when measured at low levels, over the past five years, several dischargers have exceeded their triggers and were required to conduct toxicity reduction

evaluations (TRE) (see Attachment 1). Of the six shallow water dischargers who have conducted TREs in the past five years, only one has identified a probable toxicant. The other TREs were either inconclusive or showed pathogen interference was the cause of the observed toxic effect. The total cost of these efforts has been upwards of $1.3 million for this five year period.

Between August 2009 and May 2010, San Jose/Santa Clara Regional Wastewater Facility sent fifteen split samples to different labs for chronic toxicity testing (see Attachment 2). In four of these fifteen occasions, the results from the two labs were sufficiently different that one of the results would have contributed to a trigger exceedance and the other would not. In two cases, one lab showed relatively high levels of toxic effect (>5 TUc) while the other showed none (<1 TUc). They also found that when some of their effluent samples that showed toxic effect upon initial testing were later retested, the toxic effect had disappeared.

This experiment demonstrates the inherent variability of chronic toxicity testing, as well as the measured toxic effects are transient or not persistent. The results illustrate the need for a minimum detection limit for toxicity testing, as well as the development of quality assurance/quality control (QA/QC) procedures for invalidating the results of a given toxicity test when warranted.

Another approach to avoid requiring agencies to inefficiently direct resources investigating low level, nonpersistent toxic effect is to give dischargers appropriately sized mixing zones. Mixing zones are justifiable for both deep water dischargers and shallow water dischargers like LGVSD, since there has been no evidence that toxic effects detected in dischargers' effluent has an impact on surface waters. The San Francisco Bay receiving water has been shown by the SWAMP and RMP to be non-toxic, with exceptions where waters are impacted by pesticide runoff[2,3] from land. No receiving water toxicity has been attributed to POTW discharges. A secondary mixing zone can be defined to increase agencies' dilution credit, where they have not observed acute toxicity.

BACWA RECOMMENDATION: Toxic effect as measured by WET testing is highly variable and often nonpersistent. Toxicity has not been observed in the receiving waters of the San Francisco Bay. To avoid spurious findings of toxicity and the resulting violations, dischargers should also be given the opportunity to invalidate findings of toxicity if the test results do not meet robust QA/QC standards. Numeric effluent limits should be developed using the maximum feasible mixing zone. A Toxicity Watershed Permit could establish standards for WET monitoring in the Bay, thresholds for conducting effective TIE/TRE in response to validated WET monitoring results, and appropriate numeric chronic toxicity effluent limits.

6. **Chronic toxicity testing is more conservative than acute testing, so dischargers should have the opportunity to have their acute toxicity limits and monitoring requirements removed.**

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[2] Toxicity in San Francisco Bay Waters, 2012 SWAMP Report, found at http://www.swrcb.ca.gov/water_issues/programs/swamp/docs/reglrpts/rb2_toxicity_2012.pdf

[3] TOXICITY TESTING: Ten Years of Testing for the Effects of Estuary Contamination, 2003 Pulse of the Estuary, pg. 27, found at http://www.sfei.org/sites/default/files/rmp/pulse/2003/pulse2003.pdf

Currently, all dischargers in the San Francisco Bay Region have acute toxicity numeric limits and monitoring requirements. Chronic toxicity endpoints are more sensitive than acute toxicity endpoints (i.e., an organisms will fail to grow, germinate, etc., at lower levels of a toxicant than are lethal). Therefore, it is unnecessary to have both chronic and acute toxicity numeric limits and monitoring requirements.

BACWA RECOMMENDATION: Dischargers who are given numeric chronic toxicity limits should be given the opportunity to do a reasonable potential analysis for acute toxicity, and to drop their acute toxicity limits and monitoring requirements if no reasonable potential is found.

BACWA would be happy to meet with Regional Water board staff to discuss ways to implement these recommendations.

Respectfully,

David R. Williams

David R. Williams
BACWA Executive Director

CC:

Mr. Bruce Wolfe, Regional Water Board
Mr. Thomas Mumley, Regional Water Board
Ms. Lila Tang, Regional Water Board
Mr. William Johnson, Regional Water Board
Mr. Ray Goebel, Las Gallinas Sanitary District
BACWA Executive Board
Ms. Meg Herston, BACWA Permits Committee Chair

ATTACHMENT 1

Summary of Chronic Toxicity Testing by Region 2 Shallow Dischargers

Discharger	Timeframe	Number of Samples	Number between 1 and 2 Tuc	Percentage between 1 and 2 Tuc	Number ≥ 2 Tuc	Percentage ≥ 2 Tuc	TRE Notes (see sheets for details)
Palo Alto	June 2009 - December 2014	72	5	7%	10	14%	TRE Feb-Jul 2012, concluded cause was pathogen interference. Cost approximately **$100K**.
San Jose	July 2009 - December 2014	101	10	10%	12	12%	TRE/TIEs Oct 2009 - June 2010, and June 2013- August 2014, both inconclusive. Total cost above **$250K**.
Sunnyvale	January 2010 - December 2014	85	4 (survival) 14 (Growth)	5% (survival) 16% (growth)	2 (survival) 12 (Growth)	2% (survival) 14% (growth)	Three successive TREs, all inconclusive - ammonia, unidentified organic and polymer, respectively, were suspected. Total cost approximately **$750K**.
Novato	October 2010 - October 2014	25	2	8%	13	52%	TRE Feb 2011 - May 2012, found pathogen interference. Total cost approximately **$100K.**
Sonoma	March 2006 - January 2015	53	6	11%	9	17%	Ongoing TIE indicates that zinc may be toxicant. Total cost **$73K.**
Petaluma	December 2011 - November 2014	10	0	0%	0	0%	N/A
Fairfield Suisun	July 2009 - October 2014	22	0	0%	0	0%	N/A
Las Gallinas	April 2009 - December 2014	32	19 (survival) 20 (Growth)	59% (survival) 62% (growth)	1 (survival) 2 (Growth)	3% (survival) 6% (growth)	TIE work since 2011 is inconclusive, but pyrethroids are suspected. Total cost approximately **$50K**.

Notes: Napa data not tabulated in CIWQS, Yountville and St. Helena have no chronic toxicity testing requirements

ATTACHMENT 2

San Jose-Santa Clara Regional Wastewater Facility

Chronic Toxicity Test Results 2009-Dec 2014 **Test Species: *Ceriodaphnia dubia (May 2009- October 2014 Permit)***

Start Date	NOEC (Survival)	TUc (Reproduction)	NOEC % (Reproduction)	EC or IC 25 (Reproduction)	TST (Reproduction)
7/18/09	100%	33.5	<32% effluent	2.99% effluent	Fail 67.7%
8/1/09	100%	<1	100% effluent	>100% effluent	Pass
8/17/2009 (TSI)	100%	1.17	100% effluent	85.4% effluent	Fail 25%
8/19/2009 (PERL)	100%	2.49	56% effluent	40.2% effluent	Fail 36%
9/14/2009 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
9/15/2009 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
10/4/2009 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
10/4/2009 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
11/7/2009 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
11/28/2009 (TSI)	100%	<1	100% effluent	>100% effluent	Pass
11/29/2009 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
12/18/2009 (ESD)	100%	5.78	<32% effluent	17.3% effluent	Fail 41.9%
12/20/2009 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
1/9/2010 (TSI)	100%	<1	100% effluent	>100% effluent	Pass
1/10/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
1/20/2010 (TSI)	100%	<1	100% effluent	>100% effluent	Pass
1/21/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
1/30/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
1/31/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
2/8/2010 (AS)	75%	5.2	<32% effluent	19.1% effluent	Fail 75.5%
2/8/2010 (ESD)	100%	8.5	<32% effluent	11.8% effluent	Fail 40.3%
2/26/2010 (AS)	100%	<1*	100% effluent	>100% effluent	Pass
2/27/2010 (ESD)	100%	7.5	<32% effluent	13.3% effluent	Fail 70.7%
3/13/2010 (AS)	100%	<1	100% effluent	>100% effluent	Pass
3/13/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
3/27/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
3/28/2010 (AS)	100%	<1	100% effluent	>100% effluent	Pass
4/17/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Fail 16.9%
4/17/2010 (AS)	100%	No Result**	NA	NA	NA

October 2009-June 2010: SJSC conducted TRE/TIE investigations. TIE costs estimated ~ $200,000 - 250,000. Toxicity Identification Evaluation (TIE) manipulations were performed on samples from two confirmed toxic events in February with support from Aqua-Science Laboratories in Davis, CA. The TIE studies could only confirm that toxicity was present, was only slightly ameliorated by EDTA (not a metal or only slight effect from a metal), was more ameliorated by Solid Phase Extraction (SPE) columns (likely organic), was substantially ameliorated by Organophosphate (OP) enzyme and piperonyl butoxide (PBO) (indicating possibility of an OP pesticide or some organic compound that behaves similarly), was exacerbated by filtration (not particle-bound) and was exacerbated by sodium thiosulfate (STS) (not an oxidizer). Unfortunately, attempts to elute and recover the toxicity captured on SPE columns were unsuccessful. For this reason, the TIE investigations were of limited value.

Start Date	NOEC (Survival)	TUc (Reproduction)	NOEC % (Reproduction)	EC or IC 25 (Reproduction)	TST (Reproduction)
5/1/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
5/2/2010 (AS)	100%	1.8	42% effluent	55.6% effluent	Fail 24%
5/2/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
5/21/2010 (ESD)	100%	<1	100% effluent	>100% effluent	Pass
5/21/2010 (PERL)	100%	<1	100% effluent	>100% effluent	Pass
6/14/10	100%	<1	100% effluent	>100% effluent	Pass
6/26/10	100%	<1	100% effluent	>100% effluent	Pass
7/17/10	100%	<1	100% effluent	>100% effluent	Pass
8/13/10	100%	<1	100% effluent	>100% effluent	Pass
9/19/10	100%	10.4	6.25% effluent	9.63% effluent	Fail 84.8%
10/4/10	100%	<1	100% effluent	>100% effluent	Pass
10/24/10	100%	<1	100% effluent	>100% effluent	Pass
11/13/10	100%	<1	100% effluent	>100% effluent	Pass
12/11/10	100%	No Result**	100% effluent	>100% effluent	Pass
12/19/2010 (TSI)	100%	<1	100% effluent	>100% effluent	Pass
1/10/11	100%	<1	100% effluent	>100% effluent	Pass
2/21/11	100%	<1	100% effluent	>100% effluent	Pass
3/7/11	100%	<1	100% effluent	>100% effluent	Pass
4/21/11	100%	<1	100% effluent	>100% effluent	Pass
5/10/11	100%	5.46	25% effluent	18.3% effluent	Fail 51.8%
6/9/11	100%	<1	100% effluent	>100% effluent	Pass
6/21/11	100%	1.4	50% effluent	71% effluent	Fail 34.6%
7/23/11	100%	<1	100% effluent	>100% effluent	Pass
8/8/11	100%	<1	100% effluent	>100% effluent	Pass
8/22/11	100%	1.7	25% effluent	58.9% effluent	Fail 62.9%
9/13/11	100%	<1	100% effluent	>100% effluent	Pass
10/3/11	100%	<1	100% effluent	>100% effluent	Pass
11/2/11	100%	<1	100% effluent	>100% effluent	Pass
12/5/11	100%	<1	100% effluent	>100% effluent	Pass
1/10/12	100%	1.6	50% effluent	61.7% effluent	Fail 40.8%
2/6/12	100%	<1	100% effluent	>100% effluent	Pass
3/5/12	100%	<1	100% effluent	>100% effluent	Pass

Start Date	NOEC (Survival)	TUc (Reproduction)	NOEC % (Reproduction)	EC or IC 25 (Reproduction)	TST (Reproduction)
4/16/12	100%	<1	100% effluent	>100% effluent	Pass
5/7/12	100%	<1	100% effluent	>100% effluent	Pass
6/11/12	100%	<1	100% effluent	>100% effluent	Pass
7/16/12	100%	<1	100% effluent	>100% effluent	Pass
8/13/12	100%	<1	100% effluent	>100% effluent	Pass
9/11/12	100%	<1	100% effluent	>100% effluent	Pass
10/16/12	100%	4.1	12.5% effluent	24.5% effluent	Fail 24.5%
11/2/12	100%	<1	100% effluent	>100% effluent	Pass
11/8/12	100%	<1	100% effluent	>100% effluent	Pass
12/3/12	100%	<1	100% effluent	>100% effluent	Pass
1/19/13	100%	1.7	25% effluent	58.1% effluent	Fail 63.3%
2/4/13	100%	<1	100% effluent	>100% effluent	Pass
3/4/13	100%	10.1	6.25% effluent	9.88% effluent	Fail 44.2%
4/2/13	100%	<1	100% effluent	>100% effluent	Pass
4/12/13	100%	1.2	100% effluent	84.5% effluent	Fail 27%
5/6/13	100%	2.3	50 % effluent	42.7% effluent	Fail 67.6%
6/10/13	100%	<1	100% effluent	>100% effluent	Pass
7/12/13	100%	<1	100% effluent	>100% effluent	Pass
8/1/13	100%	1.1	50% effluent	90.7% effluent	Fail 27.1%
8/5/13	100%	<1	100% effluent	>100% effluent	Pass
9/12/13	100%	2.9	25% effluent	34.6% effluent	Fail
10/4/13	100%	<1	100% effluent	>100% effluent	Pass
11/19/13	100%	1.2	50% effluent	86.1% effluent	Fail
12/9/13	100%	<1	100% effluent	>100% effluent	Pass
1/10/14	100%	<1	100% effluent	>100% effluent	Pass
2/3/14	100%	1.6	100% effluent	>100% effluent	Fail
3/3/14	100%	<1	100% effluent	>100% effluent	Pass
4/8/14	100%	<1	100% effluent	>100% effluent	Pass
5/5/14	100%	<1	100% effluent	>100% effluent	Pass
6/9/14	100%	<1	100% effluent	>100% effluent	Pass
7/14/14	100%	<1	100% effluent	>100% effluent	Pass
8/11/14	100%	<1	100% effluent	>100% effluent	Pass

June 2013-August 2014: TRE/TIE initiated in response to permit triggers being exceeded. TIE studies were unsuccessful in confirming toxicity or identifying potential toxicants. The frequency and magnitude of the observed paralysis (a sub-chronic effect) in RWF effluent have also declined.

Start Date	NOEC (Survival)	TUc (Reproduction)	NOEC % (Reproduction)	EC or IC 25 (Reproduction)	TST (Reproduction)
9/12/14	100%	<1	100% effluent	>100% effluent	Pass
10/3/14	100%	<1	100% effluent	>100% effluent	Pass
11/3/14	100%	<1	100% effluent	>100% effluent	Pass
12/8/14	100%	<1	100% effluent	>100% effluent	Pass

Note: SJSC uses a TRE/TIE trigger of 2 TUc calculated as 100/EC50 or IC50 or three sample median of >1 as recommended in the 2009 TRE Workplan submitted to Regional Water Board

* <1 - This result was rejected due to an anomolous dose response inversion.

** Test Failed Quality Control

CALIFORNIA ASSOCIATION of SANITATION AGENCIES

1225 8th Street, Suite 595• Sacramento, CA 95814 • TEL: (916) 446-0388 • www.casaweb.org

March 9, 2015

Sent via email to mliao@waterboards.ca.gov

Marcia Liao
Water Resources Control Engineer
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, 14th Floor
Oakland, CA 94612

Subject: **Comment Letter – Tentative Order for Las Gallinas Valley Sanitary District Sewage Treatment Plant (LGVSD) (NPDES No. CA0037851)**

Dear Ms. Liao:

The California Association of Sanitation Agencies (CASA) appreciates the opportunity to comment on the Tentative Order for reissuance of the Las Gallinas Valley Sanitary District Sewage Treatment Plant (LGVSD) NPDES Permit. CASA is a statewide association representing more than 100 municipalities, special districts, and joint powers agencies that provide wastewater collection, treatment, clean energy and water recycling services to millions of Californians. Our association does not routinely comment on matters within individual regions, except in circumstances such as this, where the proposed regional action could have significant statewide implications.

Our comments relate to the proposed effluent limitations and other provisions related to toxicity. To the extent that the terms being incorporated into this individual NPDES permit could affect how other regions approach toxicity, and could impact the promulgation of a forthcoming statewide plan or policy governing toxicity, all of CASA's members statewide have a significant interest the development and implementation of this permit. CASA has reviewed the comments of the Bay Area Clean Water Agencies (BACWA), and concurs with the technical points BACWA has raised. We also request that the Regional Water Board decline to adopt the proposed toxicity provisions which are precedential, premature and potentially in conflict with the Statewide Plan for Toxicity Assessment and Control currently under development by the State Water Board.

Adoption of a permit that contains numeric effluent limits for toxicity in advance of the promulgation of the statewide plan on this issue is inappropriate and premature. The State Water Board has been working with stakeholders, U.S. EPA and regional water boards to develop revised toxicity provisions for inclusion in a statewide water quality control plan through a public process, and release of a revised draft is expected soon for public comment. An appropriate statewide plan will replace the current patchwork of regional water board practices with a consistent and standardized approach to toxicity. Adoption of numeric effluent limits for toxicity in an individual Regional Water Board permit interferes with a significant amount of work being done at the state level.

CASA requests that the chronic toxicity limits contained in the tentative permit be removed and replaced with a narrative chronic toxicity limit and triggers, at least until such time as there is a comprehensive statewide toxicity plan to govern those terms.

We appreciate the opportunity to provide comments on the tentative permit, and feel free to contact me at alink@casaweb.org or (916) 446-0388 if you have any additional questions or concerns.

Sincerely,

Adam D. Link
CASA Director of Government Affairs

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Certified Mail No. 7003 2260 0007 5460 1027
Return Receipt Requested

March 5, 2015

Bruce H. Wolfe, Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Re: U.S. EPA comments on draft NPDES permit for Las Gallinas Valley Sanitary District Sewage Treatment Plant (NPDES No. CA0037851)

Dear Mr. Wolfe:

Thank you for the opportunity to review and comment on the draft NPDES permit for the discharge from Las Gallinas Valley Sanitary District sewage treatment plant. We support the permit as currently proposed and its prompt adoption. EPA previously reviewed the pre-notice draft permit for this plant in January 2015. EPA agrees with San Francisco Bay Regional Water Board (Regional Water Board) staff that discharges from the facility exhibit the reasonable potential to exceed the narrative water quality standard for chronic toxicity in the San Francisco Bay Region Basin Plan and that water quality based effluent limits (WQBELs) are required under 40 CFR 122.44(d)(1)(i) and (v). However, EPA was concerned that the pre-notice draft permit did not meet Clean Water Act (CWA) statutory and regulatory requirements because the pre-notice permit contained only a "trigger" for further investigation related to chronic toxicity, rather than an actual WQBEL. Based on CWA section 401(d)(2), 40 CFR 123.44, and the 1989 NPDES Memorandum of Agreement (MOA), EPA initially objected to the pre-notice draft permit on January 15, 2015 (Attachment 1).

On February 5, 2015, EPA received a revised public notice draft permit for the plant. Based on a review of changes made to the permit, EPA finds that the Regional Water Board has changed the permit to eliminate the bases of the initial permit objection. This revised permit is the subject of our comments, below.

EPA is pleased that the subject draft permit clearly requires actual effluent limits on chronic whole effluent toxicity (WET), where there is reasonable potential (see Order section IV. A, Table 4, p. 5; Attachment F section IV.C.3.e, pp. F-26 – F-27). EPA agrees with the Regional Water Board's decision to use numeric chronic WET WQBELs for this POTW permit, which are

feasible to calculate for this discharge. As a result, the permit meets the requirements of CWA sections 301(b)(1)(C) and 502(11) and 40 CFR 122.44(d)(1)(i) and (v). Moreover, EPA supports inclusion of both monthly (multiple toxicity test results) and daily (single toxicity test result) WQBELs for toxicity in this permit, based on the reasonable potential analysis provided in the Fact Sheet section referenced above.

We want to underscore the fact that the draft permit clearly identifies the WET statistical approach chosen by the Regional Water Board to measure chronic toxicity for compliance (i.e., EC25). The draft permit connects this choice to the expression of both the chronic WET WQBELs and effluent monitoring and reporting requirements, as well as the applicable narrative water quality standard for chronic toxicity in the Basin Plan. Consequently, the NPDES permit contains transparent, clear, and enforceable requirements for chronic WET.

We note that the permit proposes chronic toxicity WQBELs based on a reasonable potential finding using recent chronic WET data, but that WQBELs for acute toxicity may not be required if there was no finding of reasonable potential for acute toxicity during the previous permit term. Also, we note that the monitoring and reporting program's thresholds (i.e., 1 chronic toxic unit (TUc) and 2 TUc) for accelerated effluent monitoring and Toxicity Reduction Evaluations (TREs) have been carried over from the previous permit into this permit. Because chronic WET at these effect levels in the effluent is well studied under the current permit and the Regional Water Board has proposed a mixing zone for protective chronic WET WQBELs set at higher magnitudes (i.e., WQBELs of 2.7 TUc and 5.3 TUc), we support using the proposed chronic WET WQBELs as the appropriate thresholds for accelerated monitoring and TREs.

If you have questions regarding these comments on the public notice draft permit or our initial objection to the pre-notice draft permit, please call David Smith at (415) 972-3464.

Sincerely,

Jane Diamond, Director
Water Division

cc: Mark Williams, General Manager—Las Gallinas Valley Sanitary District

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Certified Mail No. 7008 1830 0002 6279 3512
Return Receipt Requested

January 15, 2015

Bruce H. Wolfe, Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Re: Pre-notice draft permit initial objection letter—NPDES permit for Las Gallinas Valley Sanitary District Sewage Treatment Plant (NPDES No. CA0037851)

Dear Mr. Wolfe:

Thank you for the opportunity to review and comment on the pre-notice draft NPDES permit for discharges from the Las Gallinas Valley Sanitary District sewage treatment plant. We initially received the Las Gallinas pre-notice draft permit for review from Marcia Liao of your staff via email on November 26, 2014. On December 18, 2014, Robyn Stuber of my staff confirmed via email and telephone call to Bill Johnson of your staff that the San Francisco Bay Regional Water Quality Control Board (S.F. Bay Regional Water Board) agreed to an extension of time for the U.S. EPA to comment on the pre-notice draft permit until January 16, 2015.

Based on whole effluent toxicity (WET) data provided by Ms. Liao on October 14, 2014, and in response to a request on December 17, 2014, the U.S. EPA believes that the discharge exhibits the reasonable potential to exceed the narrative water quality standard for chronic toxicity in the San Francisco Bay Region Basin Plan and that water quality based effluent limits (WQBELs) are required under 40 CFR 122.44(d)(1)(i) and (v).

Based on a review of the pre-notice draft permit's fact sheet and permit itself, it appears that there is no "limit" for chronic toxicity. Instead, the pre-notice draft permit only establishes a "trigger" for further study. This provision needs to be revised to ensure this permit includes effluent limitations as stringent as necessary to meet water quality standards and comply with NPDES requirements. While the permit includes clear numeric effluent limits for chemical-specific pollutants and acute WET necessary to meet Clean Water Act (CWA) requirements, the permit does not appear to have a WQBEL for chronic WET, but only a trigger. Importantly, there is no explanation as to why a numeric WQBEL would be infeasible to calculate. We are concerned that chronic WET is treated differently than chemical-specific pollutants and acute WET in a way that is inconsistent with NPDES regulations. Accordingly, pursuant to 40 CFR

123.44 and the 1989 EPA/State NPDES Memorandum of Agreement (MOA), we reserve the right to object to issuance of this permit, if these concerns described below are not addressed.

A. This permit must include a WQBEL for chronic toxicity: "triggers" for further investigation are not WQBELs.

In 1989, EPA promulgated regulations at 40 CFR 122.44(d)(1) implementing CWA section 301(b)(1)(C) to administer the development and implementation of WQBELs for both narrative and numeric water quality criteria. Under the regulations, WQBELs must control all pollutants, as well as WET, that will be discharged at a level that causes, has the reasonable potential to cause, or contributes to an excursion above any State water quality standard. CWA section 502(11) defines "effluent limitation" as "any restriction established by the State or Administrator on quantities, rates, and concentrations of chemical, physical, biological, or other constituents which are discharged from point sources into navigable waters." NPDES permits must contain "effluent limitations" for WET where reasonable potential has been demonstrated for excursion above a narrative criterion. 40 CFR 122.44(d)(1)(v).

Here, the draft permit appears to describe a narrative limit for "levels" of chronic WET. However, this provision is linked to a monitoring provision that essentially converts it into a trigger, as the only levels identified in permit are called "triggers." The provisions of the permit at issue are:

Order, section IV.D: Whole Effluent Chronic Toxicity

> Discharges at Discharge Point Nos. 001 and 002 shall not contain chronic toxicity at levels that would cause or contribute to toxicity in the receiving water. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, or any other relevant measure of the health of an organism population or community. Compliance with this limit shall be determined by analysis of indicator organisms and toxicity tests conducted on samples from Monitoring Location EFF-001 as described in the MRP.

Attachment E, section V.B.1.c.ii-v: Whole Effluent Chronic Toxicity, Monitoring Requirements, Frequency

> ii. The Discharger shall accelerate [quarterly] monitoring to monthly after either exceeding a three-sample median of 1 TUc or a single-sample maximum of 2 TUc. Based on the TUc results, the Executive Officer may specify a different frequency for accelerated monitoring to ensure that accelerated monitoring provides useful information.
>
> iii. The Discharger shall return to routine monitoring if accelerated monitoring does not exceed either trigger in ii, above.

iv. If accelerated monitoring confirms consistent toxicity in excess of either trigger in ii, above, the Discharger shall continue accelerated monitoring and initiate toxicity reduction evaluation (TRE) procedures in accordance with section V.B.3, below.

v. The Discharger shall return to routine monitoring after implementing appropriate elements of the TRE, and either the toxicity drops below both triggers in ii, above, or, based on the TRE results, the Executive Officer determines that accelerated monitoring would no longer provide useful information.

While it may appear that section V.B.1.c.ii establishes a numeric "limit," sections V.B.1.c.iii-v describe the monitoring results as only activating a "trigger" for more frequent monitoring. Thus, these monitoring provisions render the narrative limit into a trigger. Such "triggers" do not meet the definition of "effluent limitation" under the CWA, as they do not restrict the "quantity, rate, or concentration" of pollutants in the effluent. CWA section 502(11). They simply require further investigation.

B. The reasonable potential analysis for chronic toxicity is inadequate.

Under 40 CFR 122.44(d)(1)(v), the permitting authority must conduct a reasonable potential (RP) analysis to determine the need for any chronic WET limit, either narrative or numeric. The RP analysis is generally provided with the fact sheet and includes information about discharge data and compliance history of the discharger.

Based on the toxicity data provided by the S.F. Bay Regional Water Board, the discharged chronic toxicity at this facility is often >1 TUc. Further, the fact sheet states: "Throughout most of the previous order term, the Discharger regularly observed some chronic toxicity, but typically at low levels.... Nevertheless, 21 out of the 27 tests found chronic toxicity greater than 1 TUc."

The RP analysis is inadequate because, despite acknowledging consistent exceedances of the 1 TUc "trigger," the fact sheet nonetheless concludes: "Given that the chronic toxicity observed has been relatively low ... the reasonable potential for the discharge to cause chronic toxicity in the receiving water is considered low. Therefore, this Order contains only a narrative chronic toxicity limit. A numeric limit is unwarranted."

This analysis is inadequate for several reasons. First, either there is or there is not RP that warrants a limit. The regulations do not describe a range of options from low to high. Second, it appears that with many exceedances of the "trigger," reasonable potential is established and a limit, whether narrative or numeric, is required. 40 CFR 122.44(d)(1)(v). Third, given that the analysis uses 1 TUc or 2 TUc to assess chronic toxicity for monitoring purposes, it appears that a numeric limit is entirely warranted and feasible. Fourth, as explained in section A above, the narrative limit in this permit is eviscerated by the monitoring provisions that call only for triggers. Thus, the suggestion that the permit contains a valid narrative limit is incorrect.

C. WQBELs must be as stringent as necessary to meet water quality standards, including numeric WQBELs as needed.

Even if the draft permit contained a valid narrative WQBEL for chronic WET, the S.F. Bay Regional Water Board has failed to justify how such a narrative requirement would achieve water quality standards and why a numeric WQBEL is not feasible. It would appear that the monitoring provisions contain a potentially feasible and enforceable limit, i.e., "three-sample median of 1 TUc or a single-sample maximum of 2 TUc."

The S.F. Bay Regional Water Board may be following State Water Resources Control Board (State Water Board) Water Quality Order (WQO) 2003-0012, which does not provide for the use of numeric effluent limits for chronic toxicity, nor for any chemical causing toxicity. As we have previously discussed with the State Water Board, WQO 2003-0012 misinterprets 40 CFR 122.44(k)(3), which provides that effluent limits may be other than numeric (such as narrative) if numeric limits are infeasible.

To comply with the CWA, the S.F. Bay Regional Water Board must ensure that the WQBEL for chronic WET will be as stringent as necessary to meet water quality standards under CWA section 301(b)(1)(C) and 40 CFR 122.44(d)(1). This entails showing why a narrative limit is as stringent as necessary for the discharge to protect water quality and why a numeric WQBEL is not feasible.

For this permit, the S.F. Bay Regional Water Board has not provided any explanation as to why it would be infeasible to calculate numeric WET limits for chronic toxicity. By contrast, the permit contains numeric WET limits for acute toxicity. Recently, the Los Angeles Regional Water Board adopted and issued permits for four POTW permits in the Calleguas Creek watershed and two POTW permits in the San Gabriel River watershed which express chronic toxicity WQBELs numerically. Additionally, chronic toxicity WQBELs in NPDES permits for POTWs issued in California that are not governed by WQO 2003-0012 are expressed numerically. Here, along with further fact sheet explanation of authorized mixing, the permit could require "three-sample median of 1 TUc or a single-sample maximum of 2 TUc" as numeric limits, for a monthly monitoring period. This would clarify permit chronic toxicity compliance requirements for everyone.

D. POTW effluent limits for toxicity must meet 40 CFR 122.45(d) and act as WET WQBELs that meet water quality standards for aquatic life protection under 40 CFR 122.44(d)(1)(i).

The permit contains no determination under 40 CFR 122.45(d) regarding the duration of the WQBEL for chronic WET. It should specify a daily, weekly, or monthly duration. As a result, the permit does not meet 40 CFR 122.45(d), or 40 CFR 122.44(d)(1)(i), which requires limits based on the RP analysis. The permit can address this concern by incorporating quantitative/numeric daily and monthly WQBELs for chronic toxicity and toxic chemicals.

Following our 1989 NPDES MOA, EPA's initial objection shall delay this permit's public notice pending action under MOA section II.C.4.a, until the draft permit is modified to

address the issues raised in this letter. If you have questions regarding our initial objection to the subject pre-notice draft permit, please call me, David Smith at (415) 972-3464, or Robyn Stuber at (415) 972-3524. We look forward to the expeditious resolution of our concerns regarding this permit.

Sincerely,

for Jane Diamond, Director
Water Division

cc: Tom Howard, Executive Officer—California State Water Resources Control Board

Mark Williams, General Manager—Las Gallinas Valley Sanitary District

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESPONSE TO WRITTEN COMMENTS

on Tentative Order for
Las Gallinas Valley Sanitary District Sewage Treatment Plant and Wastewater Collection System
San Rafael, Marin County

The Regional Water Board received written comments on a tentative order distributed for public comment on March 9, 2015, from the following:

1. Las Gallinas Valley Sanitary District
2. Bay Area Clean Water Agencies
3. California Association of Sanitation Agencies
4. U.S. Environmental Protection Agency.

Regional Water Board staff has summarized the comments shown below in *italics* (paraphrased for brevity) and followed each comment with staff's response. For the full content and context of the comments, refer to the comment letters.

All revisions to the tentative order are shown with underline text for additions and strikethrough ~~text~~ for deletions. This document also contains staff-initiated revisions.

Las Gallinas Valley Sanitary District

Las Gallinas Comment 1.a

Las Gallinas requests that the Regional Water Board defer numeric chronic toxicity water quality-based effluent limitations (WQBELs) until the State Water Board adopts a toxicity plan. *Las Gallinas believes the Regional Water Board should retain the previous approach and rely on narrative limits, with numeric triggers for accelerated monitoring and toxicity reduction evaluation (TRE). Las Gallinas contends that State Water Board Order No. WQ 2003-0012 prohibits the Regional Water Board from establishing numeric WQBELs and cites U.S. EPA correspondence accepting the previous narrative approach.*

Response to Las Gallinas Comment 1.a

We disagree. As explained in Fact Sheet section IV.C.4.a, imposing numeric chronic toxicity WQBELs is consistent with federal regulations. In accordance with 40 C.F.R. section 122.44(d)(1)(i) and (v), chronic toxicity WQBELs are required because there is reasonable potential for chronic toxicity within the discharge to cause or contribute to an exceedance of the narrative toxicity water quality objective in Basin Plan section 3.3.18:

> All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. …
>
> There shall be no chronic toxicity in ambient waters. …

Numeric WQBELs are necessary and appropriate because, as explained in the Fact Sheet, the chemical-specific WQBELs and narrative chronic toxicity WQBEL in the previous order were insufficient to attain and maintain the narrative chronic toxicity water quality objective, as evidenced by the regularly observed chronic toxicity in the discharge during the previous order term and described in the reasonable potential analysis. Numeric WQBELs are consistent with the intent of the federal regulations requiring whole effluent toxicity effluent limitations at 40 C.F.R. section 122.44(d). As set forth in the preamble to these regulations, "A limit on whole effluent toxicity refers to a numeric effluent limitation expressed in terms such as toxic units, no observed effect level (NOEL), LC_{50}, or percent mortality." (54 Fed. Reg. 23871, emphasis added).

In State Water Board Order No. WQ 2003-0012, the State Water Board declined to determine the propriety of final numeric effluent limitations for chronic toxicity in the permits under review but stated its intent to establish a policy to address chronic toxicity. At the time, the State Water Board expected to modify the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) within one year. In the interim, it allowed reliance on narrative chronic toxicity WQBELs provided that permits also contain (1) numeric benchmarks for triggering accelerated monitoring, (2) rigorous TRE conditions, and (3) a reopener to establish numeric effluent limitations for either chronic toxicity or any chemicals causing toxicity. U.S. EPA's acceptance of the narrative approach, as expressed in its letter to the State Water Board dated August 27, 2003, hinged upon the State Water Board's commitment to expeditiously update the SIP and provide guidance on how to implement chronic toxicity objectives in NPDES permits. Numeric WQBELs are now warranted because, twelve years later, the State Water Board has not established a statewide chronic toxicity policy, and discharges that do not ensure compliance with the narrative toxicity water quality objective continue. U.S. EPA, through its pre-notice objection letter to the Regional Water Board dated January 16, 2015, has also withdrawn its support for narrative chronic toxicity WQBELs. Based on what has and has not occurred since 2003, numeric chronic toxicity WQBELs are necessary and appropriate at this time.

Las Gallinas Comment 1.b

If the Regional Water Board retains numeric chronic toxicity WQBELs, Las Gallinas requests that the triggers for accelerated monitoring and TREs be removed or revised to match the numeric WQBELs*. Las Gallinas notes that chemical-specific WQBELs are not accompanied by lower triggers for corrective actions. It also points out that accelerated monitoring and TREs are costly and rarely fruitful. Since pyrethroids have been identified as the cause of Las Gallinas's toxicity, and since Las Gallinas has taken reasonable actions to minimize pyrethroids in its discharge, Las Gallinas requests that the Regional Water Board allow it to use a test species less sensitive to pyrethroids.*

Response to Las Gallinas Comment 1.b

We disagree in part. Basin Plan section 4.5.5.3.2 and Table 4-5 specify chronic toxicity triggers for accelerated monitoring and TREs. Nevertheless, we recognize Las Gallinas's ongoing work to reduce pyrethroids. Additional accelerated monitoring that only shows pyrethroid toxicity will not enhance Las Gallinas's efforts to reduce pyrethroids. Therefore, we revised Monitoring and Reporting Program section V.B.1.c as follows:

> **Frequency.** Chronic toxicity monitoring shall be as specified below:
>
> **i.** The Discharger shall monitor routinely once per quarter.
>
> **ii.** The Discharger shall conduct a toxicity identification evaluation (TIE) when there is an exceedance of the chronic toxicity limitation.

iii. The Discharger shall accelerate monitoring to monthly <u>if the TIE indicates that a pollutant or pollutants other than pyrethroids causes or contributes to the toxicity and routine monitoring exceeds</u> ~~after~~ either ~~exceeding~~ a three-sample median of 1 chronic toxicity unit (TU_c) or a single-sample maximum of 2 TU_c. Based on the TU_c results, the Executive Officer may specify a different frequency for accelerated monitoring to ensure that accelerated monitoring provides useful information.

We revised Fact Sheet VII.A.3 as follows:

> **Whole Effluent Toxicity Testing.** Acute and chronic whole effluent toxicity tests are necessary to evaluate compliance with the acute and chronic toxicity effluent limitations. Chronic toxicity tests are also necessary to evaluate whether chronic toxicity triggers the need for accelerated monitoring and a Toxicity Reduction Evaluation. The accelerated monitoring triggers are based on Basin Plan Table 4-5<u>, except that accelerated monitoring is not triggered if future monitoring continues to show that toxicity is due only to pyrethroids because such accelerated monitoring would not provide useful information regarding the Discharger's ongoing efforts to reduce pyrethroids</u>.

On the issue of using a less sensitive species for routine monitoring, we disagree that Las Gallinas should be allowed to use a toxicity test species less sensitive to pyrethroids. Testing with the most sensitive organism is necessary to ensure that toxicity testing captures the full extent of any possible toxicity. Using a species sensitive to pyrethroids also allows Las Gallinas to assess the success of its efforts to minimize pyrethroids in its discharge.

<u>Las Gallinas Comment 2.a</u>

Las Gallinas objects to a sentence that could suggest that it has not taken proactive measures to address chronic toxicity. *Las Gallinas points out that since 2011 it has diligently investigated potential pyrethroid sources and proactively undertaken efforts to address these pesticides over which it has little or no control. It points out that numeric WQBELs impose potential liabilities for circumstances it cannot remedy.*

<u>Response to Las Gallinas Comment 2.a</u>

We agree and revised Fact Sheet section IV.C.4.a as follows:

> **Need for Numeric Chronic Toxicity WQBELs.** This Order contains numeric WQBELs for chronic toxicity. … Numeric toxicity WQBELs are an efficient and effective regulatory tool because the measurement of compliance is clearly defined. ~~Numeric WQBELs will further prompt the Discharger to take proactive measures to comply with the limitations and address toxicity in advance of violations that may affect aquatic life.~~

<u>Las Gallinas Comment 2.b</u>

Before imposing numeric chronic toxicity WQBELs, Las Gallinas recommends that the Regional Water Board collaborate with Bay Area Clean Water Agencies and other stakeholders to develop a method for determining when numeric WQBELs are necessary. *Las Gallinas contends that this tentative order relies on an unspecified "presumptive" methodology.*

<u>Response to Las Gallinas Comment 2.b</u>

We disagree. The reasonable potential analysis presented in the tentative order is not "presumptive." It is based on available data, which indicate that the effluent was toxic (i.e., contained more than 1.0 chronic

toxicity unit [TU_c]) 21 out of the 27 times it was tested, with one test result being 8 TU_c. Based on these effluent data, there is no basis for any conclusion other than that there is reasonable potential for the discharge to cause or contribute to an exceedance of the narrative toxicity objective.

As stated in Fact Sheet section IV.C.3.e, this Order translates the narrative toxicity objective directly into a numeric criterion of 1.0 TU_c. By definition, "1.0 TU_c" means that no toxicity is observed in a test sample containing 100 percent effluent (TU_c = 100/NOEC, where NOEC is "no observed effect concentration" expressed in terms of percent effluent). Therefore, 1.0 TU_c is a direct translation of the narrative objective into a number. Moreover, in *Technical Support Document for Water Quality-based Toxics Control* (Technical Support Document or TSD) (EPA/505/2-90-001, section 3.3.3), U.S. EPA recommends that 1.0 TU_c be used as a criterion continuous concentration and states that reasonable potential is shown where an effluent is projected to cause an excursion above the criterion continuous concentration. The TSD is applicable here as guidance because it directly addresses effluent characterization for whole effluent toxicity.

We revised Fact Sheet section IV.C.3.e.i (second paragraph) as follows:

> For this Order, this narrative objective is translated into a numeric criterion of 1.0 chronic toxicity unit (TU_c). At 1.0 TU_c, there is no observable detrimental effect when the indicator organism is exposed to 100 percent effluent; therefore, 1.0 TU_c is a direct translation of the narrative objective into a number. Moreover, in the *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001) (see section 3.3.3, "Step 3: Decision Criteria for Permit Limit Development"), U.S. EPA recommends that 1.0 TU_c be used as a criterion continuous concentration ~~(Such concentrations are~~ typically ~~expressed as~~ a four-day average~~s~~). It further states that reasonable potential is shown where an effluent is projected to cause an excursion above the criterion continuous concentration. The Technical Support Document is applicable here as guidance because it directly addresses effluent characterization for whole effluent toxicity.

In addition to the straight-forward reasonable potential analysis described above, other more detailed approaches result in the same conclusion:

- Based on the reasonable potential analysis methodology in TSD section 3.3, the effluent has reasonable potential for chronic toxicity because the projected maximum toxicity expected in the effluent when discharged is 15 TU_c. Accounting for the dilution credit in the tentative order (3.25:1), the projected toxicity in the receiving water at the edge of the mixing zone is 4.5 TU_c. Both values are well above the numeric criterion of 1.0 TU_c.

- Based on the reasonable potential analysis methodology in SIP section 1.3, the effluent has reasonable potential for chronic toxicity because the maximum chronic toxicity test result was 8.0 TU_c, which is greater than the numeric criterion of 1.0 TU_c. Even accounting for dilution, there was still 2.5 TU_c at the edge of the mixing zone, which is also greater than the numeric criterion of 1.0 TU_c.

To bolster the reasonable potential analysis in the revised tentative order, we revised Fact Sheet section IV.C.3.e.ii as follows:

> **Analysis.** The previous order required quarterly chronic toxicity tests using *Mysidopsis bahia*. Throughout most of the previous order term, the Discharger regularly observed some chronic toxicity. Out of 27 chronic toxicity tests, one exceeded 2 TU_c. That result

was 8 TU_c and occurred on November 13, 2013. Twenty-one out of the 27 tests (78%) found chronic toxicity greater than 1 TU_c.

⋮

Although the Discharger has been engaging in community outreach to reduce pyrethoids in plant influent, there remains a reasonable potential for the discharge to cause chronic toxicity in the receiving water because toxicity has been observed in the discharge repeatedly in the recent past.

Using the reasonable potential analysis methodology of the Technical Support Document (described in Fact Sheet section IV.C.3.d) results in the same conclusion. The effluent has reasonable potential for chronic toxicity because the projected maximum toxicity expected in the effluent when discharged is 15 TU_c. Allowing for a mixing zone and dilution credit as described in Fact Sheet section IV.C.4.c (3.25:1), the projected toxicity in the receiving water at the edge of the mixing zone would be 4.5 TU_c. Both values are above the numeric criterion of 1.0 TU_c (Liao, M. April 15, 2015, *Chronic Toxicity Reasonable Potential Analysis Using the Technical Support Document Approach, Las Gallinas Valley Sanitary District*).

Collaborating with stakeholders to agree on a formal reasonable potential methodology is unnecessary at this time because no one has suggested an alternative methodology that could arrive at a different conclusion for this case based on the available data. Such efforts would be better directed toward collaborating with the State Water Board as it continues to develop a statewide chronic toxicity plan.

Las Gallinas Comment 2.c

Las Gallinas says it is unclear about the process used to adopt the numeric chronic toxicity WQBELs, particularly when there is no numeric water quality objective. *Las Gallinas contends that translating the Basin Plan's narrative toxicity objective into a numeric criterion amounts to adopting a water quality objective, and suggests that the Regional Water Board must therefore conduct further analysis based on Water Code section 13241.*

Response to Las Gallinas Comment 2.c

We disagree. The numeric chronic toxicity WQBELs implement the Basin Plan's narrative toxicity objective. According to 40 C.F.R. section 122.44(d)(1)(i), permits must include effluent limitations for all pollutants that are or may be discharged at levels that have a reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and *narrative* objectives within a standard. According to 40 C.F.R. section 122.44(d)(1)(vi), where there is no numeric objective, WQBELs must be established using one of the following methods:

1. U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information;

2. an indicator parameter for the pollutant of concern; or

3. a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting a narrative criterion, supplemented with relevant information.

The chronic toxicity WQBELs in the tentative order are based on the second and third options above. Toxic units (TU_c) using a specified test species are an indicator of the pollutant of concern (i.e., toxicity), and the WQBELs are derived from a calculated numeric water quality criterion based on authoritative U.S. EPA guidance. As explained above in our response to Las Gallinas Comment 2.b, we translated the Basin Plan narrative toxicity objective into a numeric criterion of 1.0 TU_c as recommended in the TSD. U.S. EPA recommends that 1.0 TU_c be used as the "criterion continuous concentration" (TSD, section 3.3.3, page 60), which generally implies a four-day average (TSD, Appendix D, page D-2).

Because the chronic toxicity WQBELs simply implement the Basin Plan's existing narrative toxicity objective as required by and in accordance with federal regulations, we are not proposing a new objective, and the provisions in Water Code section 13241 do not apply.

Las Gallinas Comment 2.d

Las Gallinas proposes a more straightforward, albeit less statistically sophisticated, approach to calculating chronic toxicity WQBELs, citing the Bay Area Clean Water Agencies comments. *Las Gallinas recommends multiplying the numeric criterion (1.0 TU_c) by the dilution ratio (3.25:1) to obtain a monthly limit and multiplying the result by two to obtain a daily limit. It cites Basin Plan Table 4-5 as the basis for this approach since the accelerated monitoring triggers there for deep-water discharges (assumed to achieve dilution of at least 10:1) are 10 times the triggers for shallow-water dischargers, and since the ratio between the single-sample maximum triggers and three-sample median triggers is 2.*

Response to Las Gallinas Comment 2.d

We disagree. While various means of calculating chronic toxicity WQBELs are possible, the approach we used for this tentative order is technically sound because we relied on the SIP protocol as guidance. U.S. EPA recommends that toxicity WQBELs be derived using a statistical approach (TSD, section 5.4.2, page 104), and the SIP-based procedure is one such approach. Using the SIP as guidance is therefore appropriate here.

We revised Fact Sheet section IV.C.4.d as follows:

> **WQBEL Calculations.** The following table shows the WQBEL calculations. Calculations for chemical-specific pollutants are in accordance with the SIP. Calculations for chronic toxicity use the SIP methodology as guidance because U.S. EPA recommends that toxicity WQBELs be derived using a statistical approach (see Technical Support Document, section 5.4.2), and the SIP-based procedure is one such approach.

The approach Las Gallinas proposes is less sound because it equates triggers for accelerated monitoring to WQBELs and assumes that the relationship between single-sample maximum triggers and three-sample median triggers equates to daily and monthly limits. It is also not a statistical approach. Moreover, unlike the SIP-based approach, the Las Gallinas approach does not account for the presumed averaging period for the translated water quality criterion. U.S. EPA recommends that 1.0 TU_c be treated as a criterion continuous concentration, which implies a four-day average. With the Las Gallinas proposal, this criterion would be met at the edge of the mixing zone only as a monthly average.

Las Gallinas Comment 3

Las Gallinas requests that acute toxicity WQBELs and related monitoring requirements be removed from the tentative order. *Las Gallinas points out that chronic toxicity is a more stringent test, that it has*

a long history of compliance with the acute toxicity WQBELs, and that the Los Angeles Regional Water Board recently removed acute toxicity requirements from one of its NPDES permits.

Response to Las Gallinas Comment 3

We disagree. Basin Plan section 4.5.5.3.1 and Table 4-3 require acute toxicity WQBELs even though Las Gallinas has a history of compliance with these limits. The Los Angeles Regional Water Board's *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* does not contain the same requirements.

Las Gallinas Comment 4.a

Las Gallinas is concerned that the required tasks to reduce blending are overtly prescriptive. *Las Gallinas requests that Table 5, Task 1, be revised to allow it more flexibility in carrying out necessary improvements. It notes that complete elimination of blending may not be practicable.*

Response to Las Gallinas Comment 4.a

We agree and revised Table 5, Task 1, as follows:

> The Discharger shall develop an updated Wet Weather Improvement Plan…. The Plan shall specify measures to be implemented at the plant and wastewater collection system, and identify their costs, implementation schedules, and proposed funding mechanisms. These measures shall include, but are not limited to, the following:
>
> a. Implementation of collection system capital improvement projects …;
>
> b. ~~R~~ Feasible reduction of rainwater inflow from known sources …;
>
> c. Construction of an additional secondary clarifier;
>
> d. Construction of a flow equalization system ~~basin (approximately one million gallons)~~;
>
> e. Construction of new activated sludge basins or other secondary treatment capacity enhancements.
>
> The Plan may include alternatives to items c, d, and e above that provide an equivalent means of achieving the blending reduction goals.
>
> The Discharger shall identify in the plan the measures to be undertaken during the term of this Order. ...

Contrary to Las Gallinas's wishes, we did not revise the goal of the plan outlined above to be the elimination of wet weather blending as a "routine flow management strategy." We believe the goal should simply be the elimination of blending. Attachment D section I.G.3 sufficiently provides for bypasses related to rare, non-routine wet weather events.

Las Gallinas Comment 4.b

Las Gallinas requests that the reliable process capacity of the secondary treatment units be expressed as 8 MGD, rather than 8.0 MGD. *Las Gallinas points out that blending thresholds are controlled by weirs that are typically not accurate to 0.1 MGD. It also requests a change to acknowledge that the original plant was designed in the 1950s and many changes have occurred since. The tentative order should not require adherence to the original design.*

Response to Las Gallinas Comment 4.b

We agree and revised Discharge Prohibition III.C (second paragraph) as follows:

> Blended wastewater is biologically-treated wastewater blended with wastewater diverted around secondary (biological) treatment units. Such discharges are hereby approved under the bypass conditions stated in 40 C.F.R. section 122.41(m)(4) when (1) the peak wet weather influent flow volume exceeds the reliable process capacity of the secondary treatment units of ~~8.0~~ million gallons per day (MGD), (2) the discharge complies with the effluent and receiving water limitations contained in this Order, and (3) the Discharger complies with Provision VI.C.5.b of this Order. The Discharger shall operate ~~its~~ the Facility ~~as designed and~~ in accordance with its Operation and Maintenance Manual. It shall optimize storage and use of equalization units~~,~~ and fully use the biological treatment units and advanced treatment units. The Discharger shall report incidents of blended effluent discharges in self-monitoring reports and monitor such discharges as specified in the MRP.

Las Gallinas Comment 5

Las Gallinas points out several typographical errors and requests that a sentence be added to the chronic toxicity reasonable potential analysis noting that potential toxicity impacts are mitigated in part by the seasonal discharge prohibition.

Response to Las Gallinas Comment 5

We agree and revised Fact Sheet section I.D as follows:

> The Discharger is also regulated under Water Reuse Order No. 89-127, Water Reuse Order No. ~~0~~92-064, and General Reuse Order No. 96-011, which establish requirements on water reclamation and reuse. This Order does not affect those orders.

We revised Fact Sheet section II.A.6 as follows:

> **Stormwater Management**. All stormwater within the plant boundaries, excluding the reclamation area, is directed to the plant headworks; therefore, coverage under the statewide permit for discharge of stormwater associated with industrial activities (NPDES General Permit No. CAS000001) is not required. Stormwater accumulated in the storage ponds at the reclamation area may be recycled as described above or routed to the headworks. Direct discharge to Miller Creek is prohibited (see Discharge Prohibition III.B). ~~It may not be discharged to Miller Creek unless the Discharger certifies that no treated effluent has been mixed in with the stormwater (see Provision VI.C.5.f of the Order).~~

We revised Fact Sheet Table F-2 as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Period	Effluent Limitations			Monitoring Data (12/09–05/14)		
			Monthly Average	Weekly Average	Daily Maximum	Highest Average Monthly	Highest Average Weekly	Highest Daily Discharge
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
Nickel	µg/L	November -May	11	---	18	5.9	---	7.5
Selenium	µg/L		3.6	---	9.2	0.60 ~~0.06~~	---	0.74 ~~0.06~~

Parameter	Units	Period	Effluent Limitations			Monitoring Data (12/09–05/14)		
			Monthly Average	Weekly Average	Daily Maximum	Highest Average Monthly	Highest Average Weekly	Highest Daily Discharge
Cyanide	µg/L		6.9	---	14	6.2	---	9.4
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

We revised Fact Sheet section IV.C.3.e.ii (third paragraph) as follows:

> Although the Discharger has been engaging in community outreach to reduce pyrethoids in plant influent, there remains a reasonable potential for the discharge to cause chronic toxicity in the receiving water during discharge because toxicity has been observed in the discharge repeatedly in the recent past. (Discharge is generally prohibited from June through October when receiving water flows are low.)

Bay Area Clean Water Agencies (BACWA)

BACWA Comment 1

There is no regulation that establishes a methodology for reasonable potential determination and calculation of effluent limits for chronic toxicity. *BACWA recommends that the Regional Water Board engage in a collaborative stakeholder process to develop a regional toxicity strategy for determining reasonable potential and setting chronic toxicity WQBELs. It contends that the methodology used in the tentative order is* ad hoc*, not developed through a transparent public process, and not technically sound. It recommends consideration of a watershed toxicity permit, particularly given the availability of effluent and receiving water toxicity data (e.g., Regional Monitoring Program data).*

Response to BACWA Comment 1

We disagree. The tentative order is based on duly adopted regulations and follows the SIP and TSD as guidance in reasonable potential determination and calculation of chronic toxicity WQBELs. Fact Sheet sections IV.C.3.e and IV.C.4.a, b, and d provide step-by-step explanations. (See our responses to Las Gallinas Comments 1.a, 2.b, 2.c, and 2.d.) As such, the tentative order is not ad hoc and does not establish new regulations without a transparent public process. Moreover, the tentative order itself has been subject to a transparent public process. We provided public notice of the proposal through a newspaper ad in the *Marin Independent Journal*, a notice sent through our email list-serve, and a post on the Regional Water Board's web site. These comments and responses are also part of the transparent public process, along with the Board hearing.

Concerning the suggestion for a watershed toxicity permit, such an approach would only be appropriate if there were, or could be, sharing of discharge limits, such as the group limits for mercury. Toxicity issues are most often facility-specific. For instance, mixing zones may be appropriate at some locations and not at others and can vary in size depending on site-specific conditions. Furthermore, Regional Monitoring Program data alone provide a weak basis for evaluating reasonable potential for individual discharges to cause or contribute to exceedances of water quality standards near specific outfalls.

BACWA Comment 2

Reasonable potential should not be based on trigger exceedances since triggers do not constitute water quality objectives. *BACWA asserts that the reasonable potential analysis in the tentative order is based on exceedances of accelerated monitoring triggers. It also suggests that the tentative order establishes a new water quality objective and thus necessitates compliance with Water Code section 13241.*

Response to BACWA Comment 2

We disagree. The reasonable potential analysis (see Fact Sheet section IV.C.3.e of the tentative order) does not consider the triggers in Basin Plan Table 4-5. Moreover, the tentative order does not establish a new objective; it relies on the existing narrative toxicity objective in Basin Plan section 3.3.18. See our responses to Las Gallinas Comments 2.b and 2.c.

BACWA Comment 3

Where imposed, numeric chronic toxicity limits should replace triggers. *BACWA recommends that the triggers requiring accelerated monitoring and TREs be removed because they are unnecessary when combined with numeric WQBELs.*

Response to BACWA Comment 3

We disagree. Basin Plan section 4.5.5.3.2 and Table 4-5 require chronic toxicity triggers for accelerated monitoring and TREs. See our response to Las Gallinas Comment 1.b.

BACWA Comment 4

Calculation of effluent limits for toxicity do not make sense using the SIP procedure. *BACWA contends that the SIP approach is inappropriate for chronic toxicity, particularly when the background receiving water value is assumed to be 0 TU_c. It proposes instead calculating the chronic toxicity WQBELs by multiplying the numeric criterion (1.0 TU_c) by the dilution ratio (3.25:1) for the monthly limit and applying a factor of two for the daily limit. It reasons this approach is consistent with the way the accelerated monitoring triggers in Basin Plan Table 4-5 were determined.*

Response to BACWA Comment 4

We disagree. As explained in our response to Las Gallinas Comment 2.d, the SIP-based procedure used for this tentative order is technically sound because U.S. EPA recommends that toxicity WQBELs be derived using a statistical approach (TSD, section 5.4.2, page 104), and the SIP-based procedure is one such approach. BACWA's proposal is less sound since it is simply based on triggers for accelerated monitoring.

Because far-field receiving waters contain only episodic chronic toxicity that has been linked to Central Valley inputs, our calculations assume a background toxicity of 0 TU_c. This provides the full dilution credit associated with the established mixing zone; any other assumption would result in more stringent WQBELs. U.S. EPA also recommends assuming 0 TU_c as background (TSD, section 7.2.3, page 132).

BACWA Comment 5

Toxicity testing measures an effect, rather than a toxicant, and is inherently variable. Dischargers should be given the opportunity to investigate results and invalidate a spurious toxicity test result when identified. *BACWA wants dischargers to be able to invalidate toxicity findings when test results do not meet quality assurance/quality control (QA/QC) standards. It points out that measurements of toxic effects are inherently variable, and that low-level toxic effects are transient or non-persistent.*

Nonetheless, such results trigger accelerated monitoring and TREs, and give rise to major analytical costs. It suggests that a minimum detection limit and QA/QC procedures be developed. It also suggests that chronic toxicity WQBELs be developed using the largest feasible mixing zones.

Response to BACWA Comment 5

We agree that dischargers should be given an opportunity to invalidate spurious toxicity test results. Attachment G section V.C.1.a.5 allows dischargers to invalidate any measurement (with cause) even after it is reported to the Regional Water Board. However, minimum detection limits and new QA/QC protocols are unnecessary. Monitoring and Reporting Program section V.B.1.d requires chronic toxicity bioassays to be conducted in compliance with the most recently promulgated test methods. Currently, these are *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, third edition (EPA-821-R-02-014). These methods detail QA/QC requirements and describe statistical tests that take into consideration data variability when calculating toxicity results. Moreover, Attachment G section III.A.1 requires that all analyses be performed by a laboratory certified by the Environmental Laboratory Accreditation Program (ELAP). QA/QC is key to ELAP certification.

We disagree that chronic toxicity WQBELs should be developed using the largest feasible mixing zones. Basin Plan section 4.5.5.3.2 allows dilution credits comparable to those allowed for chemical pollutants. U.S. EPA stresses the importance of minimizing overall mixing zone size (TSD, section 4.3.2, page 71). Similarly, SIP section 1.4.2.2 requires that mixing zones be as small as practicable.

BACWA Comment 6

Chronic toxicity testing is more conservative than acute testing so dischargers should have the opportunity to have their acute toxicity limits and monitoring requirements removed. *BACWA recommends that acute toxicity limits and monitoring requirements be removed if there is no reasonable potential for acute toxicity to cause or contribute to an exceedance of the toxicity objective. It reasons that chronic toxicity tests are more sensitive than acute toxicity tests and that having both chronic and acute toxicity WQBELs and associated monitoring is unnecessary.*

Response to BACWA Comment 6

We disagree. Basin Plan section 4.5.5.3.1 and Table 4-3 require acute toxicity WQBELs. Furthermore, while chronic tests are generally more sensitive than acute tests, the chronic toxicity limits in the tentative order were made less stringent by allowing for dilution credits, whereas the Basin Plan does not allow dilution credits for acute toxicity limits.

California Association of Sanitation Agencies (CASA)

CASA Comment

CASA requests that the numeric chronic toxicity WQBELs be replaced with a narrative chronic toxicity limit with triggers until a statewide toxicity plan is adopted. *CASA believes including numeric limits in the permit in advance of a Statewide plan is premature and inappropriate.*

Response to CASA Comment

We disagree. Numeric chronic toxicity WQBELs are consistent with federal regulations. See our response to Las Gallinas Comment 1.a.

U.S. Environmental Protection Agency (U.S. EPA)

U.S. EPA Comment

U.S. EPA supports the application of numeric chronic toxicity WQBELs in the tentative order and inclusion of both monthly and daily WQBELs. *U.S. EPA confirms that, by requiring numeric chronic toxicity WQBELs, the tentative order meets the requirements of Clean Water Act sections 301(b)(1)(c) and 40 C.F.R. sections 122.44(d)(1)(i) and (v). It notes that acute toxicity WQBELs may not be required if no acute toxicity was observed during the previous order term. It further notes its support for using the proposed chronic toxicity WQBELs as triggers for accelerated monitoring and TREs in lieu of the triggers in the tentative order.*

Response to U.S. EPA Comment

Basin Plan section 4.5.5.3.1 and Table 4-3 require acute toxicity WQBELs. Also, Basin Plan section 4.5.5.3.2 and Table 4-5 require the chronic toxicity triggers for accelerated monitoring and TREs that appear in the tentative order. See our response to Las Gallinas Comment 1.b.

Regional Water Board Staff-Initiated Changes

In addition to making minor editorial and formatting changes, we revised Monitoring and Reporting Program Table E-1 and section IV to clarify and enable electronic reporting of recycle water flows and to enhance compliance evaluation of the dry season prohibition (Discharge Prohibition III.B). Specifically, we revised Monitoring and Reporting Table E-1 as follows:

Table E-1. Monitoring Locations

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description
⋮	⋮	⋮
Effluent	EFF-001B (blending)	Any point in the discharge pipeline from the plant to Miller Creek (via either Discharge Point No. 001 or 002) where all blended wastewater (i.e., fully-treated and primary-treated effluent combined) flow tributary to the outfall is present (may be the same as Monitoring Location ~~No.~~ EFF-001).
Effluent	REC-001	Any point in the discharge pipelines from the plant where wastewater treatment, including disinfection, is complete, and all flow tributary to water recycling facilities is represented (may be a calculated total from flow meters on individual recycled water streams).
Biosolids	BIO-001	Facility biosolids
⋮	⋮	⋮

We revised Monitoring and Reporting section IV as follows:

EFFLUENT MONITORING REQUIREMENTS

A. Effluent Monitoring (Monitoring Locations EFF-001 and REC-001)

The Discharger shall monitor effluent at Monitoring Location EFF-001 as follows when discharging to Miller Creek (except when blending). Flow shall be monitored year round; effluent flows directed to all onsite and offsite water recycling facilities shall be reported separately under Monitoring Location REC-001. For necessary E-001 discharges during the non-discharge season (June 1 to October 31), the Discharger shall monitor flow, BOD_5, TSS, pH, chlorine residual, enterococcus bacteria, ammonia, and cyanide. Monitoring the other parameters is not required.

We revised Monitoring and Reporting Table E-6 as follows:

Table E-6. CIWQS Reporting

Parameter	**Method of Reporting**	
	EDF/CDF data upload or manual entry	**Attached File**
⋮	⋮	⋮
Dissolved Oxygen Temperature	Required for monthly maximum and minimum results only [1]	Discharger may use this method for all results or keep records
~~Cyanide~~ Antimony Arsenic Beryllium Cadmium Chromium Copper Cyanide Lead Mercury Nickel Selenium Silver Thallium Zinc Dioxins and Furans (by U.S. EPA Method 1613) Other Pollutants (by U.S. EPA methods 601, 602, 608, 610, 614, 624, and 625)	Required for all results [2]	
~~Antimony~~ ~~Beryllium~~ ~~Thallium~~ ~~Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)~~	~~Not required (unless identified in influent, effluent, or receiving water monitoring tables), but encouraged~~ [1]	~~Discharger may use this method and submit results with application for permit reissuance, unless data are submitted by CDF/EDF upload~~
Volume and Duration of Blended Discharge [3]	Required for all blended effluent discharges	
⋮	⋮	⋮

We revised Monitoring and Reporting section VII.B.5 to remove redundant text as follows:

Compliance Determination

~~**a.**~~ Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in the Fact Sheet and Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

~~**b. When determining compliance with an AMEL or MDEL 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 "non-detect" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following:~~

~~**i.** 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.~~

~~**ii.** The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of 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.~~

We revised Fact Sheet Table F-8 to correct typographical errors as follows:

Table F-8. WQBEL Calculations

PRIORITY POLLUTANTS	Copper	Nickel	Cyanide	Dioxin-TEQ	Bis (2-Ethylhexyl) Phthalate	Chronic Toxicity
Units	ug/L	ug/L	ug/L	ug/L	ug/L	TU_c
⋮	⋮	⋮	⋮	⋮	⋮	⋮
ECA acute mult99	0.66	0.52	0.23	----	----	~~0.53~~
ECA chronic mult99	0.81	0.71	0.41	----	----	0.53 ~~—~~
LTA acute	7.52	47	6.7	-----	-----	~~1.7~~
LTA chronic	8.68	10	3.5	----	----	1.7 ~~—~~
minimum of LTAs	7.52	10	3.5	-----	-----	1.7
⋮	⋮	⋮	⋮	⋮	⋮	⋮